

FINAL REPORT TEMPLATE

PROJECT FINAL REPORT

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² The home page of the website should contain the generic European flag and the FP7 logo which are available in electronic format at the Europa website (logo of the European flag: http://europa.eu/abc/symbols/emblem/index_en.htm ; logo of the 7th FP: http://ec.europa.eu/research/fp7/index_en.cfm?pg=logos). The area of activity of the project should also be mentioned.

1. Final publishable summary report

1.1 Executive Summary

The mission of the TIDE project was to enhance the broad transfer and take-up of 15 innovative urban transport and mobility concepts throughout Europe and to make a visible contribution to establish them as mainstream measures. The TIDE partners made a range of new and feasible solutions easily accessible to address key challenges of urban transport such as energy efficiency, decarbonisation, demographic change, safety, and access for all and new economic and financial conditions. TIDE focused on 15 innovative concepts in five thematic clusters: pricing measures (1), non-motorised transport (2), network and traffic management to support traveller information (3), electric vehicles (4) and public transport organisation (5). Sustainable Urban Mobility Plans were the horizontal topic to integrate the cluster activities.

The project provided a strong approach in methodology, content and outreach. The needs of practitioners in European cities and regions were a guiding principle. A particular focus was put on providing guidance for finding cost-efficient solutions (cost-benefit analysis).

The project refined existing and well proven transferability methodologies and integrated them into an easy to apply handbook. Face-to-Face training and exchange events as well as guidelines and e-learning on how to successfully implement innovative solutions are the key tools to effectively support a wide range of take-up candidates in overcoming real or perceived barriers to implementation. A broad portfolio of dissemination activities ensured a high visibility of the project.

TIDE actively supported 15 committed cities in developing implementation scenarios.

- New Pricing Measures: Milan, Huesca, Gent
- Non-Motorised modes: Donostia-San Sebastian, Aalborg, Craiova
- Network and traffic management: Reading Borough Council, Lyon, Rome
- Electromobility: Rotterdam, Tampere, Barcelona
- Public Transport Organisation: BKK – Budapest, SRM Bologna, Vilnius

They demonstrated how to successfully prepare implementation of innovative solutions and provide examples to a wider group of cities.

1.2 Project context and objectives

About TIDE — Transport Innovation Deployment for Europe

The European TIDE project aims to create improved conditions for cities and regions to integrate innovations in their urban mobility policies. This should lead to increased acceptance and take-up of new urban transport solutions and technologies. TIDE helps cities and regions to address common challenges in a collaborative and integrated way.

Why should you care about innovation?

European cities have indicated on several occasions that innovation could be a way out of the crisis. Innovation can save costs and help reach urban policy goals. But cities lack the resources to complete a full innovation cycle. TIDE helps to shorten the innovation path. Innovative ideas usually originate in one or in a small number of places before they reach wider coverage. TIDE will help cities and regions across Europe to shorten the path towards implementing innovative measures by showing that it is not necessary to re-invent the wheel but much more effective to exchange knowledge on innovation and transfer of successful solutions from one European region to another. Thus, TIDE offers a cost-efficient way of spreading innovation throughout Europe.

Our mission — Guided by your needs!

TIDE has enhanced the broad take-up of 15 innovative urban transport and mobility measures throughout Europe and has made a visible contribution to establishing them as mainstream measures. The TIDE partnership made it easier to access a range of new and feasible solutions that address key challenges of urban transport, such as energy efficiency, decarbonisation, demographic change, safety, access to existing and new economic and financial conditions. TIDE focused on increasing awareness, advancing expertise using existing and new tools, through practical work with cities, and by assessing costs and benefits. Focusing on the needs of transport professionals in European cities was a guiding principle for TIDE. TIDE actively supported 15 committed cities to develop implementation scenarios for innovative urban transport measures, setting the example for an even wider group of take-up candidates. These measures covered the following five TIDE-clusters: (1) new pricing measures, (2) non-motorised transport, (3) advanced network and traffic management to support traveller information, (4) electric mobility and (5) public transport organisation.

The TIDE innovative transport measures

TIDE covers fifteen innovative measures across the five TIDE-Clusters.

Cluster 1: New pricing measures

TIDE has shown that there is an enormous potential for successful implementations of sustainable urban transport systems using new pricing mechanisms. Different innovative tax regimes, pay per use schemes, and pay for availability schemes throughout Europe were considered to help transition cities towards more sustainable and efficient use of transportation systems.

- 1.1 Road user charging in urban areas (Cluster Leading City Milan and Champion City Huesca): Road user charging are direct charges levied for the use of roads to impose the societal costs of using the road. Within TIDE the use of a Low Emission Zone (LEZ) and an access restriction zone were evaluated.
- 1.2 Parking charge policies (Cluster Leading City Milan and Champion City Gent): Parking policy plays an important role in urban mobility. Within TIDE the use of parking charges policies were analysed to reduce vehicle traffic, improve accessibility and increase the efficiency of land use.
- 1.3 Efficient and convenient pricing and charging for multimodal trips (Not addressed by a TIDE city): To promote more sustainable behavior, the European Commission, stresses

the importance of better integration between different modes and between different national systems. TIDE provided guidance to cities on this topic.

Cluster 2: Non-motorised transport

According to some estimates, 5-10% of automobile trips can reasonably be shifted to non-motorised transport in a typical urban area. TIDE attempted to remove numerous barriers that stop people from walking and cycling more regularly, such as the lack of safe cycle lanes, safe pedestrian crossings or secure cycle parking.

- 2.1 Bicycle parking schemes (Cluster Leading City Donostia / San Sebastian and Champion City Craiova): Many cities with rising numbers of cyclists struggle to offer sufficient and secure bicycle parking. TIDE showed example where secure and accessible bicycle parking are a precondition for the uptake of cycling.
- 2.2 Creating people-friendly streets and public spaces (Cluster Leading City Donostia / San Sebastian): TIDE highlighted that the design of urban streets should strongly consider the needs of people who walk or cycle.
- 2.3 Fast cycling lanes (Champion City Aalborg): TIDE showed that like any other transport user, cyclists value short and reliable travel times, direct connections and a safe and pleasant environment for their trips. TIDE helped cities that already have a good share of cycling to develop fast and convenient cycle lanes to sites that are major trip attractors.

Cluster 3: Advanced network and traffic management to support traveller information

Advanced traffic management systems include the collection of on-line data on network and service conditions. TIDE showed how this then used to manage the network through a mixture of control and information provision.

- 3.1 Open data server for applications-based traveller information (Cluster Leading City Reading and Champion City Rome): TIDE showed how the provision of an open access server allows any third party to freely use such traffic data to provide traveller information services for a variety of user groups.
- 3.2 User-friendly human machine interface for traveller information (Cluster Leading City Reading and Champion City Lyon): TIDE provided examples how timely, accurate and relevant multi-modal traveller information disseminated through personal mobile devices enhances connectivity, convenience and confidence when travelling.
- 3.3 Advanced priority systems for public transport (Not addressed by a TIDE city): Giving traffic signal priority to public transport (buses/trams) according to need can lead to improved service regularity, which reduces passenger waiting times.

Cluster 4: Electric mobility

Electric propulsion can be a very important component of a sustainable transport strategy, if it is systematically integrated into mobility concepts. TIDE addressed the barriers for the uptake such as the perceived risk of implementation, financial uncertainties, or missing information on relevant technologies and stakeholders.

- 4.1 Clean city logistics (Cluster Leading City Rotterdam and Champion City Barcelona): TIDE showed that with repeating daily routes, limited distances and frequent stops inner-city delivery and city logistics provide an ideal field of application for battery electric vehicles (BEV)
- 4.2 Financing schemes for charging stations (Cluster Leading City Rotterdam and Champion City Tampere): TIDE highlighted that the installation of charging infrastructure is a necessary condition for the market diffusion of electric vehicles. While private parking spaces are the primary choice of charging especially overnight, charging stations at (semi-)public spaces are important to promote electric driving and reduce the user's range anxiety.

- 4.3 Inductive charging for public transport (Not addressed by a TIDE city): For trams and buses with fixed routes and fixed stops (for example the end stops of each run), inductive charging becomes very interesting, since it reduces the necessary battery capacity (=cost) and increases the degree of utilization. Trams and buses can be charged comfortably during breaks of the driver, or at longer stops.

Cluster 5: Public transport organisation

The organization of public transport includes the programming of its operation and development in a given geographical area. TIDE showed that for an efficient operation, it is necessary to determine the form of market relations, the market structure and the scope of its regulation as well as the financing system.

- 5.1 Creation of public transport management bodies for metropolitan areas (Cluster Leading City Budapest and Champion City Vilnius): TIDE showed that the integrated planning of public transport should be the responsibility of specialised bodies which focus on strengthening both integration and competition within transport systems in order to provide maximum value for money and to balance spatial and environmental issues.
- 5.2 Contracting of services focused on improving passenger satisfaction and efficiency (Cluster Leading City Budapest): TIDE highlighted that the key success factor of tendering is effective drafting of a contract that focusses on motivating an operator to deliver optimal level of quality and features customer needsthey willing to pay for.
- 5.3 Marketing research as optimisation tool in public transport (Champion City Bologna): Marketing research is widely used in the business sector. TIDE showed examples from public transport, where it could be used for evaluation, improvement and for predicting future changes in travel behaviour.

Reducing the risk of starting something new

Most European cities want to be innovative, but not all want to be the first to implement a new measure. Local decision makers want to reduce or be able to manage the risk that comes with implementing innovative urban transport measures. Local decision makers are faced with a number of risk factors :

- Financial: will we be able to afford the measure?
- Political: will the measure be accepted, and will citizens vote in favour of it?
- Effectiveness: will the measure solve the problems it is meant to solve?
- Implementation: will we be able to introduce the measure smoothly, without delays or extra cost?

TIDE provided urban transport professionals with two handbooks that can help manage and reduce the risk of starting something new. The handbooks aim to increase local authorities' knowledge enabling them to fully understand the barriers, drivers and risks of innovation in urban transport.

Understanding context conditions for successful innovation —

TIDE provided a framework for Cities on how to cooperate with external experts on the implementation of a measures. By analysing the needs and expectations of TIDE cities a sound basis for the cooperation of the TIDE cities with the Cluster Support Partners was created. The document can be seen as a self-assessment at the beginning of the planning process to identify strengths and weaknesses and to understand the TIDE Cities potential for a successful implementation of an Innovative Measure.

Systematic transfer – theory to reality

On one hand, TIDE recognised the need to bring to a larger audience both the idea of systematic transfer itself and the innovative measures that the project identified for transfer. On the other hand, research has indicated that cities approach policy innovation and policy learning through peer-to-peer exchange and that simply producing documents and sending information out electronically would be less effective than a systematic process with a group of cities that could

learn from one another. The TIDE Circle of Innovative Cities became this group, following the activities of the project – and actively participating – over a period of two years. The roughly 50 cities were offered the opportunity for ongoing learning and exchange through participation in three thematic workshops as well as online learning opportunities, webinars and exchange of ideas and experience. The group received an overview on innovation, on transfer and on the TIDE transfer methodology (workshop 1), followed by topic-specific discussions and site visits in smaller groups (workshop series 2), and finally integrating innovative urban transport measures into sustainable urban mobility planning (workshop 3).

The result was broad coverage across Europe, with cities and regions addressed at different stages of the innovation decision process, enabling systematic support for transfer at different levels of intensity from practical on-site support to dissemination of information.

Transferability - Is our city ready for innovation?

A key objective of TIDE was to foster the transfer of innovative transport solutions between European cities. To support this, a TIDE transferability handbook was developed, which provides key information about the steps towards uptake and implementation of innovative measures. To achieve more widespread implementation and harmonisation of leading innovations and technologies, there is a need to share best practice across and between European cities. This process requires a methodology to determine whether and how such innovations can be transferred from one place to another. The use of such a transferability methodology provides an opportunity to learn from the previous experience of implementation, to better exploit opportunities and to avoid repeating mistakes. Even though the successful implementation of a measure in a given city provides grounds for transferring the measure to other cities, the right conditions are needed to make it a reality.

Understanding the intrinsic value of a measure — impact Assessment - Is the measure good for our city?

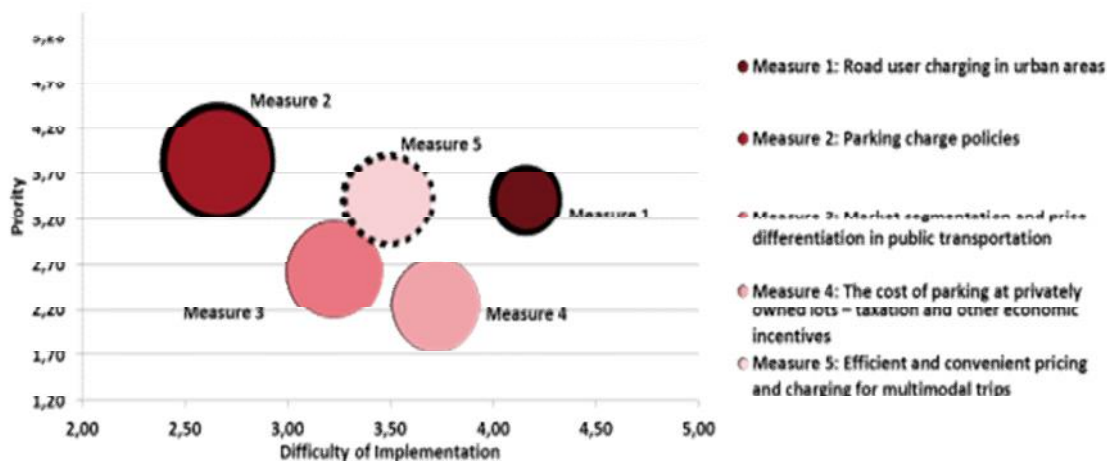
The TIDE Impact Assessment Handbook complements the transferability analysis and provides further advice on the feasibility of the implementation of innovative urban transport measures. Local authorities are often confronted with a number of urban mobility problems, for which a multitude of alternative solutions are available. To select the optimal solution, it requires considering multiple criteria. This makes the whole process a challenging one. It is especially true with regards innovative measures for which detailed knowledge of potential costs and benefits, and overall impact is typically limited. This handbook outlines the TIDE assessment method, developed to facilitate the implementation of sustainable urban mobility measures. The method gives local authorities the tools to make a holistic evaluation of transport measures' or transport projects' potential to address local concerns. Thus, it enables them to make informed transport policy and planning decisions.

