Demonstrating economic benefit from sustainable mobility choices - the EVIDENCE project

Funded by the Intelligent Energy Europe Programme of the European Union
This report has been developed within the European project, Evidence of the Proven Economic Benefits of Sustainable Transport Initiatives to Facilitate Effective Integration in Urban Mobility Plans (EVIDENCE), co-funded by the European Union and the following partners who have delivered the project: Arcadis (UK), Contemporary Transport (UK), INTERACTIONS Limited (IE), LUXMobility (LU), Urban Planning Institute of the Republic of Slovenia (SI), RHV Erasmus University Rotterdam (NL), TAEM Urbanistai (LT), University of the West of England (UK), Wuppertal Institut für Klima, Umwelt und Energie GmbH (DE)

For more information
European Platform on Sustainable Urban Mobility Plans
www.eltis.org/mobility-plans
E-mail: enquiries@mobilityplans.eu

European Commission
Directorate-General for Mobility and Transport
Unit C.1 - Clean transport & sustainable urban mobility
Rue Jean-André de Mot 28
B-1049 Brussels

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Contract: Funded through the Intelligent Energy Europe programme - Grant agreement IEE/13/549/ SI2.675162.
Title: Demonstrating economic benefit from sustainable mobility choices - The EVIDENCE project
Version: August 2017
Authors: Shergold, I. Parkhurst, G
Email: ian2.shergold@uwe.ac.uk Web: http://evidence-project.eu/
Contributors: Black, C.; McGeever, J.; Rudolph, F.; Streng, M
Layout: FGM-AMOR
Cover picture: Ian Shergold
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1. The EVIDENCE Project

Evidence of the Proven Economic Benefits of Sustainable Transport Initiatives to Facilitate Effective Integration in Urban Mobility Plans (EVIDENCE), brought together a pan-European team to examine the notion that such initiatives, do not compete with "traditional" transport infrastructure in terms of delivering economic benefit.

One consequence of this perception is that potentially fewer of these initiatives or interventions are being made in cities, and consequently the implementation of Sustainable Urban Mobility Plans (SUMP) is less effective. In response, EVIDENCE set out to address three objectives:

1. To demonstrate that sustainable mobility interventions can offer good value, and do not compare poorly in comparison to infrastructure schemes (such as new roads).
2. To evidence how investments in sustainable mobility can foster economic activity.
3. To provide greater confidence in more sustainable solutions, and facilitate the communication of their benefits in appropriate language to allow cities to engage successfully with funders.

To help achieve these objectives, EVIDENCE collected, sifted and reviewed almost one thousand items of source material for twenty-two categories of sustainable mobility intervention, and extensive economy-relevant evidence for around a third of these. It is notable that, in around half of the cases, these economic benefits focussed around reduced use of private cars, and the indirect benefits such a reduction created in terms of reduced road congestion for other travellers, particularly those continuing to use private cars.

Engagement

Armed with the ‘evidence’, the project has engaged directly with ‘new member states’ who joined the EU post 2004, to ensure that these countries in particular are able to benefit from this work when promoting SUMPs to their cities. Such engagement has identified that the eleven countries concerned are currently at different levels of knowledge, development, and implementation of SUMP, which has necessitated some tailoring of the dialogue with each of them (and their transport experts).

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1 Sustainable mobility is a term that describes access for people and goods when and where it is needed; using approaches and technologies that minimise negative environmental and social impacts. As such, it encompasses more than just the provision of less polluting, or more resource efficient modes of travel, and is the terminology used to describe the types of intervention considered through the rest of this document.
Some countries for example are already involved in established knowledge networks such as CIVITAS\(^2\) (Slovakia, Czech Republic, Hungary, Poland, and Slovenia and Croatia) or with Eltis\(^3\) (the European Commission’s urban mobility observatory), which proved helpful when looking to disseminate the EVIDENCE findings. Where countries had already established a development structure for SUMPs such as Lithuania (development guidelines and budget) and Romania (Growth Poles) there was also a greater opportunity to engage. In these cases, experts were well versed in knowledge about SUMPs and were involved in their national development.

It was notable though that each of the new member states that EVIDENCE focussed on still had the majority of their EU seven-year cohesion funding that was allocated for transport, being spent on infrastructure, with limited funds allocated to supporting or coordinated sustainable mobility interventions.