1.3 Main S&T results / foregrounds

1.3.1 Selecting the TIDE innovative measures

Starting from the five call topics, TIDE followed a structured process to assess the actual innovation level in European cities of urban mobility measures. This was necessary in order to arrive to three well-defined innovative measures per thematic cluster. The project started with a long-list of five measures that was narrowed down to three measures per cluster. Two measures were pre-selected in dialogue with the TIDE Cluster Leading Cities in the proposal phase: these were the measures that they preferred to bring forward. The selection process for the third innovative measure in each cluster is described in TIDE's Deliverable 1.1 "Selection of Innovative Measures". The methodology used to select the measures combines the results of a Europe-wide online survey, the results of a quick-survey conducted at the TIDE workshop in Perugia on the 28th of November 2012 (leading to 324 responses) and the expertise of the TIDE consortium, the Cluster Leading Cities and their support partners.

For each of the cluster topics, the priority level as well as the difficulty to implement were assessed. The following graph gives one example of this approach (for the cluster New Pricing Measures).



○ Measures already selected by cluster leaders during the proposal phase

⊙ Measure with highest potential for further research according to survey results: **Measure 5**

Finally, the EU policy relevance for the respective clusters and measures was assessed and summarised, referencing innovations against EU policy frameworks and EU legislation. As a result of this process the following 15 Innovative Measures were selected to be the basis of the TIDE activities.

Cluster 1: New pricing measures

- Measure 1.1: Road user charging in urban areas
- Measure 1.2: Parking charge policies
- Measure 1.3: Efficient and convenient pricing and charging for multimodal trips

Cluster 2: Non-motorised Transport

- Measure 2.1: Innovative Bicycle Parking schemes
- Measure 2.2: Creating people friendly streets and public spaces

- Measure 2.3: Fast Cycle Lanes

Cluster 3: Advanced network and traffic management to support traveller information

- Measure 3.1: Open-access server for applications-based traveller information
- Measure 3.2: User friendly human machine interface (HMI) for traveller information
- Measure 3.3: Advanced priority systems for public transport

Cluster 4: Advanced network and traffic management to support traveller information

- Measure 4.1: Clean City Logistics
- Measure 4.2: Financing Schemes for Charging Stations
- Measure 4.3: Inductive Charging for Public Transport

Cluster 5: Advanced network and traffic management to support traveller information

- Measure 5.1: Creation of public transport management bodies for metropolitan areas
- Measure 5.2: Contracting of services focused on improvement of passenger satisfaction and efficiency
- Measure 5.3: Marketing research as optimisation tool in public transport

1.3.2. Understanding Transferability of Innovative measures.

Transferability is a process of verifying the chances of a successful implementation of a measure successfully implemented in a city (pioneer city) to the adopting city at an operational or implementation level. The process analyses various factors influencing potential implementation, learning from the experiences of the pioneer city. The use of a transferability methodology provides an opportunity to learn from the previous experience of implementation to better exploit opportunities and avoid mistakes. Even though a successful implementation of a measure in a city provides grounds for transferring the measure to other cities, the right conditions are needed to make it a reality. The replication of success in a different urban context is challenging as the cities can differ in many aspects of transport and traffic conditions (demand, supply, infrastructure, traffic

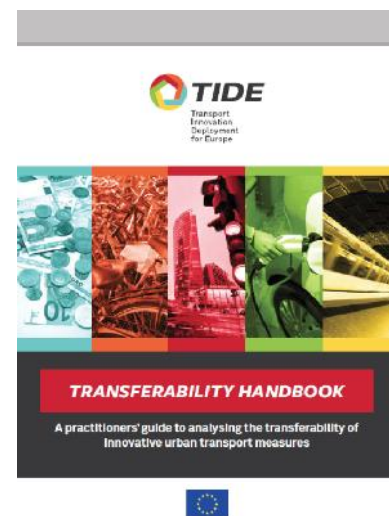
control and management, etc.), geographical, environmental, demographic, socio-economic and cultural backgrounds as well as institutional and legal frameworks. The transferability methodology will help to identify those factors which are key to the measure's success and must be addressed in a new location. It also helps to identify those factors which have created barriers so that they can either be overcome or the decision can be made not to introduce the measure.

The TIDE project refined existing and well-proven methodologies for the transfer of innovative measures and has integrated them into this easy to apply Transferability Handbook.

The TIDE transferability method was developed on the basis of an extensive review of current transferability methods in scientific literature, practitioners' guidelines and handbooks; and a workshop held in January 2013 in Brussels, during which focus groups including external experts, city representatives and TIDE partners discussed transferability methodologies suitable for the TIDE measures.

The TIDE transferability approach is described in a handbook, illustrated with concrete examples of the transferability methodology applied to an innovative measure of each of the TIDE themes.

- (1) STEP 1: Mission statement/objectives and scoping: A clearly defined mission statement (or clear objectives) and a realistic scope for a measure are the first step of a transferability assessment. This should avoid any misunderstanding during the subsequent transferability and implementation processes. The rest of the transferability steps should only be carried



out after the adopter understands and agrees with the objectives and scope of the measure.

- (2) STEP 2: Clarification of the impacts of the measure: Identification and quantification of the impacts of a measure provide the essential justification and supporting evidence for consideration of the measure for implementation by the potential adopting city. These impacts are likely to vary according to the measure being analysed for potential transferability. For example, the impacts could include changes in efficiency (capacity, journey time.....); safety; environment (emissions, noise, visual intrusion.....); etc.
- (3) STEP 3: Identification of up-scaling/downscaling need: It is important to determine whether scaling (up-scaling or down-scaling) of the measure is required. For example, if a route based measure (e.g. bus priority) is considered for application to a whole city then up-scaling is required. If this is the case, the potential implications of such scaling needs to be taken into account when carrying out subsequent transferability assessment steps. This depends on the context conditions, mainly the implementation size, of the Adopter city in comparison to the Pioneer city.
- (4) STEP 4: Identification of the main components and characteristics: In this step, the main factors (termed here as components) that can contribute to the success (or failure) of a measure are identified so that their relevance to transferability can be assessed. These include: policy, finance, stakeholder involvement, technical requirements, demographic issues, institutional and legal frameworks, etc. These components are further broken down into sub categories (termed here as characteristics) relevant to transferability. For example, the characteristics of policy (component) may include: public transport policy, accessibility policy, etc. The identification of components and characteristics of a measure in the context of the transferability depends on the experience of the pioneer city.
- (5) STEP 5: Identify the level of importance of the characteristics: This step requires the relative level of importance (i.e. high/medium/low) of each characteristic to be judged from the viewpoint of the adopter city. Of course, the experience of the pioneer city and advice from the experts in the field are also valuable in this process. The chosen level of importance should be supported by comments.
- (6) STEP 6: Assessment of the characteristics in the context of the adopter city: This is a subjective assessment informed by the ease or difficulty experienced in implementing the measure in the pioneer city, but modified by potential changes that could be made in the adopter city. A discussion with the cities (pioneer and adopter) as well as the experts in the field is likely to be needed for this step. If the assessment is carried out in a group, an anonymous scoring approach could be effective.
- (7) STEP 7: Conclusions: The final step of the transferability assessment is to draw conclusions about the potential for transferability through consideration of the factors identified and the assessment values ascribed to each. This should include discussion of all the key success factors and key barriers for transferring the measure. In addition, it should include discussion of the mitigating actions that could overcome key barriers. Based on the discussion, the concluding remarks on the chances of successful transferability should be made.



The transferability approach was also applied to the TIDE clusters and measures, identifying barriers and drivers for transfer. Detailed assessments for all measures have been provided in the

project's deliverable D2.3 Report on implementation issues and transferability potential of innovative measures. These were the key outcomes:

Key success factors:

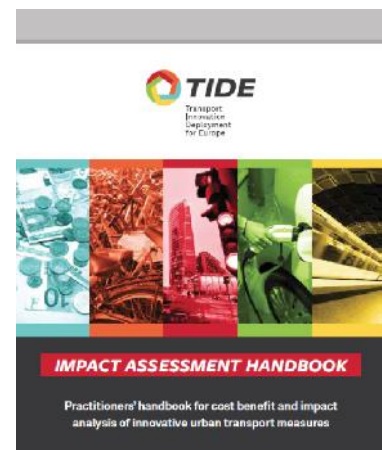
- Demand: Demand is identified as the key success factor for measures providing “service or facility”. This was identified as the key success factor for measures such as cycle parking, cycling lane, open data access, user friendly HMI
- Policy: A policy consistent with the measure is a key success factor for implementation. This was identified for all the measures of Cluster 1 to 3
- Political support: This is a key factor in the successful implementation of most measures. This is more of the case when implementing measures requiring infrastructure development or limiting some one's privilege. Such measures included: road user charging scheme, bicycle parking scheme, people friendly street, fast cycling lanes, advanced bus priority and market research as optimisation tool.
- Stakeholder cooperation: The stakeholder's cooperation is critical for measures which is focussed on stakeholder's active involvement. For user friendly HMI could not be successfully implemented unless there is a cooperation of apps developers. Other measures with such requirements include: Efficient parking, opean data access, userfriendly HMI, clean city logistics and creation of public transport bodies.
- For example, for bicycle parking schemes, stakeholders include: cyclists, land owners (e.g. Railway Company), shop owners, etc. For an open data server, stakeholders include data providers, 3rd party apps developers, apps users, etc. For a public transport management body, stakeholders would include different cities, towns and public transport operators with the metropolitan area.

Key barriers:

- Cost: The cost is a major barrier for the implementation innovative measures requiring significant capital cost. Such measures included road user charging scheme, cycling facilities, advanced bus priority, electric mobility measures and creation of public transport management bodies. The cost implication for other measures such as open data server and user friendly HMI is less.
- Infrastructure: This is a major barrier for the implementation innovative measures requiring or developing infrastructure. Development of infrastructure is costly and requires land and planning permission for such development. The combined effect could be very serious for a city implementing such measure. Such measures included road user charging scheme, bicycle parking scheme, fast cycling lanes, advanced bus priority, clean city logistics and inductive charging.
- Public acceptance: Public acceptance is identified as a key barrier for measures which limits individual right to improve overall benefits. This is true for road user charging and parking charges policy.
- Stakeholders: This is a key factor for successful implementation of a measure. Clearly, the stakeholders are different for different measures. For example, for bicycle parking schemes, stakeholders include: cyclists, land owners (e.g. Railway Company), shop owners, etc. For an open data server, stakeholders include data providers, 3rd party apps developers, apps users, etc.

1.3.3. Understanding the intrinsic value of innovative measures: impact assessment.

In times of constrained budgets, projects' economic viability is a decisive factor, often assessed using cost-benefit analyses. Cost-benefit analyses attempt to express the viability of a project by defining (as many as possible) of a measure's relevant direct and indirect impacts in monetary terms. CBAs assist policymakers in



understanding the wider impacts of a project, including its external costs. A drawback of the method is its limited ability to reflect difficult to monetise impacts (e.g. improved comfort or improved quality of life). In addition to CBAs, multi-criteria analyses can, and are increasingly, used to assess qualitative effects.

TIDE produced in this respect the deliverable D5.1 Methodologies for cost-benefit and impact analyses in urban transport innovations as well as the TIDE impact assessment handbook, explaining a practical impact assessment methodology based upon:

- an extensive review of CBAs related to the TIDE measures and on current methods in transport project appraisal, including scientific literature as well as practitioners' guidelines and handbooks;
- a survey of the TIDE leading and champion cities regarding their current practices and experience with cost-benefit analysis for local transport policies and measures. The survey was completed in March 2013 (leading cities) and June 2013 (champion cities);
- a workshop conducted in April 2013 in Budapest, during which focus groups, including external CBA experts, city representatives and cluster support partners, discussed suitable methodologies for the TIDE measures.

The method follows these eight steps:

1. Describe project and alternatives. The planned project and alternatives, including the reference (BAU) case are described. The assessment details (e.g. appraisal period) are determined.
2. Identify effects and indicators. The effects by which measures should be assessed, along with the indicators by which the performance in the effects should be measured are identified.
3. Impact assessment. The magnitude the assessment effects caused by BAU and the proposed measure (and any alternative measures) are determined.
4. Normalisation. The performance figures are converted to unitless, relative numbers.
5. Effect weighting. The importance of the effects and their magnitude are assigned by means of a weight value.
6. Visualisation and interpretation. Final scores for each measure are calculated from the normalised performance and weighting value, which can be displayed in graphs.
7. Sensitivity analysis. The significance of individual effects is assessed to test the effect of less-reliable assumptions/values.
8. Communicate results. The results and key information about the assessment procedure are communicated to the decision makers.



The handbook includes a well-developed example of an application of the TIDE impact assessment methodology to the procurement of clean buses. An excel tool to easily apply the methodology is provided at www.tide-innovation.eu

1.3.4 Implementation scenarios and preparation for take-up

The main objective of TIDE was to enhance take-up of urban transport innovation. The TIDE cities provide the showcases to make the feasibility of the implementation visible to a wider range of cities. It is clear that in a coordination and support action no real implementation can be funded. The TIDE cities were however supported through the project to develop sound city-specific

implementation scenarios for take-up of the selected Innovative Concepts. This means, they all produced a specific kind of action plan (i.e. Implementation Scenario) on how the measures (Innovative Concepts) could be implemented in their own local context.

TIDE had the objective to practically implement take-up processes of innovative urban mobility measures. The project built upon the presence of five advanced cities – innovation leaders – Milano (pricing), Donostia – San Sebastian (non-motorised modes), Reading Borough Council (ITS), Rotterdam (electromobility) and Budapest – BKK (public transport organization).

TIDE selected 10 champion cities (see section 1.4.1) to implement the transferability and impact assessment methods. These cities were:

Cluster 1 – new pricing measures.

- Huesca, Spain
- Gent, Belgium

Cluster 2 – non-motorised transport

- Craiova, Romania
- Aalborg, Denmark

Cluster 3 - advanced traffic management for traveller information systems

- Rome, Italy
- Lyon, France

Cluster 4 – electric mobility

- Tampere, Finland
- Barcelona, Spain

Cluster 5 – public transport organization

- Vilnius, Lithuania
- Bologna, Italy

The activities with regards to implementation scenarios and preparation for take-up were organized according to these lines:

- Enhancing the practical take-up and implementation of the Innovative Concepts in the Cluster Leading Cities (first layer) and Champion Cities (second layer cities).
- Developing in close cooperation with key stakeholders from these cities implementation scenarios that outline a concrete action plan for implementing the Innovative Concepts.
- Providing 'Innovation Forums' for exchange between the city stakeholders and European experts on the implementation of the Innovative Concepts.
- Fostering the use of innovative planning and financing strategies for the implementation scenarios.
- Providing in some of the cities showcases of actual implementation of the Innovative Concepts (towards end of project, funded outside TIDE).

The activities followed a phased approach:

Phase 1 - Analysis of needs and expectations of TIDE cities

To provide a sound basis for the cooperation of the TIDE Cities (1st and 2nd layer) with the Cluster Support Partners, an initial analysis of the specific local context and challenges with regard to urban transport and mobility (and beyond) was required. The following activities ensured the successful completion of the task:

- Cluster Support Partners met with the Cluster Leading Cities at different occasions in the first phase of the project (Workshop on selection of Innovative Concepts – see WP 1, Workshop on transferability issues –see WP 2). At the second Consortium Meeting, they also had a first meeting with the selected Champion Cities. These meetings served to

identify the local mobility challenges and to analyse the needs and expectations of the TIDE cities with regard to support needed in TIDE.

- The Cluster Support Partners regularly communicated via e-mail, phone and conference calls with their partner cities.

The results of these activities were summarised by the Cluster Support Partner in a short report D 3.1 Context conditions in TIDE cities (one single standing document per city, 3 for each thematic cluster).

Phase 2: Exchange and discussion at 'Local Innovation Forums'

A successful transfer of the Innovative Concepts indeed needs a strong practical component via exchange between practitioners that have already implemented a given Innovative Concept and those that want to do so in the near future. 'Local Innovation Forums' provided a core element of TIDE, these events combined a site visit with a focus group meeting. The most suitable format was chosen to address the needs of the city. Formats ranged from small stakeholder meetings to conference presentations. Cluster Leading Cities also had the opportunity to conduct outbound visits to other cities. Champion Cities could only conduct inbound Local Innovation Forums. TIDE had a designated budget for leading experts to attend the Local Innovation Forums.

- Cluster Leading Cities: for each of the two Innovative Concepts, one inbound visit each combined with a focus group meeting, as well as one outbound visit combined with a focus group meeting, i.e. a minimum of 4 'Local Innovation Forums' per Cluster Leading City. If the specification of the two different Innovative Concepts covered in a city allows, the 'Innovation Forum' events for them can be joined.
- Champion Cities: One inbound visit and focus group meeting, i.e. a minimum of one 'Local Innovation Forum' event for each Champion City (outbound visit is optional).

This means a total of 23 'Local Innovation Forums' were conducted as part of TIDE. The outcomes of each 'Local Innovation Forum' were summarised in a short report D 3.2 Report on 'Local Innovation Forum' (one single standing document for each 'Local Innovation Forum') by the support partners.

The below tables show for each Cluster when and where the Local Innovation Forums have taken place.

Cluster 1: New pricing measures		
City	Inbound	Outbound
Milan (1.1)	11 March 2014	14-15 Apr 2015 to London
Milan (1.2)	29 Oct 13	6 Jul 2015 to London
Huesca (CC) (1.1)	27 Nov 14	N/A
Gent (CC) (1.2)	04 Sep 14	N/A

Cluster 2: Non-motorised transport		
City	Inbound	Outbound
Donostia / San Sebastian (2.1)	21 – 22 May 2014	2 -4 Oct 2013 to Groningen
Donostia / San Sebastian (2.2)		11-13 Sep 2013 to Walk21 Conference in Munich
Aalborg (CC) (2.3)	25 Mar 2014	N/A
Craiova (CC) (2.1)	19-20 Sep 2014	N/A

Cluster 3: Network and traffic management		
City	Inbound	Outbound
Reading (3.1)	21 Nov 2013	27 April Rome
Reading (3.2)		
Lyon (CC) (3.2)	21 May 2015	N/A
Rome (CC) (3.1)	27 April 2015	N/A

Cluster 4: Electric mobility		
City	Inbound	Outbound
Rotterdam (4.1)	8 Oct 2014 linked to Clean Fleets Conference	27-28 March 2014 to Berlin
Rotterdam (4.2)		
Barcelona (CC) (4.1)	17-18 Jul 2014	N/A
Tampere (CC) (4.2)	9-10 Apr 2014	N/A

Cluster 5: Public transport organization		
City	Inbound	Outbound
Budapest (5.1)	24 Mar 2015	3-4 June 2014 Gdynia
Budapest (5.2)		
Bologna (CC) (5.3)	23-25 Oct 2014 SmartCities Conference	
Vilnius (CC) (5.1)	29-30 Sep 2014	

Phase 3 Development of implementation scenarios

The implementation scenarios in their final stage are mature products that enable political decision makers to buy in and guide the technical staff in carrying out the implementation. That way, TIDE really enhanced the preparation of implementation. The cities were also encouraged to start the implementation of a measure during the lifetime of TIDE, while such activities would be funded outside the project.

The implementation scenarios were developed in close cooperation between the TIDE cities and the respective Cluster Support Partners.

The TIDE Advisory Committee met at midterm of the project to review the status of the implementation scenarios and to provide critical feedback on their further development. An illustrated short version of each implementation scenario (D 3.4) was elaborated to share the cities' stories on the take-up process with others (via dissemination activities in WP 6).

Here follows an overview of the outputs per city.

New Pricing measures

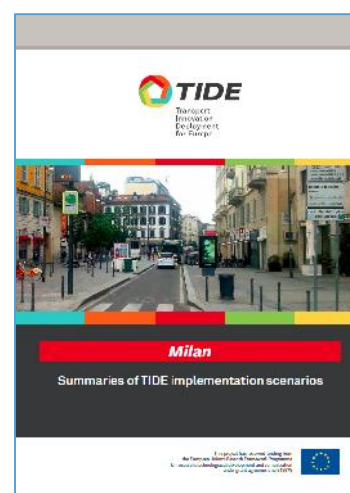
Cluster Leading City – Milan (Measures 1.1 and 1.2)

Milan is the economic and financial centre of northern Italy. Milan is the second-largest city in Italy and the capital of the Lombardy region. The city has a population of about 1.35 million, while its urban area is the 5th largest in the EU and the largest in Italy with an estimated population of about 5.2 million.

Milan is situated in the midpoint of a wide regional urban system, formed not only by the city and the neighbouring towns, but also by other crown cities situated in Lombardy and other regions, which have historically built up a strong relationship network with Milan. The city of Milan is situated in the centre of the Po Valley, surrounded by the Alps and the Apennine mountain ranges.

The Innovative measure

Milan's initial focus within the TIDE project was the issue of a possible enlargement of the successful congestion charging scheme, Area C, set up in 2011 in the city center. However, during the project, the focus shifted towards introducing a low emission zone for the whole Milan territory. Milan is currently developing rules and control technologies with the aim to introduce the LEZ in the next years as part of the SUMP, now under approval. Such a scheme near its municipal boundary.



This policy has been inspired in part by a TIDE funded examination of a similar scheme operating in London. Parking pricing is the other measure in this cluster. Milan has introduced parking measures that promote a higher turnover of parking spaces through a pricing system that increases according to the duration and the location of the parking. Milan is now developing a project aiming to reduce double parking and cruising for parking for the goods delivery sector while also enabling disabled people to easily find parking spaces.

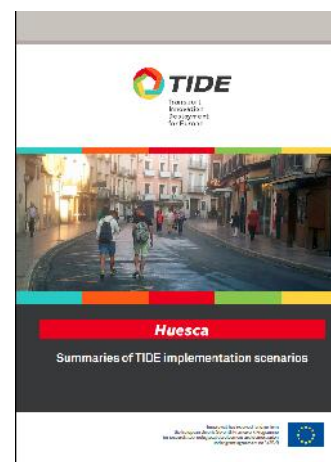
Champion City – Huesca (Measure 1.1)

Huesca is a city in north-eastern Spain and is the capital of the Spanish province of the same name. The population is around 50,000 in the city of Huesca and around 230,000 in the province. That makes it one of the least populated provincial capitals in Spain. The city is located 75 km from Zaragoza, 275 km from Barcelona, 320 km from Toulouse and 375 km from Madrid and Bilbao. The city is well connected to other cities by road and also by high-speed train. There are 8,500 people living in the city centre. There is currently a European project (URBAN) financing the regeneration of the historic city centre. In this area, Huesca has a large number of historical monuments as well as ancient churches, aqueducts and other remains from the Roman and Moorish periods.

The Innovative measure

The objectives of the city are to increase quality of life and commercial activity by increasing public spaces, reducing noise and increasing the number of customers from out of town. Another objective is to increase the modal share of sustainable, active modes by increasing the number of pedestrians and cyclists.

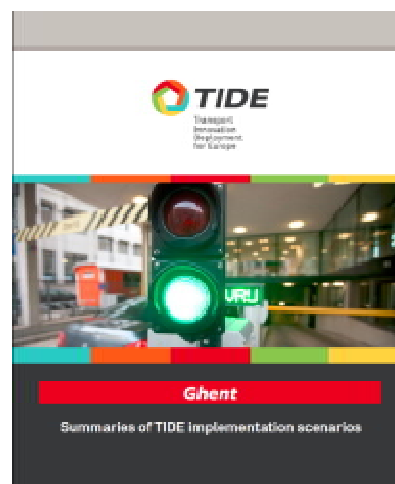
There is currently a mix of pedestrian spaces and narrow streets dedicated mainly to cars within the city centre. This area is going to become an access controlled area for private vehicles, which will lead to increased public space for pedestrians, cyclists, service and emergency vehicles, residents, and freight distribution. A camera system is used to enforce the access to the area. Decreased speed limits will further help to ensure a peaceful coexistence of pedestrians, cyclists and drivers.



It is estimated that the access control area and the improved walking and cycling facilities reduced 6,000 daily journeys by private car. This led to a reduction in the modal share of private cars from 29% today to 24% in 2020. The access control measure had a significant impact on travel choices: 53% more pedestrian trips in the city centre and 38% more pedestrian trips in the whole city, 5 times more cyclists in the city centre and 3 times more in the whole city, and 25% more public transport trips. Also, motorist flow has sharply decreased (83% fewer entering the city centre despite an increase of 1% in the access to the city). * Data collection in February 2012 and October 2014.

Champion City – Ghent (Measure 1.2)

Ghent is a city and a municipality located in the Flemish region of Belgium. It is the third largest city of Belgium (240,000 inhabitants). This lively medieval city has a strong commitment to keep and enhance a high quality of life for all of its citizens. Ghent is an important economic and cultural centre, which is expressed



in the large number of schools of higher education and the university with 60,000 students. A pattern with narrow streets and canals still exist within the medieval core of the city. In the 19th century, due to industrialisation, several very densely populated neighbourhoods arose outside the ramparts of the old city.

The Innovative measure

Sustainable mobility has been a top priority for Ghent for several decades and in 1997 the city agreed on their first mobility plan. Currently the city is developing a new SUMP and a new parking strategy was supported by TIDE. The new strategy includes an enlargement of the pedestrian areas, allowing more space for pedestrians and cyclists. A substantial number of parking spaces in central Ghent will be taken away. Another part of the new strategy deals with new parking zones as well as new parking charges.

The Parking Plan in Ghent was approved in November 2014. The new zones and pricing levels are well in line with the overall vision of Ghent to shift towards more sustainable transport modes for the whole population of Ghent. The parking plan will be included in the new SUMP. In the process of developing the new SUMP and parking strategy, Ghent has performed a benchmark to look at other cities in Europe. This has been an inspiration to solutions adapted in other cities, as well as evidence that the parking charges in Ghent are very low compared to other cities in Belgium and Europe.

Also, Ghent has performed an analysis of the current parking supply and demand in order to develop a strategy of new parking zones and parking charges. During the implementation of the measure, the following steps were taken:

- Participation: stakeholders discussed the new parking pricing strategy
- Approval: political approval of the parking plan, including the new parking strategy
- Refine parking zones: definition of boundaries of the different zones and identification of the location for ticket machines

The following actions will be taken in the future:

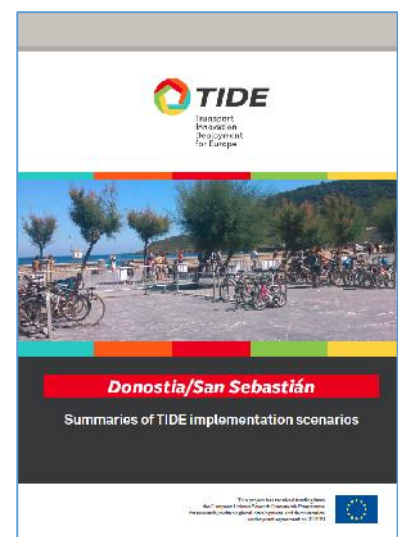
- Selection of supplier for the new ticket machines (end of September 2015). As from March 2016 the new machines will be put on street, all machines and new parking rates installed in 6 months' time.
- Evaluation 6 months after the implementation. A scanning car will be rented to gather data.
- Adjustment of parking rates if needed.

Non-motorised modes

Cluster Leading City – Donostia / San Sebastian (Measures 2.1 and 2.2)

Donostia/San Sebastián is located in the Basque Country in the north of Spain, 20 km from the French border. The city is the capital of Gipuzkoa province, has 185,000 inhabitants and is the centre of a metropolitan area of 435,000. Donostia/San Sebastián overlooks the sea with 3 beaches and a small port, and is surrounded by mountains. This topography clearly divides the city into low, flat areas and hilly areas. The main public transport services and pedestrian and cyclist facilities are located in the low, flat areas of the city. 50% of the population lives in the flat areas and the other half lives in the hilly areas. The main economic activities are trade and tourism.

The Innovative measure



Within the TIDE project's non-motorised transport cluster, Donostia/San Sebastián has been working specifically on two innovative secure bicycle parking schemes, both of which take advantage of existing infrastructure to keep the costs low, and both of which have realistic plans for cost recovery and ongoing sustainability and growth. In addition, the city is extending its already very people friendly city centre by converting a former busy peri-urban road into a people-friendly street including wide sidewalks and cycle lanes. All three of the measures are progressing well in their implementation.

Donostia's vision within TIDE is to reduce the use of cars and achieve significant impacts in the fields of energy, transport, and environmental sustainability by increasing the number of walking and cycling trips. Donostia/San Sebastián will use its TIDE measures to increase the use of the bicycle as a mode of transport by increasing the security of bicycle parking and developing a bicycle parking strategy.