**Dissemination and training**

Engagement activities included visits to five ‘pilot cities’, workshops and round-table discussions with combinations of transport ministry representatives, transport planners and practitioners in each of the eleven new member states. EVIDENCE team members also participated in many mobility-related conferences (e.g. CIVITAS, POLIS and SUMP), as well as joining events staged by other mobility programmes (ENDURANCE, PROSPERITY etc.) as a way of contacting directly with policy makers and

\(^2\) http://civitas.eu/

\(^3\) http://www.eltis.org
practitioners. Physical outputs from EVIDENCE have been welcomed at city and national level – with the range of formats of the material providing a flexible set of resources to suit a wide range of needs,

These resources range from detailed reports on the evidence available to two-page information sheets and from classroom materials to a summary report and animations in over twenty European languages. Details of these materials and where to find them can be found in Section 10 of this report. The resources are helping to address the needs of a variety of different audiences; in particular, the two-page reviews have proven popular, not least for their ease in translation into a local language.

It is also apparent that the EVIDENCE resources are being deployed in a wide range of contexts, and via their availability on the project website (and the European Platform on Sustainable Urban Mobility Plans4) are more widely disseminated beyond those cities and states directly engaged in the project itself.

Ongoing use of the EVIDENCE training materials in education will help to ensure that the economic benefits of sustainable mobility interventions continue to be understood in the future, supporting the take-up of SUMP:s across Europe.

This document continues with discussion of:

- Existing urban mobility strategies and funding decisions: What are cities in Europe (particularly in the new member states) doing currently in respect of sustainable mobility and SUMP:s?. What influences their choices about which interventions to adopt? How are they funded?
- What has EVIDENCE done to respond to the findings about city engagement with the SUMP process?
- What does the evidence of sustainable mobility interventions tell us?
- What are the barriers to more sustainable mobility interventions?
- Engagement with cities and states, training and learning resources from EVIDENCE
- Lessons learnt during the EVIDENCE project
- Recommendations for those looking to deploy the evidence collated and evaluated by the project
- Further resources

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4 http://www.eltis.org/mobility-plans
In advance of reviewing the evidence that could support the increased deployment of sustainable mobility interventions, it was important to understand current approaches to determining urban mobility strategies. A key part of this understanding related to funding, and funding allocation.

2.1 Urban mobility planning

From direct engagement with cities, and through wider research into mobility planning in the new member states, EVIDENCE found the planning process to be driven by national budget plans. In some cases significant proportions of those national budgets coming from the EU, through country Cohesion Fund and European Regional Development Fund programmes, but being ‘ear-marked’ for the development of new road and other transport infrastructure.

However, urban mobility planning in many cases is about ‘fixing’ and improving what is already there, rather than about major new infrastructure investments. This is not to deny, though, that when major infrastructure investments are being made in urban areas, that there are significant opportunities simultaneously to enhance the sustainability of mobility, which are not always taken, such as providing attractive walking and cycling options in relation to that new infrastructure.

Due to the complexity, political context, and long timescales of urban mobility decisions, interaction with the EVIDENCE project alone was not likely to lead to immediate, recordable changes in approach.

However, some countries were already embarking on new ways of planning, which the project was able to observe and potentially reinforce. Some specific examples included:

- the ‘Growth Poles’ initiative in Romania;
- the production of SUMP guidelines linked to urban planning in Lithuania;
- the way in which a ‘critical mass’ movement of cyclists forced a rethink on urban planning in Hungary; and
- the innovative SUMP web platform development in Slovenia.

Identification of interventions

The deployment of more sustainable intervention is often linked to national policies (and more often than not, also linked to EU regulations and directives). These require action at city level to, for example, improve air quality, reduce congestion and ‘bottlenecks’, promote electric vehicles, compliment TEN-T projects, or improve road safety.

On top of these though, there are additional measures that are chosen to the extent to which mobility planning is an inclusive process. This means that schemes such as cycle infrastructure, pedestrianisation, travel planning, environmental zones and parking policies oriented towards demand management (rather than simply promoting car access) are becoming much more evident. However,
whilst EU policy regards sustainable mobility measures as an essential requirement, they are still often seen in many cities as additional to ‘traditional’ transport investments. Therefore, they are often reliant on funding through external EU programmes (such as the former EU-FP7, LIFE and IEE programmes, and the current H-2020, INTERREG programmes).