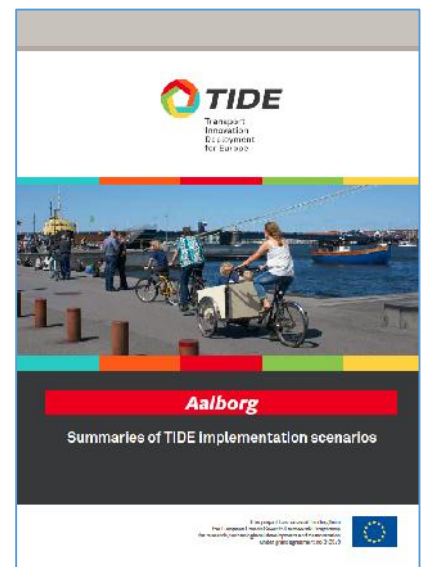
Champion City – Aalborg (Measure 1.3)

Aalborg is located on the Limfjord in the North Jutland region of Denmark and is the region's economic, cultural and educational centre. It is the fourth largest city in Denmark, with 120,000 inhabitants and a municipal population of 200,000. Since the late 1990s, Aalborg has undergone a perceptible change, transforming former industrial areas into culture and knowledge institutions, offices and residential dwellings. Aalborg has been working on making the city cycle friendly for many years and already has a good share of cyclists and a strong culture of cycling for transportation. However, an ongoing challenge is that car dependence remains high, with an increasing number of cars in the inner city.

The Innovative measure

Within the TIDE project's non-motorised transport cluster, Aalborg, Denmark is a Champion City that has been working specifically on the integration of its existing "standard" cycle network with a more recently established series of premium commuter routes for faster trips by bicycle over slightly longer distances to major commuter destinations. A total of five premium commuter cycling routes have been developed, partly financed by the state. As part of the city's Cycling Action Plan and its Cycling City Aalborg project, Aalborg has analysed connections between the newer premium commuter routes and the existing standard route network in order to make the connections smooth and to facilitate safe and fast commuting by bike over longer distances. The measure is progressing well in its implementation.

The implementation scenario includes solutions which draw on experience from Danish and international leading cities, including improved signage, priority at traffic lights, a series of green lights to allow cyclists to set their speed to meet green traffic lights, bike boxes at intersections, increased visibility of bike lanes (using blue paint), right turning slip lanes to allow cyclists to avoid red lights, speed reduction for cars next to bike lanes, restriction of left turns for cars and more separated cycling streets. Much of the focus is placed on optimising the intersections between the standard routes and the premium commuter routes for safety and efficiency. To this end, the city of Aalborg studied the intersections in question and developed a toolbox of tools to address the particular contexts. Some of the tools include, for example, creating physical separation between bicycles and cars at some locations, changing the timing of traffic lights, road markings and signage and the creation of more physical space for cyclists.



Champion City – Craiova (Measure 1.1)

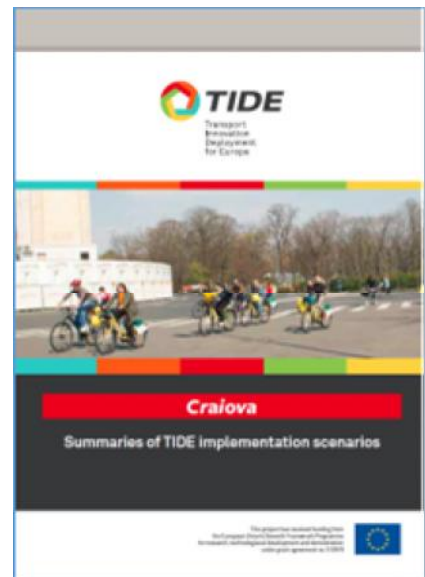
Craiova is located in the Oltenia Region of southwest Romania on the east bank of the Jiu River. It is the fifth largest city in Romania, with a population of 269,506 (2011) and an area of 81.4 km². Craiova is a city in transition both socially and economically with many factories closing or reducing activities and people looking for work in new fields. New schools and new university faculties are appearing. The city has only recently begun to invest in updating its ageing transport infrastructure. It is also one of seven urban areas in Romania, designated as “growth poles”, which are focussing on urban spatial planning to promote economic development.

The Innovative measure

Within TIDE’s non-motorised transport cluster, Craiova is a Champion City that has been working specifically on a bicycle parking scheme which takes advantage of ongoing revitalisation and road reconstruction work in the city. As part of the city’s sustainable urban mobility strategy, the municipality of Craiova plans to use this tailored implementation scenario to integrate the bicycle parking schemes into its local transport policy. The city is also working on integrating bicycle paths into ongoing urban road reconstruction. This, in turn, has helped to keep the costs of implementation low, meaning the city can finance it without any large extra expense. The implementation is progressing well.

A range of factors should be taken into account when considering the long-term life of cycle parking. In most cases, this should be looked at in a larger context. Several points to consider include:

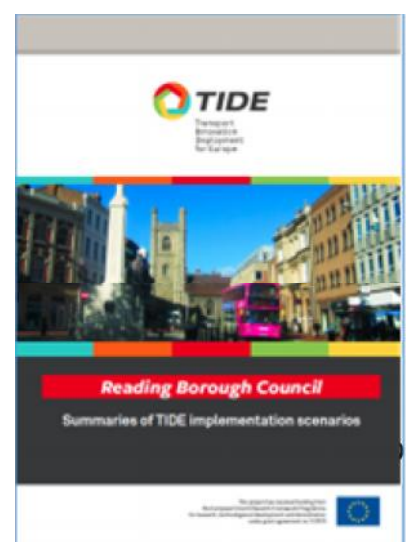
- Cycle parking alone will not increase the number of cyclists. The investment in parking should be seen as part of a package of measures to encourage more cycling. These should include cycle lanes, promotion, education and enforcement (e.g. keeping cars out of cycle lanes).
- Even the most secure cycle parking needs to be policed. Cycle theft is often a low priority for the police. They need to be engaged to prevent cycle theft.
- Cycling as a mode of transport needs to be promoted at all political levels on an ongoing basis. Developing or updating the city’s SUMP is a good opportunity to include and promote cycling infrastructure of all kinds to reach broader sustainability goals.
- For cities starting from a low level in terms of cycling infrastructure and number of cyclists, regular counting of moving cyclists would be beneficial to assess trends. This can take the form of either (ideally) ongoing automated counters at key locations or manual counts done on a regular basis.



Advanced network and traffic management to support traveller information

Cluster Leading City – Reading (Measures 3.1 and 3.2)

Reading is a large town in the south of England which is located in the Thames Valley approximately 40 miles to the west of London. It has a borough population of approximately 155,000 (2011), and a larger urban area population of 370,000 (2011). Reading is a university town, and a major retail centre; it also houses the UK headquarters of a number of global companies, especially in the technology sector. Reading is well connected to the strategic



transport network, with strategic rail access on the mainline out of London, and is bounded on its southern side by the M4 motorway.

The Innovative measure

Multi-modal traveller information for road transport is generated from a wide range of data sources including those related to: Congestion, car park occupancy, incidents, roadworks, CCTV images, variable message sign messages and real time public transport information. The provision of open access data allows any third party to freely use such data to provide traveller information services for a variety of user groups. Open data involves management and manipulation of the various data sources in order to provide information to the open access server that is relevant to third party applications and web developers. This approach enables the private sector to deliver more and better travel information addressing the needs of different groups of people. This, in turn, allows travellers to make more informed decisions and should encourage the choice of more sustainable modes of travel.

The open data service has been implemented successfully in Reading and traveller information apps are being developed. The main lessons learned are:

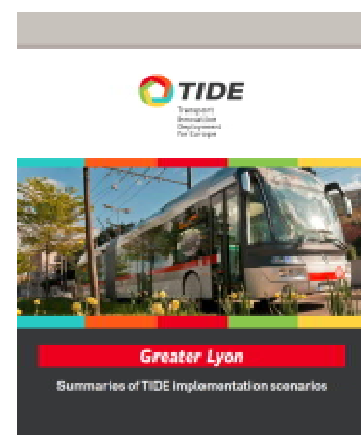
- The cost of open data provision is marginal when compared to the overall cost of the real time systems which provide the data (e.g. iBus).
- It is a good idea to make app developers sign up to a series of terms and conditions to access the data feeds. This helps to ensure that the data is used in a timely and appropriate fashion.
- • The potential risk of the data being used in a negative way with regards to the open data has not occurred to date.
- • Engaging with the local developer market to determine interest and the type of data to be released is a consideration in determining whether open data should be supplied.
- • Where there is no strong developer market, limited funding from the authority, such as through a competition or challenge funding, could be provided to 'pump prime' the market in a more cost effective way than by providing the apps centrally.
- • The quality and reliability of the data needs to be maintained to win the trust of the users and the app developers for long term success of using open access data for developing traveller information apps.

Champion City – Greater Lyon (Measure 3.2)

Greater Lyon has a population of 1.4 million. Every day, 220,000 private cars enter Greater Lyon (around 2 million daily trips are made by car) and certain public transport lines are saturated while covering longer distances due to urban sprawl. In this context, the development of sustainable solutions is now an urgent issue for Lyon. To address the issue, public, private and academic stakeholders in Lyon are contributing their expertise within the Optimod'Lyon project which is using information as the strategic lever to change behaviours and optimise network management.

The Innovative measure

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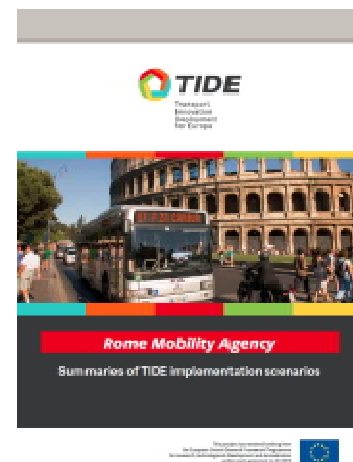
Champion City – Rome (Measure 3.1)

Rome is the capital and largest city in Italy, covering a municipal area of 1,285 km² (one of the largest municipal areas in Europe). The resident population of Rome is around 2.8 million, although the estimated number of city users is around 4 million, due to the presence of national and international institutions, including the inner presence of the Vatican State, and the relationships with the hinterland.

Rome's economy is primarily based on services that are mainly located in the centre of the city; tourism is also very relevant as around 23 million tourists visit Rome each year.

The Innovative measure

Rome's vision is to publish a relevant set of public and private transport data in an open format to encourage and support the development of new services and applications thus providing an added value to customers, city users and tourists. The possibility to improve the outreach of the information will support the most efficient use of the mobility infrastructures and services. The long-term aim is also to allow people to contribute to the mobility data, that once validated could enrich the knowledge of the mobility system, thus creating a virtuous loop of data provision → usage → feedback → improved data provision. These data will be collected using voluntary feedback from users (e.g. a user may report a service disruption event, a car accident, etc.); and also by analysing automatically collected data, such as users' GPS tracks, request patterns, etc.



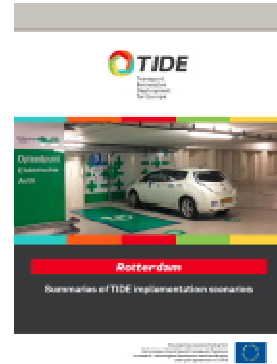
Rome created an “open-data portal” where it is possible to publish most of the mobility data gathered, analysed, processed and produced by the “Mobility Centre”. This allows developers to build upon them an added value for both operators and end users, thus widening the outreach of information broadcasting. The implementation of an open data server in Rome is justified on the following grounds:

- Open access data is already included in the municipal Strategic Plan for Sustainable Mobility and is relevant to one of the main objectives of the SUMP - “improvement of the use of ICT and accessibility to public and private mobility information services”. The development of “infomobility” services is planned within the “shortterm” actions list of the SUMP.
- Open data requirements are now compulsory by law. Thus, the implementation of an open access server for traveller information has already been justified.
- The recent publication of the open data portal has attracted an average of 50M requests per month to the real time API. In addition, more than 30 apps developed by third parties demonstrate huge demand for traffic data and support the open data measure.
- This open data measure provides a platform to disseminate traffic data from various ITS applications that Rome has implemented in recent years. This is compatible with Rome's ITS plan and supports efficient travel in Rome.

Electromobility

Cluster Leading City – Rotterdam (Measures 4.1 and 4.2)

Rotterdam is the second largest city in the Netherlands and has one of the largest ports in the world. In the province of South Holland, Rotterdam is located in the west of the Netherlands and the south of the Randstad megalopolis. The population of the city as of January 1, 2014 was 618,261. The population of the greater Rotterdam area, called “Rotterdam-Rijnmond”, is approximately 1.3 million people. As Rotterdam is located at the heart of a massive rail, road, air and inland waterway distribution network extending throughout Europe, it has grown into a major international commercial centre.



The Innovative measure

Rotterdam is implementing two measures through TIDE: (1) “clean city logistics”, (2) “financing schemes for charging infrastructure”. This implementation scenario will mainly focus on financing schemes for charging infrastructure. With the measure “clean city logistics”, Rotterdam focuses on the integration of electric vehicles in commercial delivery fleets. Within “financing schemes for charging infrastructure”, Rotterdam builds charging points for electric vehicles in the city and is testing financing schemes to develop business cases for a citywide integrated charging infrastructure.

Rotterdam Electric focusses on two measures: 1. stimulating innovations such as clean city logistics and 2. building charging infrastructure for electric vehicles.

Clean City logistics:

In the context of locally clean, virtually silent and efficient EVs, the city of Rotterdam is carrying out a pilot project together with Heineken, in which the company will replace a diesel truck (18-tons GVW) with a full-electric truck. The truck is used for distribution within the inner-city area of Rotterdam. The city administration is stimulating local freight operators to purchase full electric heavy duty trucks. The pilot showcases how the challenges and barriers can be overcome when operating a custom made full-electric heavy duty truck(s). The city of Rotterdam subsidises the additional costs needed to implement electric transport. In return, Rotterdam receives data and reports on the experiences and reduction of emissions. Within the project, the 18-ton electric truck is used to analyse the economic and ecological potential of an electric vehicle in daily delivery operations. Key activities are:

- Facilitating a business case for e-trucks
- Privileges (procurement)
- Privileges (traffic related)
- Enlargement of the environmental zone
- Scrapping Scheme for old diesel vehicles (will be operational by January 2016)

Financing schemes for charging infrastructure:

Rotterdam has introduced charging stations that promote the usage of electric vehicles. The city of Rotterdam is following a demand-driven approach to building charging points throughout the city which considers a charging ladder policy:

- Step 1: Charging points on private property
- Step 2: Charging points in public parking garages
- Step 3: Charging points on the street

Companies, organisations and owners of an electric vehicle parked on private property can apply for a grant towards the purchase of the equipment for an electric charging station. As of July 2015, 1,344 subsidised charging points were built up in Rotterdam.

Champion City – Barcelona (Measure 4.1)

Barcelona is the capital city of Catalonia and Spain’s second biggest city in terms of inhabitants. 1.6 million inhabitants live in Barcelona and 3.2 million inhabitants live within Barcelona metropolitan area. Barcelona is a metropolis with a strategic commercial port, a railway corridor of major European interest and important architectural heritage. In 2012, Barcelona’s Urban Mobility Plan was reviewed and redefined for the period 2013- 2018, in order to rigorously diagnose the state of the art, raise future goal setting, establish measures to achieve

The Innovative measure

Barcelona has introduced a concept called eDUM (electric distribución urbano mercadería). The concept aims to transform ordinary parking zones into exclusive parking zones for electric delivery vehicles called “yellow zones” throughout the city. Logistic companies based in Barcelona can park their electric vehicles up to 30 minutes for free at the designated parking place while recharging their vehicle. To secure the proper usage of the yellow parking zones, on-site sensor fraud-monitoring is in place.

Barcelona transformed ordinary parking zones in its city centre into “yellow zones” for electric delivery vehicles. These yellow parking zones can be reserved up to four hours in advance by logistic companies, using electric vehicles for inner-city goods deliveries. As of September 2015, seven ordinary parking zones have already been transformed into yellow parking zones which are dedicated for electric delivery vehicles only. This innovative measure will be carried out in consecutive steps within city areas which offer the greatest opportunities to transform ordinary parking places into yellow zones. These parking spaces can be reserved for up to four hours through an IT platform using a mobile phone application (ApparkB). Considering legal issues – that parking spaces can only be used by electric vehicles if charging equipment is installed on-site – most of the yellow zones also have charging infrastructure (Type-2 plug or Schuko). In case electric logistics vehicles have to recharge during the (un-)loading process, a fee-based usage of the charging equipment on-site can be done.



Champion City – Tampere (Measure 4.2)

The city centre of Tampere is surrounded by lakes and ridge scenery, sited on an isthmus between the lakes Pyhäjärvi and Näsijärvi. Tampere is the third largest city in Finland and the largest inland centre in the Nordic countries. Currently there are over 220,000 inhabitants in Tampere, and close to half a million inhabitants in Tampere Region, which comprises Tampere and its neighbouring municipalities. Tampere is one of the three most rapidly developing regions in Finland. In 2010 and 2012, the City of Tampere came first in an image survey comparing the largest cities in Finland. It was also the most attractive city among Finns who plan on moving. Tampere is a centre of leading edge technology, research, education, culture, sports and business.

The Innovative measure

Tampere is well-known for its innovative approach in many fields of business. In terms of mobility and its innovations, Tampere has been on the leading edge in Finland over the years. Since 2012 Tampere has provided an innovation, experimentation, and development environment called ITS



Factory that enables the public sector and businesses to cooperate in order to develop innovative solutions for transport and mobility. In addition to ITS innovations, Tampere has recognised the potential for electric vehicles to address some of its increasing traffic-related problems, such as pollution, noise and increasing transportation costs. The city aims to finance tens of public charging stations in the coming years to support eMobility.

Tampere will introduce several city-owned public charging stations to promote the usage of EVs and plans to provide free charging for the users for a limited time. Typically the main challenge for the installation of (semi-)public charging stations is the establishment of sustainable business and financing models, since the revenue from the electric power does not usually cover the cost of installation. However, since the city will invest in the charging devices in Tampere, the operator has a better chance to make the business profitable. This will be realised once the city's incentives are removed in the future. With the support of TIDE and a strong innovative community, Tampere will create an implementation scenario for a financing scheme for charging stations with the highest potential for the years after the free charging incentive. The main parking operator, Finnpark, and energy supplier Tampereen Sähkölaitos (both owned by the city) have been active in the eMobility sector, i.e. with special payment methods of charging already in use, but the actions should be strategically planned – and unified as well to make the system user-friendly.

Public Transport Organisation

Cluster Leading City – Budapest (Measures 5.1 and 5.2)

Budapest is the capital city of Hungary and is its economic and political centre, being the largest metropolitan area in Central Eastern Europe. Budapest has 1.7 million inhabitants and is the seventh largest city in the European Union. It is considered a financial hub in Central Europe with a developed service sector. Budapest is the TIDE cluster leading city for the thematic cluster “Public transport organisation”. Budapest (represented by BKK Centre for Budapest Transport, hereafter referred to as BKK) became a member of TIDE as it is a leading city in Central Eastern Europe in the implementation of an integrated transport authority that manages different modes and facilitates the implementation of sustainable mobility.

The Innovative measure

BKK developed two innovative measures in TIDE. One is Creation of public transport management bodies for metropolitan areas, and the other is Marketing research for optimising public transport. This implementation scenario focuses on how an SUMP can facilitate the regional integration of public transport, and how transportation modelling will foster the integrated use of marketing research tools for optimising public transport. The implementation of these Cluster 5 measures in Budapest focuses on:

- the development of BMT, the SUMP of Budapest and its public consultation processes,
- the elaboration of the Macroscopic Transport Model (MTM),
- how the SUMP will lead up to regional integration of public transport,
- how MTM will foster the integrated use of marketing research tools for optimising public transport.

BKK started to develop its first SUMP in 2013, and the final version is expected to be approved by the Municipality of Budapest in 2015. Once the BMT will be approved by the Municipality, it will be a clear commitment of Budapest to regional integration of transport.



Champion City – Bologna (Measure 5.3)

The municipality of Bologna has 370,000 inhabitants and area of 140 km². The city is the de facto capital of the region and an important transport node with an airport and railway interchange. The municipality is the main owner of SRM having 2/3 of its total shares. The metropolitan area has 970,000 inhabitants and area of 3,700 km². It consists of 56 local councils that also may be involved in public transport management by co-financing extra services, but are not SRM's co-owners. The SRM is co-owned and serves two local authorities: the Municipality of Bologna and the Metropolitan Area of Bologna, both located in the Emilia Romagna Region of northern Italy.

The Innovative measure

SRM developed innovative measures in TIDE which is Marketing research for optimising public transport. Although marketing research is a solution which has traditionally been used in the business sector, it offers a lot of possibilities when developed in public transport. Marketing research includes the collection of data and information about the market and its environment and enterprises. It could be used for evaluation and improvement purposes and for predicting future changes in users' transport behaviour. Carrying out such research on a regular basis can also be seen as an effective way of recognising future and current market needs. Marketing research is also used to recognise the volume and structure of demand and incomes for public transport when different partners (cities) are involved in organisation and financing of public transport services (a metropolitan dimension). Marketing research data provides a valuable supporting tool for transport modelling and for sustainable urban mobility planning.

The DegustiBus web app was developed from January to July 2014. The first step of the implementation was the choice of the technical expert and software developer (December 2013). In the first phase the preliminary project was prepared. It was agreed to adopt the solution of the web app, because:

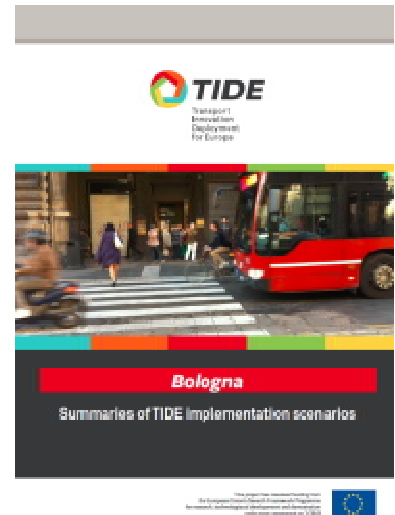
- it was the most flexible solution
- it would be available for smartphone, tablet and desktop with no need of duplicating it
- it was possible to update it easily and for all platforms at the same time
- it was possible to replicate it in other cities/area, with no need for further development

Champion City – Vilnius (Measure 5.1)

Vilnius is the capital city of Lithuania, a country that proclaimed its independence from the Soviet Union in 1990 and since 2004 has been a member of the European Union. With its population of more than 500,000 inhabitants, it is also Lithuania's biggest city, located in its eastern part. Vilnius is surrounded by the Vilnius Region Municipality, having also ca. 800,000 inhabitants. In total, the Vilnius metropolis covers over 1/3 of the country's population (3 million citizens).

The Innovative measure

In order to create a public transport system that will relieve congestion in Vilnius' streets an integrated public transport system needs to be created that covers the entire metropolitan area. This system should be characterised by joint planning, ticketing and



information. The integrated

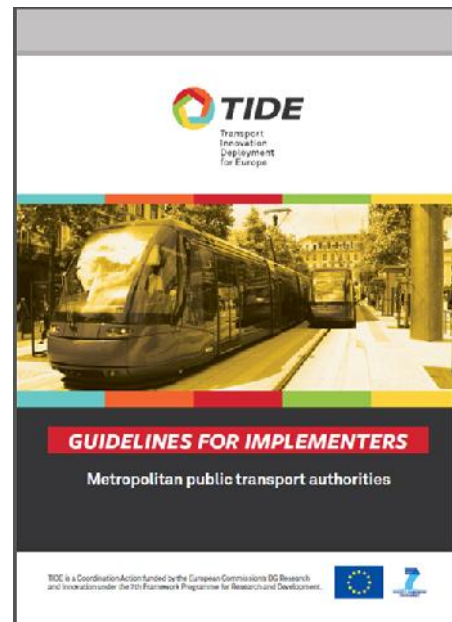
planning of public transport within a metropolis should be the responsibility of specialised bodies which focus on strengthening both integration and competition within transport systems in order to provide maximum value for money and to balance spatial and environmental issues. Such metropolitan public transport management bodies should respect different needs and financial possibilities of member communities.

The goal for the TIDE project is to prepare a proposal of a legal and organisational framework for the implementation of a metropolitan public transport authority. The transformation towards such an authority must include:

- Re-organization of the approach to public transport in the area around Vilnius, as the current system is insufficient and does not meet the expectations of new customers;
- Acquisition of proper financing from public bodies other than Vilnius City Authority (such as the surrounding Vilnius Region Municipality and the national Ministry of Transport);
- Creation of a proper Metropolitan Transport Management Authority.

1.3.5 Guidelines for implementers

Effective Implementation Guidelines for 10 out of the 15 Innovative Measures were developed. As the development of such Guidelines will require substantial resources, two out of the three Innovative Concepts per cluster will be selected, i.e. the ones for which the participating cities indicated the highest priority. The Implementation Guidelines address the full implementation process (preparation, actual implementation, operation) as well as costs and benefits, stakeholders etc. The Guidelines are illustrated by good practice examples and provide links to available planning tools. The guidelines target practitioners in charge of implementing transport and mobility solutions in cities. At the end of the project a final review of the Implementation Guidelines by the thematic support partners took place, ensuring that new insights were reflected in the final version of the document.



Topics highlighted in all guidelines for implementers include:

Measure description

- Characteristics
- Key-benefits
- Check list
- Benefits and costs
- Users and stakeholders
- Impact assessment

From Plan to reality

- Preparation
- Implementation
- Operation

Further information and contacts

The following Guidelines for Implementers are available:

Cluster 1: New pricing measures

- Measure 1.1: Road user charging in urban areas
- Measure 1.2: Parking charge policies

Cluster 2: Non-Motorised Transport

- Measure 2.1: Innovative bicycle parking schemes

- Measure 2.2: Creating people friendly streets and public spaces
- Cluster 3: Advanced network and traffic management to support traveller information
 - Measure 3.1: Open access server for applications-based traveller information
 - Measure 3.3: Advanced priority systems for public transport
- Cluster 4: Electric mobility
 - Measure 4.1: Clean City Logistics
 - Measure 4.2: Financing schemes for Charging Stations
- Cluster 5: Organisation of public transport
 - Measure 5.1: Creation of public transport management bodies for metropolitan areas
 - Measure 5.3: Marketing research as optimisation tool in public transport

1.3.6 Towards EU level deployment

TIDE provided **policy recommendations** at a European and national level on how to foster deployment of urban transport innovation. Particularly targeted actors were the European Institutions, European and national associations, industry and the non-governmental sector. The key question is how to create favourable conditions for the take-up of innovative urban transport solutions.

The recommendations are given on a general level and in greater detail in relation to the five pre-specified thematic TIDE clusters.

These recommendations and general conclusions were based on the experiences of European experts within the five specified thematic areas (the TIDE clusters) and generalists on urban transport innovation. They also take into account common and recurring challenges faced by TIDE- cities in their own experiences of implementation of innovative measures. The workshops were held in Brussels in February 2015.

Furthermore, the general conclusions are also based on a survey on "how to improve research and deployment on urban transport innovation", distributed in December/January 2014/2015 to a total of 97 European professionals with expertise in at least one of the five thematic clusters. 22 experts, representing consultancies, research institutes, local and national governments, universities, and industry answered the survey. The respondents were of eleven different nationalities.



The recommendations itself are quite substantial, here is an example of the type of recommendations, i.c. the context conditions for innovation deployment:

- Political acceptance and support for an innovative measure can be a good driver since political power often is connected to many of the other frameworks that are important to break barriers and enhance deployment.
- Public acceptance of an innovative measure is important, both in itself and in its close connection to political support.
- Access to financial support is another condition that can help in driving deployment. Financial support usually comes from politically initiated development funds or through direct political initiatives.
- Clarity in political intentions and decisions creates a context in which actors and interest groups to a greater extent can risk investments in uncertain terrains. Coherency in legal frameworks on all relevant levels is essential for some innovative measures. For others it is more a factor in enhancing the spread and deployment of the innovative measure.
- Access to 'best practice' studies and guidelines directed at a specific innovative measure can enhance deployment of that innovation.

- Established standards, on a national or European level, can expand the market for an innovation and provide security for investment.
- Relationships between stakeholders on “the same level” who share knowledge and experiences and/or cooperate to enhance deployment.
- Relationships between stakeholders on “different levels”, and, perhaps, with different interests, to increase the collective understanding of the innovative measure from their respective point of view, in order to enhance deployment through the right adjustments.
- Access to and protection of relevant data is a key condition for some of the innovative measures. Protection of relevant data can be seen both as an obstacle and a necessity in order to make it accessible.
- Viable business models are crucial for deployment of many innovative measures.

TIDE also provided research recommendations, connected to the five thematic clusters. These outlines research topics, actions and formats that need to be addressed in future research programmes on the European level. Current research gaps on urban transport innovation are identified, targeting the European Commission in particular, but also other stakeholders (e.g. technology platforms such as ERTRAC and ERRAC, large research organisations, industry) that are active in transport and mobility research on the European level.