In interviews undertaken as part of the information-gathering activity of EVIDENCE, strong awareness of SUMPs and mobility management measures and schemes was identified, much of which came through involvement in EU projects, conferences, seminars, and training programmes. A strong current of opinion also pointed to a desire for change in mobility management planning. At the same time, younger professionals who might have been more exposed to the concepts of sustainable urban mobility planning in their more recent education (and possibly experience) were moving into the key decision-making positions within national ministries and city administrations. These latter trends provide much hope for the future of more sustainable solutions as part of the mobility response in the new member states.

### 2.2 Funding for sustainable mobility

As already indicated above, in the recently joined member states, much of the funding for projects related to or connected to SUMPs and/or mobility management flows from the EU through national ministries. However, SUMPs are not managed by the same type of ministry in each of the post-2004 member states that EVIDENCE engaged with during the project.

In some instances, there are several government ministries with responsibilities, which can make the planning, allocation, and any quantification of the effective spend of budgets difficult to measure. There is therefore a limit to how much EVIDENCE could directly impact national budgets for mobility, as spending budgets had already been largely decided based on national plans prior to the project starting.

However, local budgets at city level are seen to be more flexible and it was here where EVIDENCE was seen to have more potential to make a difference, through helping urban planners, local activists, decision makers, and members of the public to be more aware of the benefits of a broader and more inclusive form of urban mobility planning. City budgets operate on a shorter timescale - often planned and agreed year by year (albeit with some bigger strategic projects having a longer periods of financial commitment).
3. The role of appraisal

The approach to evaluating mobility interventions could also influence the choices made in cities. Traditional appraisal requires the collection of considerable quantities of data and the application of elaborate quantitative and/or qualitative methods. It also assumes the interventions will have a large and immediate impact, detectable against a background context of unrelated change. Thus, traditional appraisal is likely to be poorly suited for many sustainable mobility interventions, as they are often individually of a small-scale and local character, even if over time and space their total influence can be important.

**Issues with the current approach**

In considering how best to deploy the evidence of economic benefit found by EVIDENCE, it is necessary to think about how appraisal processes might influence decisions made by funders and by cities. These issues were explored in an early report from EVIDENCE\(^5\). This found that the mainstream appraisal tools commonly deployed in this context are those developed and previously mainly used to assess major transport projects, e.g. highway schemes, and as a consequence they suffer from the following shortcomings in respect of sustainable interventions:

1. The nature of Cost Benefit Analysis (CBA) means it tends to promote faster travel times and greater system capacity, aspects of mobility usually contrasted sharply with visions of sustainable mobility.
2. CBA has a focus on direct, monetisable effects, which will not capture all the economic (and other) benefits of SUMP measures.

Inappropriate application of a tool like CBA could systematically underestimate the benefits of sustainable mobility interventions, compared to the more readily quantifiable and monetisable traffic volume, traffic speed, and theoretical accessibility enhancements of new infrastructure capacity. In such cases, a proposed sustainable intervention might not receive funding, despite having greater relative benefits, solely because the specific Benefit-to-Cost Ratio (BCR) metric was unable to capture the non-monetisable benefits.

There are instances where funders may mandate appraisal via a CBA process, in which case the procedures need to be examined for their suitability and, if necessary, adjusted or supplemented with another process, if the more sustainable interventions are to be able to compete on a ‘level playing field’. However, in these situations, there is a risk that proponents of more sustainable interventions may seek to ‘play by the CBA rules’, but end up doing so in a way which lacks plausibility, as the CBA tool was not designed with these types of

\(^5\) How urban transport projects are appraised: current practice in the EU. ‘A common practice reader’. 2014
intervention as a target application. As a result, the credibility of both appraiser and scheme can be undermined – putting at risk the deployment of the intervention.

Whilst accepting these constraints, there are still some opportunities for CBA to be a successful route to evaluating, and progressing sustainable mobility interventions. The tool uses a ‘language’ familiar to many practitioners, and to some extent politicians and decision makers. Thus, its use is likely to be more appropriate for more traditional schemes that increase or reduce capacity on existing infrastructure (e.g. bicycle ‘highways’, or the introduction of bus lanes in congested urban areas). In such cases, CBA can be appropriate for the type of intervention, as it focusses on travel time differences, and hence a well-designed sustainable mobility intervention in the right location can be expected to perform well using the CBA economic efficiency criteria.

There are instances where successful implementations of more sustainable mobility policies have often followed decisions taken without formal economic appraisal – evidence of which can be found in the Measure Reviews undertaken by this project. Such interventions have included town centre pedestrianisation, traffic calming in residential areas, and the use of land-use planning to reduce car travel. Where policies and interventions have worked without appraisal it was often because political leaders had enough vision to ‘see beyond’ the results of processes oriented towards promoting traffic flow. Challenging the pro-traffic-flow ‘norm’ creates political space for the consideration of other kinds of evidence as valid, including the ability of an intervention to meet strategic objectives beyond the transport sector.

EVIDENCE has identified weaknesses with the use of traditional appraisal methodologies such as CBA in making the economic case for sustainable mobility interventions. In large part, this was because those processes do not capture the true socio-economic value of such interventions, either not reflecting longer-term outcomes, or because of the difficulty in ‘monetising’ social and environmental benefits. In addition, the SUMP process itself is seen to be less dependent on CBA-type appraisal, with its focus on packages of measures, and the realisation of ‘crucial qualitative outputs’.

**Looking to the future**

Two key messages emerge from EVIDENCE in respect of appraisal and evaluation going forward. Firstly, that CBA-style appraisal is not the only evidence of economic benefit. In the review process, the EVIDENCE team has accepted that the absence of a CBA did not mean that economic benefits were not found to be generated by a measure, and where a CBA was present, it was not automatically assumed to represent the actual net economic value. In other words, CBA evidence was just one form of economic information informing the reviews undertaken here.

The second theme that emerged was that improvements could be made to current appraisal approaches to better accommodate and support sustainable mobility interventions. These are discussed in Chapter 3 of the EVIDENCE Report, and in the EVIDENCE Method report that looks to better understand how economic benefit might be captured going forward. Suggestions include incorporating additional metrics (such as health outcomes for example), use of alternative evaluation approaches, and reform to existing methods where they are flawed. It is also apparent that in many instances improvements could be made in respect of data collection and in more appropriate identification of the scale and scope of the intervention being studied to ensure that all benefits are captured.

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7 How urban transport projects are appraised: current practice in the EU. ‘A common practice reader’. 2014
Addressing these issues will help those looking to generate the evidence to support more sustainable mobility interventions by providing a portfolio of tools and approaches (including CBA where appropriate) which will identify that there is real economic benefit available - as well as the equally important social and environmental outcomes that cities are looking for.
4. Looking for the evidence of economic benefit

The task of the EVIDENCE project team was to sift through the thousands of possibly relevant information sources on SUMP measures in order to narrow down to those sources that not only contained information about economic benefits, but were also of sufficient methodological quality to provide a reliable guide to likely outcomes in cities elsewhere. This objective was successfully achieved, although it required flexibility in approach and scope.

4.1 What to review
Sustainable mobility interventions come in many forms, for example, a new bus service, improved cycle parking, or changes to a road layout are all examples of such interventions. To effectively marshal the evidence relating to such a breadth of different actions means first categorising them into a manageable number of ‘measures’ for cities. EVIDENCE took as its starting point the top-level themes as used in the SUMP concept, and then grouped related interventions into twenty-two measures (see Table 1 below) that reflect urban policy challenges and responses emerging from earlier work in Europe on urban mobility programmes (e.g. CIVITAS). It is at this level that EVIDENCE presented its arguments and information.