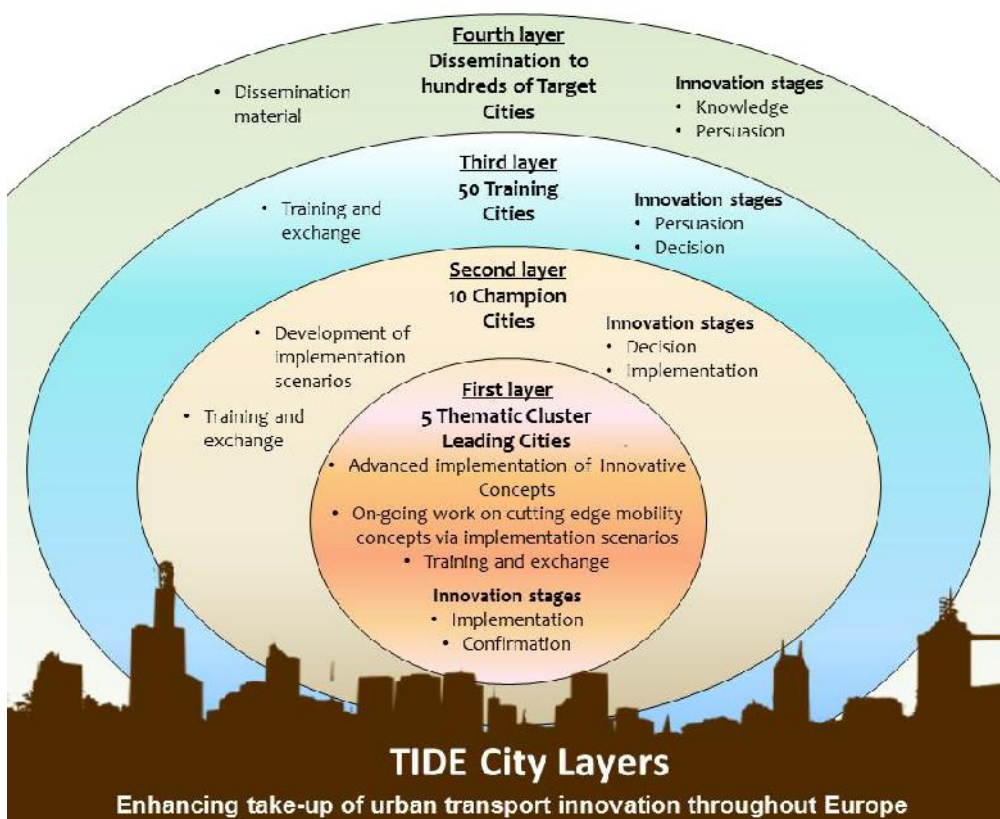
The recommendations are based on the thoughts and perceptions among experts and practitioners involved in this field of research, collected by means of a survey as well as a workshop. The results are therefore to be regarded as qualitative in their nature.

1.4. Potential impact, dissemination activities and exploitation of results

The TIDE project – as Coordination Action under FP7 – had a very clear dissemination and exploitation profile.

1.4.1 Building the TIDE community

TIDE has worked with 4 city layers. This approach has ensured the ability to address cities and regions at different stages of the innovation decision process; to enable to work on different levels of intensity from practical on-site support to dissemination of information; and to achieve a broad coverage across Europe with a high number of cities involved.



The **first layer**, the Cluster Leading Cities have been mentioned above, and don't need further explanation.

The **second layer** represents ten champion cities, selected to develop concrete and tailored implementation scenarios which will help them integrate one of the TIDE innovative measures in their local transport policy. Success factors and barriers, including managerial issues, stakeholder consultation, financing, timeframe and an action plan were addressed.

The selected champion cities each received a budget of 19.000 €, through a subcontracting agreement that was concluded with project coordinator Polis. An additional travel budget for external experts was made available through the TIDE consortium.

The budget allowed the champion city to:

- contribute to the development of an implementation scenario in cooperation with the TIDE consortium for integrating one innovative measure into its local transport policy,
- involve stakeholders in Local Innovation Forums,

- participate in training and exchange activities, organised by TIDE,
- organise a national dissemination event in its country, in cooperation with Polis and EUROCITIES.

The selection of the ten Champion Cities was carried out by means of an open call. The selection process of the TIDE champion cities consisted of the following elements:

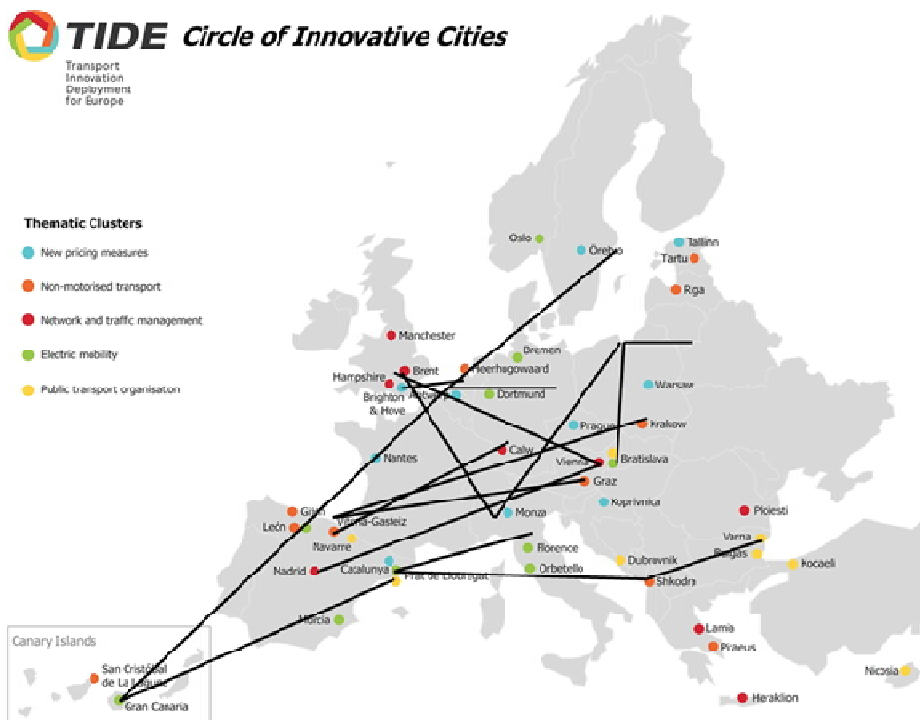
- Draft terms of reference
- Information of city representatives on the selection procedure, at the TIDE Perugia workshop, 28 November 2012
- Launch and promote the call for champion cities
- Establish the TIDE city helpdesk, answering questions from applicants
- Collection of applications
- Eligibility check by Polis and EUROCITIES
- Evaluation and assessment by cluster support partners
- Decision by TIDE Advisory Committee and European Commission
- Contact and reconfirmation of the TIDE champion cities.

In total 62 applications were received.

TIDE also addressed a **third layer** group of 50 training cities. These cities were invited to participate in TIDE training and exchange activities. The champion cities call applicants were asked to indicate their interest to join the 'Circle of Innovative Cities'. This group of roughly 50 cities was recruited through an open call and a simple application form. Each city expressed an interest in at least one of TIDE's cluster topics. These cities, called TIDE's Circle of Innovative Cities, were invited to take part in three face-to-face workshops over the course of roughly 2 years as well as in TIDE's online courses and webinars. They also received up-to-date information on TIDE activities as well as information on other learning opportunities within their cluster topics.

Community building also took place online, with an active LinkedIn-group, a twitter account, and flickr presence.

Several interactions took place within the community. This map provides a good overview of the intensity of exchange.



1.4.2 Training and Exchange

Training and exchange was addressed in the project's work package 4. The objectives were to:

- Train 50 European cities via dedicated events on the successful implementation of the Innovative Concepts covered in TIDE.
- Ensure an intense exchange between the TIDE cities within each thematic cluster.
- Make available webinars of the trainings and the training proceedings to reach a wider circle of cities.
- Encourage discussion on highly innovative cutting-edge solutions among the most advanced cities in a thematic area.
- Provide a discussion platform on the integration potential of single innovative concepts within Sustainable Urban Mobility Plans at a dedicated event for all cities.
- Make available training experience via e-learning courses to a wider circle of cities.

Several successful **events** took place

1. Workshop 1: Innovative ideas and how to take advantage of them (D4.1, November 2013)

The first TIDE workshop in Stuttgart brought together the Circle of Innovative Cities with TIDE's Champion and Partner cities. Part of the time was spent in plenary looking at the TIDE methodology and activities. The rest was spent in five topic-specific discussion groups and site visits related to the TIDE cluster topics. A total of 80 people attended the workshop from 24 countries. The plenary presentations were made available online afterward (see Webinar 1 below) and the presentations and highlights from the smaller groups were made available on the TIDE website. The evaluations indicated an overall satisfaction level of 4.4 out of a possible 5.

2. Workshop 2 (cluster-specific series): Making innovation reality: how to get started – a site visit and workshop (D4.3, May-July 2014)

The second workshop was carried out in the form of five smaller topic-specific workshops and site visits in relevant TIDE cities. Each featured both internal and external experts and created opportunities for exchange among the participants. Highlights from all workshops were summarised in an overall report. Participation ranged from 9 for public transport organisation to 16 for electric mobility. Overall participant evaluations ranged from 3.6/5 (electric mobility) to 5/5 (network and traffic management). The workshops took place in: Milan (pricing measures), Donostia/San Sebastian (non-motorised transport), Reading (network and traffic management), Rotterdam (electric mobility) and Gdynia (public transport organisation).

3. Workshop 3: Integrating innovative mobility measures into an SUMP (D4.7, February 2015)




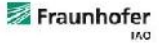






The third workshop brought together TIDE's Partner, Champion and Circle Cities in Brussels. Three external speakers were invited to present particular measures they had introduced. These activities were placed in the context of SUMP in smaller group discussions through focussed questions looking at participation, institutional cooperation, measure selection/policy packages, implementation/ financing and evaluation. There were a total of 50 participants from 24 countries. The average overall satisfaction level with the workshop was 4.5 of a possible 5 points.

4. Workshop for advanced cities: Cutting-edge solutions for advanced cities (D4.6, May 2015)

In partnership with the EU SOLUTIONS project and in conjunction with the International Transport Forum in Leipzig in May 2015, TIDE hosted a workshop intended for advanced cities to exchange about the challenges of forerunner cities. Topics included creating the context for innovation and daring to transform transportation for the good of everyone. Smaller groups focussed on electric mobility, non-motorised transport and public transport/finance. 20 participants attended from 9 countries.

Online learning opportunities were created in the project.

1. Ten 4-week moderated online courses were offered between May and August 2014 addressing the five TIDE clusters as well as the two cross-cutting themes of SUMP and impact analysis. The following courses were offered:

Course topic	Created by	Course topic	Created by
<i>Cycle parking: Why? Where? How much? What kind?</i>	 RUPPRECHT CONSULT FORSCHUNG & BERATUNG GMBH	<i>Analysing the impact of new mobility measures in your city</i>	 Wuppertal Institut für Klima, Umwelt, Energie GmbH
<i>Using market research to help optimise your public transport system</i>	 UNIVERSYTET GDAŃSKI	<i>How to encourage more electric mobility in the logistics sector</i>	 Fraunhofer IAO
<i>Charging infrastructure for electric vehicles: What kind? Where? How?</i>	 Fraunhofer IAO	<i>How to successfully implement a new parking pricing measure</i>	 WSP
<i>Creating a metropolitan public transport authority</i>	 UNIVERSYTET GDAŃSKI	<i>Open data: how can cities make the best use of it?</i>	 UNIVERSITY OF Southampton
<i>Road user charging: how it works, the challenges and the benefits</i>	 WSP	<i>Integrating new transport measures into your city's SUMP</i>	 RUPPRECHT CONSULT FORSCHUNG & BERATUNG GMBH

84 individuals from 40 cities in 23 countries participated in the courses. An average of 11 people took part in each course; a total of 113 person-courses were completed (some people participated in more than one courses). The main feedback received was:

- helped me to think about my local context more clearly
- I appreciated sharing experiences with colleagues
- good to see examples from other places

2. Webinars (D4.2 and D4.4) Two webinars in two different formats were provided.

- In February 2014, a series of four edited recordings of the presentations from the first TIDE workshop in Stuttgart (November 2013) was uploaded to YouTube and promoted through TIDE networks. The various presentations had between 39 and 153 hits on YouTube. No online viewer feedback was possible.
- In December 2014, a one-hour “brown-bag” lunchtime webinar entitled “innovative mobility measures and sustainable urban mobility planning” was carried out. 31 people from 17 countries participated in the webinar “live”. The webinar was subsequently uploaded onto YouTube, where it has had 102 hits. Participant feedback on the content showed an average satisfaction level of 4.5 of a possible 5 points. The main points of feedback in the open-ended questions were appreciation for the question and answer session (x5) and for the main presentation of the structure of the SUMP process (x4).

1.4.3 TIDE Publications

TIDE has published the following brochures:

- TIDE Urban Mobility Toolbox
- TIDE Transferability Handbook
- TIDE Impact assessment handbook
- TIDE guidelines for implementers for ten innovative urban mobility measures
- TIDE high level deployment scenarios
- TIDE Short Implementation Scenarios
- The TIDE Study Tour Catalogue

The Study Tour Catalogue is a collection of best practices in order to inspire and foster the take-up of new urban transport solutions and technologies across Europe. Practitioners, local authorities and mobility experts will have — through this catalogue — the possibility to request a study visit or exchange in order to learn from implemented policies in Europe and beyond. The featured cities have been selected by urban transport experts within the scope of TIDE. The Study Tour Catalogue presents cities with innovative solutions from each thematic area. Three additional categories are included.

- Innovation cities, showcasing innovation across clusters and in a range of measures
- SUMP, cities which have developed and implemented sustainable urban mobility plans
- International cities, showcasing innovative transport measures outside Europe.

Each of the city profiles includes relevant web links and contact information to help plan and organize study tours.

1.4.4 TIDE events

TIDE has been able to create maximum visibility by means of events.

National events

The champion cities acted as disseminators towards other cities in their countries. To this end, EURO CITIES and Polis have – in close cooperation with the champion cities – organised one-day take-up seminars at national level that targeted other cities in the same country. This country-based approach helped to overcome the language barriers often encountered in European projects and capitalised on the perceived interest of cities to learn from their peers. The national seminars incorporated the following elements:

- Focus on TIDE in the champion city: present the implementation scenario for the chosen innovative measure, give the audience further insights in the implementation process and conditions for the chosen measure;
- Site visit: illustrate both the opportunities and the challenges the champion city will be facing in case of implementing the innovative measure;
- Political exchange on TIDE innovative measures in relation to their contribution to local challenges, feasibility, and necessary framework conditions etc.
- Involvement of experts and practitioners from other European cities that have implemented the measure to foster exchange.

The following national events took place:

- Finland, Tampere – 30 October 2014
- The Netherlands, Rotterdam, 8 October 2014

- Belgium, Brussels, with Gent – as part of VVSG Climate day, 7 May 2015
- Lithuania, Vilnius – 24 April 2015
- Hungary, BKK – 4 June 2015
- Spain, Barcelona, with Huesca, DSS, Barcelona: Spanish joint event in conjunction with TIDE final conference Barcelona – 14 September 2015
- Italy, Rome, with Bologna, Milano, Roma, Italian joint event - 21 September 2015

The TIDE Final Conference

Around 120 decision makers and transport technicians from local authorities interested in integrating innovations in their urban mobility policies, and professionals concerned by innovation in urban transport attended the Final Conference of the TIDE project (Transport Innovation Deployment for Europe) that took place in Barcelona on 15- 16 September.

The conference offered a unique opportunity for urban transport practitioners and policy makers from all over Europe to learn more about the project results, tools and recommendations through workshops around the five TIDE measures areas: new pricing measures, non-motorised transport, ITS, electro-mobility and public transport organization. Presentations were combined with site visits that gave a concrete illustration of how the different measures work in practice.

This event demonstrated that the work on mainstreaming innovative measures in urban mobility is an ongoing task, during the conference participants were introduced to new projects tackling topics linked to the five TIDE Clusters. The project is leaving a rich legacy including detailed methodologies on transferability and impact assessment of measures as well as concrete implementation scenarios.

The first day of the conference ended with the TIDE award ceremony that rewarded the city of Kocaeli (Turkey) in the Innovative Transport Project Category for its new public bike system and the London Borough of Ealing (UK) in the Innovative Transport City category for developing a Cycle Safety Shield for lorries enabling them to detect vulnerable road users and greatly diminishing any risk of collision. Both local authorities were rewarded for their courage to introduce innovative and daring measures to meet urban transport challenges in a sustainable and effective way.

Presence at external events

The Project has been present as speaker or exhibitor at all major urban mobility conferences in Europe during its duration. The full overview is presented in the Section 1.2. below.

1.4.5 TIDE Advisory Committee

The TIDE Advisory Committee of 6 experienced transport and mobility experts was established at the beginning of the project and has supported the project throughout its lifetime. The members were:

- **Tiago Farias**, EMEL Lisbon, Portugal: next to general urban transport expertise, particular expertise in the field of cluster 1- new pricing measures;

- **Daniel Sauter**, Urban Mobility Research, Switzerland: next to general urban transport expertise, particular expertise in the field of cluster 2 - non-motorised transport;
- **Alexio Picco**, Circle Consulting, Italy: next to general urban transport expertise, particular expertise in the field of cluster 3 - advanced traffic management for traveller information systems;
- **Gereon Meyer**, VDI-VDE, Germany: next to general urban transport expertise, particular expertise in the field of cluster 4 - electric mobility;
- **Paul Riley**, European Investment Bank: next to general urban transport expertise, particular expertise in the field of cluster 5 organization - public transport organisation;
- **Arzu Tekir**, EMBARQ Turkey, the international network for sustainable transport of the World Resources Institute, to bring in the international dimension.

1.4.6 Impact on local and European urban mobility practice

Throughout the project, TIDE has contributed to

a) a favourable climate for innovation and increased acceptance and take-up of urban transport innovation

- Focusing on the needs of cities and regions

Cities and regions in Europe were the 'customers' of TIDE and the project has responded to their needs and requirements. It is cities that have selected the Innovative Measures with the highest priority. All project activities took into account the decision innovation phase (from knowledge to confirmation) at which the cities and regions currently were. This enabled tailored and effective offers to the project's 'customers' via effective outreach measures that were oriented at the four layer city approach presented earlier.

- Providing evidence on the benefits of innovation

TIDE provided analyses of costs and benefits of the impact of 15 Innovative Concepts. The project helped to remove uncertainties for take-up candidates highlighting the benefits of new solutions, providing clear proof points, and indicating the added value compared to traditional measures. The benefits of urban transport innovation in the five thematic areas were also highlighted in 10 Implementation Guidelines and the Study Tour Catalogue.

- Creating intensive exchange in a network of experts and take-up cities

TIDE created a platform of experts and take-up candidates for urban transport innovation. Numerous expert workshops, exchange events and trainings as well as 'Local Innovation Forums' encouraged exchange on the five thematic clusters. Tools for online exchange were added as a further option for discussion.

- Providing a detailed analysis of transferable good practice

The project based the transferability analysis for the Innovative Concepts on existing good practices. By analysing successful cases and by extracting the success factors and barriers for take-up, TIDE provided valuable input to cities that need a structured approach to check whether an Innovative measure fits their local context. This also contributed to the development of implementation scenarios for the 15 TIDE cities.

- Making available methodologies that are easy to apply by practitioners

TIDE made available a range of tools and handbooks that enabled practitioners to easily apply methodologies for transferability and impact analysis themselves. This includes a handbook for transferability analysis and cost-benefit analysis as well as practical and focused Implementation Guidelines. Trainings and e-learning courses offered opportunities

to learn more about the practical application. These activities enabled practitioners to better assess the potential risks and benefits of implementing Innovative Concepts in their own city or region.

b) Address challenges in a collaborative and integrated way and shorten implementation path

- Encouraging integrated planning approaches

The TIDE consortium is convinced that only an integrated approach to urban transport planning can generate sustainable solutions. The concept of Sustainable Urban Mobility Plans was therefore a horizontal issue throughout the project that encouraged discussion on how to integrate urban transport innovation in the wider context of urban policies..

- Making implementation experience easily accessible for take-up candidates

TIDE shortened the implementation path by extracting the relevant information from successful take-up examples and by providing take-up candidates with tailored events, guidance and outreach products. This enabled cities and regions interested in implementing a TIDE Innovative Concept to avoid mistakes and to take quicker decisions.

c) Cost-efficient solutions, non-motorised transport and road safety, access for all, optimised network performance, energy efficiency and reduced emissions

- Promoting more cost-efficient mobility policies in economically challenging times

The TIDE Consortium has put a focus on the topic of cost-benefit analysis. TIDE has raised awareness for the importance of cost-efficient solutions, but also provided some evidence and advice on a topic, which is frequently neglected.

- Increasing use of non-motorised transport and road safety

TIDE's thematic cluster two selected a range of Innovative Concepts that provide a high potential to increase walking and cycling in European Cities. The cluster theme focused on providing convenient, safe and enjoyable measures that enable and encourage non-motorised transport and provide public space for social interaction. Road safety was a key element, e.g. by providing safer cycling routes, by training older people or by providing guidance on the most convenient and safest routes to take. The city of Donostia San-Sebastián provided a showcase for measure implementation.

- Fostering more inclusive urban transport systems and access for all

A range of innovative Measures with a strong element to foster more inclusive transport have been included (e.g. creation of people friendly streets – showcase Donostia San-Sebastián, user friendly human machine interfaces for traveller information – showcase Reading, market research to optimise public transport). Access for all was an underlying issue throughout all project activities.

- Optimising performance of the urban mobility network

Thematic cluster one provided insights on how intelligent pricing measures can contribute to a more efficient use of urban infrastructure. Cycling and walking (cluster two) are by nature highly efficient modes for short distances with little space requirements. Advanced ITS solutions (cluster three) as network information and guidance can help to make best use of available capacities (showcase Reading), high quality passenger information can help to take the quickest routes. Interconnected electric mobility helped to use the most efficient transport mode for each situation (cluster four). Cluster five offered a range of Innovative Concepts to optimise the organisation and performance of public transport (showcase Budapest).

- Increasing energy efficiency and reducing CO2 pollutant emissions and noise

All TIDE thematic clusters provided big potential in this field. Modal shift towards walking, cycling and public transport increases the energy efficiency and reduces emissions

(showcase Donostia San-Sebastián). Pricing measures contribute to more rational use of the private automobile (showcase Milan). Modern traffic management can reduce congestion and emission hot spots (showcase Reading). Electric vehicles can have a high impact if broadly deployed (showcase Rotterdam). The TIDE activities provided an analysis of the environmental impact of the Innovative Concepts (CBA and Impact Analysis).

d) European Level Added Value

TIDE contributed to European policy objectives

- The European Commission's **Transport White Paper** ('Roadmap to a Single European Transport Areas. Towards a competitive and resource efficient transport system') expresses the goal to reach climate neutral city logistics by 2030. Also pricing as a measure is mentioned in the TWP. TIDE covered nine of the actions suggested in the **Action Plan on Urban Mobility** and offered an effective channel to contribute to fields as take-up of SUMP, access for all, travel information, low and zero emission vehicles, pricing / funding, urban freight and ITS.
- The TIDE activities in cluster 3 'Network and traffic management to support traveller information' contributed to the objectives of the **ITS directive and the ITS action plan**.
- By promoting modal shift and energy efficient means of urban transport, TIDE contributed to the EC'S ambitious **climate change objectives by 2020** (i.e. 20% less greenhouse gases, 20% better energy efficiency, 20% share of renewables) And the Clean Power for Transport package.

1.5 Website and relevant contact details

www.tide-innovation.eu

Contact Persons:

Coordination and Dissemination

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2. Use and dissemination of foreground

Section A – Dissemination Measures

A.1. Promotion Tools

- **Project identity and graphic charter**

A project identity and graphic charter were developed in month 2 (November 2012) to establish a common and recognisable TIDE brand, which will be used for all TIDE communications, both on a European and local level.

- **Project leaflet**

A project leaflet was produced to be the project's business card towards the outside world, presenting the TIDE objectives, partnership, activities and expected results at a glance. (EN)

- **Electronic newsletters**

Twice yearly electronic newsletters (so 6 in total) were issued to ensure a regular flow of information to local authorities, those working in the field of transport and innovation, other identified target groups and all interested stakeholders.

- **PowerPoint presentation**

A standard TIDE PowerPoint presentation has been developed that can be used for promotion and awareness raising of the project at relevant events across Europe.

- **Roll-up Banner**

Six roll-up banners were produced, one for the project in general and another five for each of the thematic clusters. These will be used for promoting the project at events and form a coherent identity with other communication elements in the TIDE brand.

A. 2. Online Media

- **Website**

The dedicated TIDE project website is the project's main gateway to the outside world, providing information on TIDE objectives, partners, methodologies, results, publications, news and success stories. It features the 15 TIDE cities as an inspiration for other cities across Europe. The website is in English but offers a Google translate option.

The website also includes links to dedicated TIDE pages on social media, i.e. LinkedIn, Twitter, YouTube, and Flickr

- **TIDE video clips**

The website will host short video clips, also available on YouTube.

- *Social and digital media: TIDE was present at twitter, FLICKR, YouTube and LinkedIn*

A.3. TIDE publications

The following publications have been delivered:

- *TIDE handbook on transferability of urban transport measures*
- *TIDE handbook on Impact assessment*
- *TIDE handbook*
- *Innovative concepts overview brochure (POL, EN, D, FR, IT, ES, Bask)*
- *Implementation guidelines*
- *Short version implementation scenarios*
- *Study tour catalogue*
- *High Level deployment scenarios*

A.4. TIDE events

- *National take-up seminars*
 - *Finland, Tampere – 30 October 2014*
 - *The Netherlands, Rotterdam, 8 October 2014*
 - *Belgium, Brussels, with Gent – as part of VVSG Climate day, 7 May 2015*
 - *Lithuania, Vilnius – 24 April 2014*
 - *Hungary, BKK – 4 June 2015*
 - *Spain, Barcelona, with Huesca, DSS, Barcelona: Spanish joint event in conjunction with TIDE final conference Barcelona – 14 September 2015*
 - *Italy, Rome, with Bologna, Milano, Roma, Italian joint event - 21 September 2015*
- *Training workshops*
 - 1. Workshop 1: Innovative ideas and how to take advantage of them (November 2013)*
 - 2. Workshop 2 (cluster-specific series): Making innovation reality: how to get started – a site visit and workshop (May-July 2014)*
 - 3. Workshop 3: Integrating innovative mobility measures into an SUMP (February 2015)*
 - 4. Workshop for advanced cities: Cutting-edge solutions for advanced cities (May 2015)*
- *Final Conference*

15-16 November, Barcelona, reaching 120 urban transport professionals.
- *Presence at external events*

TIDE has been present at a large number of key-European conferences and events.

- Polis conference in Perugia on 29-30 November 2012
- Free Public Transport conference on 26 October 2012 in Tallinn
- Eurotowns transport working group on 23 January 2013 in Kortrijk
- ERRIN transport working group meetings in Brussels
- Bike Friendly Cities project meeting on 7 February in Zeeland.
- TIDE held a stand at the Smart Cities Stakeholder Platform annual conference in Budapest 5-6 June 2013.
- TIDE was presented with a session at the Velo-City 2013 conference
- Ecocity 2013 in Nantes
- Walk21 2013 in Munich.
- A session on cost-benefit analysis was organized at the Polis Annual Conference 2013 in Brussels.
- A joint TIDE and SOLUTIONS session took place at the TRA2014 in Paris.
- TIDE was also presented at the EPA-Polis workshop in Dublin (September 2013),
- at the DIFU Fahrrad Academy,
- at the EUROCITIES Mobility Forum in Stockholm, and at the EUROCITIES open door day,
- at the European Mobility Week workshops (25-03-2014, Brussels),
- at the EV Key Market Players Workshop Meeting organised by Renault (11-02-2014, Brussels),
- and at the EUROCITIES Mobility Forum (18-03-2014, Birmingham).
- TIDE was presented at the ECOMM2014 in Florence
- Further take-up of TIDE results was assured by receiving the second place for the 2014 EPOMM best policy transfer award.
- TIDE held a stand at the 2015 ECOMM in Utrecht, where it won the best policy transfer award.
- TIDE was also presented at the ITS Europe 2014 conference in Helsinki, where it was awarded with the 'best paper' award. This paper was also presented at the ITS Europe best paper webinar on the 11th of July 2014.
- On the 9th of July 2014, TIDE was presented at the Smart Cities, Smart Europe conference in Brussels.
- TIDE had a stand at the CIVITAS Forum in Casablanca on 24-26 September 2014 and was represented with two presentations at this event.
- BKK presented TIDE on Future on Transport Forum in Bucharest on 12th November 2014.
- BKK presented TIDE on Mobility Conference in Pécs on 7th November 2014.
- TIDE had a stand at the 2015 Polis conference in Brussels, 19-20 November.

In addition, please provide a list of all scientific (peer reviewed) publications relating to the foreground of the project, starting with the most important ones, in the table below.

TEMPLATE A: LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS, STARTING WITH THE MOST IMPORTANT ONES

NO.	Title	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Year of publication	Relevant pages	Permanent identifiers ³ (if available)	Is/Will open access ⁴ provided to this publication?
1	<i>"Bridging the implementation gap in urban transport measures through the SUMP process and integrated assessment"</i>	<i>Oliver Lah, WI</i>	<i>TRA2016</i>	<i>Under review"</i>	<i>ETRR</i>	<i>Brussels</i>	<i>2016</i>	<i>Tbc</i>		yes

³ A permanent identifier should be a persistent link to the published version (full text if open access or abstract if article is pay per view) or to the final manuscript accepted for publication (link to article in repository).