<table>
<thead>
<tr>
<th>SUMP Theme</th>
<th>No</th>
<th>Measures</th>
<th>Example Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean vehicles and fuels</td>
<td>1</td>
<td>Electric Battery and Fuel Cell Vehicles</td>
<td>E-vehicles and H2 vehicles (except Internal Combustion Engine vehicles - ICE) and infrastructure e.g. charging point provision. Includes e-bikes, cars &amp; buses</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Cleaner Vehicles</td>
<td>Alternative fuels for ICEs, hybrids (not plug-in), retrofitting buses etc.</td>
</tr>
<tr>
<td>Urban freight</td>
<td>3</td>
<td>Urban freight</td>
<td>Freight consolidation; cycle logistics; Heavy Goods Vehicle restriction / enforcement.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Demand management strategies</th>
<th>Access restrictions</th>
<th>Pedestrianisation; limited traffic zones; restrictions on through traffic e.g. zonal access schemes; bus gates.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access restrictions</td>
<td>Public transport lanes, High-Occupancy Vehicle (HOV)/High-Occupancy Toll (HOT) lanes, cycle lanes, carriageway narrowing (including reallocation to walking and cycling)</td>
<td></td>
</tr>
<tr>
<td>Environmental zones</td>
<td>Zones which control driver behaviour or limit access to vehicles achieving emissions limits e.g. Low emissions zones</td>
<td></td>
</tr>
<tr>
<td>Congestion charges</td>
<td>Urban road pricing including HOT lanes.</td>
<td></td>
</tr>
<tr>
<td>Parking</td>
<td>Restrictions; fee-based management; parking enforcement</td>
<td></td>
</tr>
<tr>
<td>Mobility management</td>
<td>Site-based travel plans</td>
<td>Corporate, school, university, public buildings, major traffic generators (hospitals, stadia).</td>
</tr>
<tr>
<td>Access restrictions</td>
<td>Personalised travel planning</td>
<td>Individually focussed travel planning, such as that seen in new housing developments.</td>
</tr>
<tr>
<td>Marketing and rewarding</td>
<td>Marketing / social marketing which is brand / image / lifestyle focussed. Rewards-based schemes, e.g. Eco-driving.</td>
<td></td>
</tr>
<tr>
<td>Collective passenger transport</td>
<td>Public transport enhancements</td>
<td>Enhancements other than fuel/power systems. Includes accessibility, subsidies, fare incentives, integrated ticketing</td>
</tr>
<tr>
<td>New public transport systems</td>
<td>New forms of public transport services Bus Rapid Transit, Light Rail Transit, guided bus, Demand-Responsive Transport/collective taxis, transit-oriented development</td>
<td></td>
</tr>
<tr>
<td>Integration of modes</td>
<td>Park-and-Ride, bike-rail integration, cross-modal ticketing, cross-modal interchanges</td>
<td></td>
</tr>
<tr>
<td>Transport telematics</td>
<td>e-ticketing</td>
<td>‘Smart ticketing’ on mobile, smartcard, contactless cards</td>
</tr>
<tr>
<td>Traffic management</td>
<td>Urban traffic optimisation systems; selective bus priority</td>
<td></td>
</tr>
<tr>
<td>Travel information</td>
<td>Information provision and single and multi-modal journey planners</td>
<td></td>
</tr>
<tr>
<td>Less car dependent mobility options</td>
<td>New models of car use</td>
<td>Car share (free floating and fixed) and carpool (including vanpool)</td>
</tr>
<tr>
<td>Walking</td>
<td>Organised collective walking; promotion; infrastructure</td>
<td></td>
</tr>
<tr>
<td>Cycling</td>
<td>New carriageway lanes, new off-road paths, bike loan schemes, ‘bikeability’ training.</td>
<td></td>
</tr>
<tr>
<td>Bike sharing</td>
<td>Provision of collectively owned bikes/e-bikes via on-street automatic hire arrangements for time-limited periods.</td>
<td></td>
</tr>
<tr>
<td>Inclusive urban design</td>
<td>Schemes in which motor traffic is not eliminated but managed through design e.g. ‘Homezones’, Shared Space</td>
<td></td>
</tr>
</tbody>
</table>
4.2 Selecting source material

Each measure considered by EVIDENCE has been subject to a ‘selective review’ of literature, identifying sufficient material to provide an understanding of the available economy-related evidence. No attempt was made to duplicate existing systematic reviews of particular measures, or to capture all of the published work relevant to a measure. Source documents were considered if they had addressed the following three factors:

- Costs: Planning and implementation, project management and investment. Also, operational, maintenance, administration and enforcement expenditure.
- Benefits: Additional employment, travel cost and time savings and revenues from fees and charges.
- Socio-economic benefits: Local air quality, climate change emissions, noise, access, traffic safety and liveability.

Material was acquired in three ways:

1. Through a 2014 international ‘call for evidence’, promoted to organisations, individuals and networks and via project and other EU websites. This approach targeted material outside the public domain, or not published in English.
2. From searches of a range of source databases and repositories of information on urban mobility (e.g. Eltis and CIVITAS), as well as specialist academic databases.
3. Through the knowledge and personal resources of experts involved in the EVIDENCE project.

4.3 The body of evidence

Most material came via methods 2 and 3. In total, resulting in around 750 documents, which were then subject to several categorisation and filtering steps to make the review manageable. A key element of this process was to distinguish between material that contained real cases (i.e. contained evidence) of project appraisal (both ex-ante and ex-post studies), and that which did not. Many of the documents focussed on the wider consideration of sustainable urban mobility issues or transport evaluation and appraisal issues, and as a result, they were put aside. The result was a database of 350 documents that could be analysed in respect of quality and quantity against factors listed in Table 2 below.

### Table 2 Evidence review criteria

<table>
<thead>
<tr>
<th>Quantity of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Across the whole measure category</td>
</tr>
<tr>
<td>• The range of implementations reported</td>
</tr>
<tr>
<td>• Inclusion of economic variables</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Perceived robustness of methodology</td>
</tr>
<tr>
<td>• Was it empirical?</td>
</tr>
<tr>
<td>• Has it been peer reviewed?</td>
</tr>
<tr>
<td>• For how long was it evaluated?</td>
</tr>
<tr>
<td>• Is it recent evidence?</td>
</tr>
<tr>
<td>• Can it be generalised to other situations and locations?</td>
</tr>
</tbody>
</table>

Analysis of economic benefits flowing from the interventions is written up at Measure level, and resultant documents then peer reviewed by international transport experts. Cities can explore the highlights of the Measure Reviews in the EVIDENCE Report, and the full content in the EVIDENCE Reviews. More details of the process followed to capture the relevant source material is available in the EVIDENCE Method report. More details of all publications from the EVIDENCE project can be found in Section 10 of this document.
5. The economic benefits of sustainable mobility

Extensive economic evidence was available for around a third of the categories of measure typically found in a SUMP. In addition, at least some evidence was found for all measures.

5.1 Key findings

Judged on the quality and quantity criteria summarised in Table 2 above, seven measures in particular showed strong evidence of economic benefits. In addition, the evidence on environmental zones was limited but strong. For the remaining fourteen measures, the evidence was weaker and in some cases scarce. It is notable that in around half of cases the economic benefits focussed around reduced use of private cars, and the indirect benefits this created in terms of reduced road congestion for other travellers, particularly those continuing to use private cars.

Results for the individual measures are detailed in Table 3 below.

Table 3 Measures and economic benefit

<table>
<thead>
<tr>
<th>Measures with good quantity + quality of economic evidence:</th>
<th>Measures with methodologically-weak evidence, or limited evidence (or both)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• cleaner vehicles (m.2)</td>
<td>• integration of modes (m.14)</td>
</tr>
<tr>
<td>• parking management (m.8)</td>
<td>• e-ticketing (m.15)</td>
</tr>
<tr>
<td>• site-based travel plans (m.9)</td>
<td>• traffic management (m.16)</td>
</tr>
<tr>
<td>• personalised travel planning (m.10)</td>
<td>• travel information (m.17)</td>
</tr>
<tr>
<td></td>
<td>• new models of car use (m.18)</td>
</tr>
<tr>
<td></td>
<td>• walking (m.19)</td>
</tr>
<tr>
<td></td>
<td>• bike-sharing (m.21)</td>
</tr>
<tr>
<td></td>
<td>• inclusive urban design (m.22)</td>
</tr>
<tr>
<td></td>
<td>• enhancements to public transport systems (m.12)</td>
</tr>
<tr>
<td></td>
<td>• new public transport systems (m.13)</td>
</tr>
<tr>
<td></td>
<td>• cycling infrastructure (m.20)</td>
</tr>
<tr>
<td></td>
<td>• environmental zones (m.6)</td>
</tr>
</tbody>
</table>
In all cases but one (enhanced information), the economic benefits of a specific measure were found to be improved by introducing it as part of a carefully integrated package. In general, effective packages needed to contain both new supply features for modes and behaviours encouraged by policy alongside demand restrain measures associated with modes and behaviours discouraged by policy.

In common with any intervention made on an existing transport network, SUMP measures can be associated with short-term economic disruption. This might be particularly relevant when providing new public transport alignments, reorganising parking or implementing pedestrianisation schemes. However, most SUMP measures offered benefits in the short-run, once inaugurated. In some cases, at least part of the benefits would be long-term, and indirect, for example, the economic benefit of reduced costs to the health system (to be expected in future decades) of encouraging a more physically active population.

The EVIDENCE analysis identifies a number of SUMP measures where local administrations can be confident that the allocation of enhanced resources will be beneficial from an economic perspective alone. However, even where the evidence of economic benefits is currently not of good quantity or methodological quality, it is likely that all or nearly all of the measures have wider economic benefits. Very often, those measures will also have strong benefits in the social or environmental domains, which might be sufficient to justify their application in the meantime, whilst the economic evidence-base is further developed.