⁴ Open Access is defined as free of charge access for anyone via the internet. Please answer "yes" if the open access to the publication is already established and also if the embargo period for open access is not yet over but you intend to establish open access afterwards.

Section B (confidential)

This section is not applicable for the TIDE project.

The applications for patents, trademarks, registered designs, etc. shall be listed according to the template B1 provided hereafter.

The list should, specify at least one unique identifier e.g. European Patent application reference. For patent applications, only if applicable, contributions to standards should be specified.

TEMPLATE B1: LIST OF APPLICATIONS FOR PATENTS, TRADEMARKS, REGISTERED DESIGNS, ETC.			
Type of IP Rights: Patents, Trademarks, Registered designs, Utility models, etc.	Application reference(s) (e.g. EP123456)	Subject or title of application	Applicant (s) (as on the application)

Please complete the table hereafter:

TEMPLATE B2: OVERVIEW TABLE WITH EXPLOITABLE FOREGROUND					
Exploitable Foreground (description)	Exploitable product(s) or measure(s)	Sector(s) of application	Timetable, commercial use	Patents or other IPR exploitation (licences)	Owner & Other Beneficiary(s) involved
1. New superconductive Nb-Ti alloy	MRI equipment	1. Medical 2. Industrial inspection	2008 2010	A materials patent is planned for 2006	Beneficiary X (owner) Beneficiary Y, Beneficiary Z, Poss. licensing to equipment manuf. ABC

In addition to the table, please provide a text to explain the exploitable foreground, in particular:

- Its purpose
- How the foreground might be exploited, when and by whom
- IPR exploitable measures taken or intended
- Further research necessary, if any
- Potential/expected impact (quantify where possible)

4.1 Report on societal implications

Replies to the following questions will assist the European Commission to obtain statistics and indicators on societal and socio-economic issues addressed by projects. The questions are arranged in a number of key themes. As well as producing certain statistics, the replies will also help identify those projects that have shown a real engagement with wider societal issues, and thereby identify interesting approaches to these issues and best practices. The replies for individual projects will not be made public.

A General Information *(completed automatically when Grant Agreement number is entered.*

Grant Agreement Number:	N° 313979
Title of Project:	TIDE – Transport Innovation Deployment for Europe
Name and Title of Coordinator:	Karen Vancluysen, Polis Secretary General

B Ethics	
1. Did you have ethicists or others with specific experience of ethical issues involved in the project?	<input type="radio"/> No
2. Please indicate whether your project involved any of the following issues (tick box) :	YES
INFORMED CONSENT	
• Did the project involve children?	No
• Did the project involve patients or persons not able to give consent?	NO
• Did the project involve adult healthy volunteers?	NO
• Did the project involve Human Genetic Material?	NO
• Did the project involve Human biological samples?	NO
• Did the project involve Human data collection?	NO
RESEARCH ON HUMAN EMBRYO/FOETUS	
• Did the project involve Human Embryos?	NO
• Did the project involve Human Foetal Tissue / Cells?	NO
• Did the project involve Human Embryonic Stem Cells?	NO
PRIVACY	
• Did the project involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)	No
• Did the project involve tracking the location or observation of people?	NO
RESEARCH ON ANIMALS	
• Did the project involve research on animals?	NO
• Were those animals transgenic small laboratory animals?	NO
• Were those animals transgenic farm animals?	NO
• Were those animals cloning farm animals?	NO
• Were those animals non-human primates?	NO
RESEARCH INVOLVING DEVELOPING COUNTRIES	
• Use of local resources (genetic, animal, plant etc)	NO
• Benefit to local community (capacity building ie access to healthcare, education etc)	NO
DUAL USE	
• Research having potential military / terrorist application	NO

C Workforce Statistics

3 Workforce statistics for the project: Please indicate in the table below the number of people who worked on the project (on a headcount basis).

Type of Position	Number of Women	Number of Men
Scientific Coordinator	9	16
Work package leader	10	16
Experienced researcher (i.e. PhD holders)		1
PhD Students		
Other	5	5

4 How many additional researchers (in companies and universities) were recruited specifically for this project? 0

Of which, indicate the number of men:

Of which, indicate the number of women:

D Gender Aspects																				
5	Did you carry out specific Gender Equality Actions under the project ?	<input type="radio"/> No																		
6	Which of the following actions did you carry out and how effective were they?																			
		<table border="0"> <thead> <tr> <th></th> <th style="text-align: center;">Not at all effective</th> <th style="text-align: center;">Very effective</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> Design and implement an equal opportunity policy</td> <td style="text-align: center;">○ ○ ○ ○ ○</td> <td style="text-align: center;">○ ○ ○ ○ ○</td> </tr> <tr> <td><input type="checkbox"/> Set targets to achieve a gender balance in the workforce</td> <td style="text-align: center;">○ ○ ○ ○ ○</td> <td style="text-align: center;">○ ○ ○ ○ ○</td> </tr> <tr> <td><input type="checkbox"/> Organise conferences and workshops on gender</td> <td style="text-align: center;">○ ○ ○ ○ ○</td> <td style="text-align: center;">○ ○ ○ ○ ○</td> </tr> <tr> <td><input type="checkbox"/> Actions to improve work-life balance</td> <td style="text-align: center;">○ ○ ○ ○ ○</td> <td style="text-align: center;">○ ○ ○ ○ ○</td> </tr> <tr> <td><input type="radio"/> Other:</td> <td colspan="2" style="border: 1px solid black; height: 20px;"></td> </tr> </tbody> </table>		Not at all effective	Very effective	<input type="checkbox"/> Design and implement an equal opportunity policy	○ ○ ○ ○ ○	○ ○ ○ ○ ○	<input type="checkbox"/> Set targets to achieve a gender balance in the workforce	○ ○ ○ ○ ○	○ ○ ○ ○ ○	<input type="checkbox"/> Organise conferences and workshops on gender	○ ○ ○ ○ ○	○ ○ ○ ○ ○	<input type="checkbox"/> Actions to improve work-life balance	○ ○ ○ ○ ○	○ ○ ○ ○ ○	<input type="radio"/> Other:		
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<input type="checkbox"/> Actions to improve work-life balance	○ ○ ○ ○ ○	○ ○ ○ ○ ○																		
<input type="radio"/> Other:																				
7	Was there a gender dimension associated with the research content – i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed?	<input type="radio"/> No <div style="border: 1px solid black; width: 150px; height: 20px; margin-left: 100px;"></div>																		
E Synergies with Science Education																				
8	Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)?	<input type="radio"/> Yes- please specify The TIDE award was aimed at awarding innovative take-up within our primary target group: urban transport professionals.																		
9	Did the project generate any science education material (e.g. kits, websites, explanatory booklets, DVDs)?	<input type="radio"/> Yes- please specify Guidelines for implementers, webinars, video clips, handbooks.																		
F Interdisciplinarity																				
10	Which disciplines (see list below) are involved in your project?	<input type="radio"/> Main discipline ⁵ : 5.4, 2.1, 5.3 <input type="radio"/> Associated discipline ⁵ : <input type="radio"/> Associated discipline ⁵ :																		
G Engaging with Civil society and policy makers																				
11a	Did your project engage with societal actors beyond the research community? (if 'No', go to Question 14)	<input type="radio"/> Yes																		
11b	If yes, did you engage with citizens (citizens' panels / juries) or organised civil society (NGOs, patients' groups etc.)?	<input type="radio"/> Yes- in determining what research should be performed																		

⁵ Insert number from list below (Frascati Manual)

<input type="radio"/> Yes - in implementing the research <input type="radio"/> Yes, in communicating /disseminating / using the results of the project						
11c In doing so, did your project involve actors whose role is mainly to organise the dialogue with citizens and organised civil society (e.g. professional mediator; communication company, science museums)?	<input type="radio"/> Yes					
12 Did you engage with government / public bodies or policy makers (including international organisations)						
<input type="radio"/> Yes- in framing the research agenda <input type="radio"/> Yes - in implementing the research agenda <input type="radio"/> Yes, in communicating /disseminating / using the results of the project						
13a Will the project generate outputs (expertise or scientific advice) which could be used by policy makers? <input type="radio"/> Yes – as a primary objective (please indicate areas below- multiple answers possible)						
13b If Yes, in which fields?						
	<table border="1"> <tr> <td></td> <td>Energy</td> <td></td> <td>Information Society Research and Innovation Transport</td> <td></td> </tr> </table>		Energy		Information Society Research and Innovation Transport	
	Energy		Information Society Research and Innovation Transport			
13c If Yes, at which level? <input type="radio"/> Local / regional levels <input type="radio"/> National level <input type="radio"/> European level						

H Use and dissemination			
14	How many Articles were published/accepted for publication in peer-reviewed journals?	0	
	To how many of these is open access⁶ provided?	0	
	How many of these are published in open access journals?	0	
	How many of these are published in open repositories?	0	
	To how many of these is open access not provided?	0	
	Please check all applicable reasons for not providing open access:		
	<input type="checkbox"/> publisher's licensing agreement would not permit publishing in a repository <input type="checkbox"/> no suitable repository available <input type="checkbox"/> no suitable open access journal available <input type="checkbox"/> no funds available to publish in an open access journal <input type="checkbox"/> lack of time and resources <input type="checkbox"/> lack of information on open access <input type="checkbox"/> other:		
15	How many new patent applications ('priority filings') have been made? (<i>"Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant</i>).	0	
16	Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).	Trademark	0
		Registered design	0
		Other	0
17	How many spin-off companies were created / are planned as a direct result of the project?		0
		<i>Indicate the approximate number of additional jobs in these companies:</i>	0
18	Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:		
	<input type="checkbox"/> Difficult to estimate / not possible to quantify	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> None of the above / not relevant to the project <input type="checkbox"/>	
19	For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (FTE = one person working fulltime for a year) jobs:	<i>Indicate figure:</i>	
	<i>Difficult to estimate / not possible to quantify</i>	<input type="checkbox"/>	

⁶ Open Access is defined as free of charge access for anyone via the internet.

I Media and Communication to the general public			
20	As part of the project, were any of the beneficiaries professionals in communication or media relations? <input type="radio"/> Yes		
21	As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public? <input type="radio"/> Yes		
22	Which of the following have been used to communicate information about your project to the general public, or have resulted from your project? <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Press Release <input type="checkbox"/> TV coverage / report <input type="checkbox"/> Radio coverage / report <input type="checkbox"/> Brochures /posters / flyers <input type="checkbox"/> DVD /Film /Multimedia </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Coverage in specialist press <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Website for the general public / internet <input type="checkbox"/> Event targeting general public (festival, conference, exhibition, science café) </td> </tr> </table>	<input type="checkbox"/> Press Release <input type="checkbox"/> TV coverage / report <input type="checkbox"/> Radio coverage / report <input type="checkbox"/> Brochures /posters / flyers <input type="checkbox"/> DVD /Film /Multimedia	<input type="checkbox"/> Coverage in specialist press <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Website for the general public / internet <input type="checkbox"/> Event targeting general public (festival, conference, exhibition, science café)
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23	In which languages are the information products for the general public produced? <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Other language(s) </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> English </td> </tr> </table>	<input type="checkbox"/> Other language(s)	<input type="checkbox"/> English
<input type="checkbox"/> Other language(s)	<input type="checkbox"/> English		

Question F-10: Classification of Scientific Disciplines according to the Frascati Manual 2002 (Proposed Standard Practice for Surveys on Research and Experimental Development, OECD 2002):

FIELDS OF SCIENCE AND TECHNOLOGY

1. NATURAL SCIENCES

- 1.1 Mathematics and computer sciences [mathematics and other allied fields: computer sciences and other allied subjects (software development only; hardware development should be classified in the engineering fields)]
- 1.2 Physical sciences (astronomy and space sciences, physics and other allied subjects)
- 1.3 Chemical sciences (chemistry, other allied subjects)
- 1.4 Earth and related environmental sciences (geology, geophysics, mineralogy, physical geography and other geosciences, meteorology and other atmospheric sciences including climatic research, oceanography, vulcanology, palaeoecology, other allied sciences)
- 1.5 Biological sciences (biology, botany, bacteriology, microbiology, zoology, entomology, genetics, biochemistry, biophysics, other allied sciences, excluding clinical and veterinary sciences)

2. ENGINEERING AND TECHNOLOGY

- 2.1 Civil engineering (architecture engineering, building science and engineering, construction engineering, municipal and structural engineering and other allied subjects)
- 2.2 Electrical engineering, electronics [electrical engineering, electronics, communication engineering and systems, computer engineering (hardware only) and other allied subjects]
- 2.3. Other engineering sciences (such as chemical, aeronautical and space, mechanical, metallurgical and materials engineering, and their specialised subdivisions; forest products; applied sciences such as geodesy, industrial chemistry, etc.; the science and technology of

food production; specialised technologies of interdisciplinary fields, e.g. systems analysis, metallurgy, mining, textile technology and other applied subjects)

3. MEDICAL SCIENCES

- 3.1 Basic medicine (anatomy, cytology, physiology, genetics, pharmacy, pharmacology, toxicology, immunology and immunohaematology, clinical chemistry, clinical microbiology, pathology)
- 3.2 Clinical medicine (anaesthesiology, paediatrics, obstetrics and gynaecology, internal medicine, surgery, dentistry, neurology, psychiatry, radiology, therapeutics, otorhinolaryngology, ophthalmology)
- 3.3 Health sciences (public health services, social medicine, hygiene, nursing, epidemiology)

4. AGRICULTURAL SCIENCES

- 4.1 Agriculture, forestry, fisheries and allied sciences (agronomy, animal husbandry, fisheries, forestry, horticulture, other allied subjects)
- 4.2 Veterinary medicine

5. SOCIAL SCIENCES

- 5.1 Psychology
- 5.2 Economics
- 5.3 Educational sciences (education and training and other allied subjects)
- 5.4 Other social sciences [anthropology (social and cultural) and ethnology, demography, geography (human, economic and social), town and country planning, management, law, linguistics, political sciences, sociology, organisation and methods, miscellaneous social sciences and interdisciplinary, methodological and historical S1T activities relating to subjects in this group. Physical anthropology, physical geography and psychophysiology should normally be classified with the natural sciences].

6. HUMANITIES

- 6.1 History (history, prehistory and history, together with auxiliary historical disciplines such as archaeology, numismatics, palaeography, genealogy, etc.)
- 6.2 Languages and literature (ancient and modern)
- 6.3 Other humanities [philosophy (including the history of science and technology) arts, history of art, art criticism, painting, sculpture, musicology, dramatic art excluding artistic "research" of any kind, religion, theology, other fields and subjects pertaining to the humanities, methodological, historical and other S1T activities relating to the subjects in this group].