5.2 Ways to make use of the evidence

Cities are encouraged to use the EVIDENCE findings (and resources) in the following ways:

1. To help build a business case for sustainable mobility

There will often be a need to present a ‘business case’ when justifying expenditure on sustainable mobility interventions. The EVIDENCE findings help to provide input to this process in several ways:

   - By indicating, the net beneficial economic returns that are likely to be experienced from the range of interventions commonly found in a SUMP, including the range and scale of benefits. Not all benefits will be overtly financial and/or economic. Environmental and social benefits may exist in addition to more clearly economic ones, and some of these can have long-run financial benefits if implemented at sufficient scale - for example through improving air quality.

   - By providing information as to which interventions are most likely to work well together in respect of producing more sustainable mobility and providing economic benefits: some individual interventions may not achieve a payback in their own right, but will contribute to the success of others.

   - By offering examples of effectively evaluated existing interventions through the EVIDENCE database and the Measure Reviews, which can serve as validated, pioneer applications.

2. To re-direct the focus of funding towards sustainable mobility

In documenting economic benefits, EVIDENCE has created a library of resources (including the Measure Reviews15 and the Database16 of source material) that will aid policymakers and planners in building their political and economic cases. This will also help challenge the argument that sustainable mobility interventions offer poor value for money in comparison to road and infrastructure spending. Often a key element in decision-making is the level of political will towards particular measures, and for a

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Demonstrating economic benefit from sustainable mobility choices

SUMP in general. EVIDENCE contributes to the creation of political support, by illustrating where there are potential economic benefits from interventions.

3. To help decision-makers build sustainable cities

Whilst the EVIDENCE project was active, it disseminated positive messages about economic benefits and sustainable mobility interventions. Helping to reduce any doubts that decision-makers, practitioners, planners and academics might have that deploying sustainable solutions is as acceptable as proposing any other mobility initiative, and countering perceptions that such schemes are not providing a return on their investment. Going forward, EVIDENCE will continue to support those making sustainable choices in urban mobility through the resources it has produced and made available (see Section 10 for more details):

- Through the Measure Reviews and the database of source material, which provides a repository of examples of sustainable mobility measures already, benefitting cities around the world – even if they are not always necessarily being individually measured for those impacts. These will provide decision-makers with an understanding of the range of measures that could be deployed successfully to deliver more sustainable mobility and economic benefit, helping them to be more effective in developing an appropriate package of interventions for their cities.
- By illustrating the different ways in which benefits can be realised and recognised, documented in Chapter III of the Evidence Report. This highlights that existing economic appraisal mechanisms may not necessarily be the most appropriate way to determine value. For example, there are situations in which economic benefits were identified by EVIDENCE that would not easily emerge using traditional applications of appraisal approaches (e.g. CBA). This is not to deny, however, that in some instances when CBA tools are applied to SUMP measure interventions, the results can be very positive, and more beneficial than facilitating growth in private car traffic.
- By making accessible the knowledge and expertise related to sustainable mobility interventions through training resources and a database of source material for cities looking to deploy sustainable mobility solutions (in particular new technologies or emerging travel modes) where a lack of knowledge may deter that deployment.

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18 Refer to Section 10 for full details of training resources
6. Overcoming barriers to sustainable mobility

The perception that deploying a sustainable mobility intervention is a poor economic choice was a key barrier that EVIDENCE sought to overcome. It was not the only obstacle to greater take up of SUMP measures, though, with attitudes amongst transport professionals and decision-makers also being areas that needed addressing.

The barriers

One of the most important factors driving the need for the EVIDENCE project was the perception that there were barriers to deploying sustainable mobility interventions in respect of their ability to achieve economic benefits and offer high value-for-money. These barriers included:

- The belief that the prevailing view of transport professionals in (some) EU states would be that infrastructure investment delivered in isolation was the primary determinant of economic stimulus, and that sustainable mobility schemes offer poor value.

- That whilst a SUMP process is focussed on building a holistic, bottom-up consensus incorporating social and environmental objectives, the interventions involved are perceived at the national level as ‘nice to haves’, with little tangible value. Consequently, those responsible for allocating national expenditure on mobility might still see many aspects of an effective SUMP as less important than major infrastructure schemes, which in turn could undermine access to funds flowing from national administrations.

- That there is a lack of high-level support for more sustainable interventions. Whilst the ongoing promotion of SUMPs leads to the production of a considerable range of tools, guidance documents and materials, the lack of high-level buy-in could still frustrate progress.

These factors could drive cities to continue to rely on investment in infrastructure schemes (i.e. new roads), ahead of more sustainable measures.

This presented EVIDENCE with the challenge to provide materials to convince the economists and gatekeepers of funds at a national level to change their approach, by clearly identifying and documenting the economic benefits of sustainable mobility initiatives. That these barriers can be overcome is evidenced by the fact that some European nations now have a clear and direct link between production of a plan (SUMP) and provision of finance. In these member states, the economic

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20 Such a link is embedded in the way that transport funding is allocated in Belgium, France, Italy, Netherlands, Norway and the UK.
benefits of an integrated strategy are recognised, and all have national guidance in place specifying requirements, often defined in legal parameters (although of course there is always room for further improvement). EVIDENCE has collated this best practice and shared it with stakeholders in the targeted member states, helping to break down some of the negative views of more sustainable interventions.

**Testing the perception**

When the perceptions and views above were tested through the engagement activities undertaken by EVIDENCE (see section 7 below), it was apparent that there were signs that these barriers were not universal nor insurmountable. For example, the project team encountered encouraging evidence that it was not the view of all policy-makers and practitioners that infrastructure investment was the only route to economic development. Conversely, many interviewees and workshop attendees were not convinced (at the time of speaking with them) that EVIDENCE could make significant change in current political thinking, although they were supportive of the material being produced.

**Overcoming the barriers**

There are several areas where action should be taken to overcome the barriers described above. The first of these is to see clear directives on sustainable mobility from higher levels of political management; otherwise, it will be ‘business as usual’ in the cities of the new member states. Much of what is currently happening in SUMP development in these countries is perhaps only happening because funds have been allocated (and an EU White Paper has laid out some clear directives on EU expectations of member states). Some countries are seen to be not using national funds for SUMP implementation programmes, instead relying on contributions from the EU Cohesion programme. This raises the question: if it were not for EU funds, what would be the interest or commitment to SUMPs in those states? It will be interesting to see if these attitudes change when the current cohesion fund period is over, and EU funds are no longer so readily available for certain areas of expenditure. Perhaps at that time more cities will put more effort into making more economically effective and sustainable decisions regarding transport and mobility – and draw on the EVIDENCE resources for support.

Being able to communicate effectively, and in appropriate language with economists and finance ministry officials is another area to develop to help overcome the barriers. Such an ability is critical when cities come to present evidence to demonstrate how sustainable mobility interventions (combined in a SUMP) will help deliver an increased return on investment. At present, some practitioners and policy advisors may feel poorly qualified to undertake such a task, and their lack of confidence will be apparent to decision makers, compounding any reluctance to change policy and funding allocations. Thus, even where a SUMP is prepared, the proportion of overall funding allocated to sustainable transport initiatives might still be limited. This lack of confidence is also apparent in the ongoing preference for ‘trials’, ‘pilot studies’ and ‘demonstrations’ of sustainable interventions whilst the evidence of their success elsewhere may be readily available.

Evidence needs to be developed and promoted at an appropriate level. At present, there is more interest in generic (or high-level) evidence that a SUMP is good for an economy. Such material would though be more appropriate for a city’s requirements at an early stage, when justifying the effort required to develop a SUMP, rather than justifying funding for individual measures. In fact, SUMPs are highly context-specific and are fundamentally a sum of their parts, and there is little evidence available to demonstrate the value of a SUMP per se, (due in part to the difficulty of identifying the situation that would have occurred without a SUMP). For such reasons, this project has focussed on providing evidence for the ‘parts’ rather than the SUMP itself. The future promotion of

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21 How urban transport projects are appraised: current practice in the EU. ‘A common practice reader’. 2014
EVIDENCE resources are also seen to be a key factor in helping to overcome the perceived (and real) barriers to sustainable mobility interventions. Although EVIDENCE is seen as useful and relevant, it would become more effective with strong support from officers within the EC who could push such products more forcibly onto cities.

Whilst the steps detailed above will help to overcome barriers to implementation of a SUMP, and the sustainable mobility interventions contained within it, many cities currently engaged in the process are still in the early stages of development. As a result, they may not yet have experienced fully the challenge of obtaining funding. Frustration at the process typically comes later, and it is at this stage that people are more likely to appreciate the inherent difficulty of changing the transport decision-making and funding process. At this point, the deliverables provided by EVIDENCE are likely to be of most practical application, helping justify new funding streams for sustainable urban mobility measures.

Finally, it may also be the case that action to overcome barriers to implementation will come from other parts of society in the future. In response to wider mobility and sustainability issues in cities it may be that support for mobility management schemes will come from citizens demanding more, activists supporting this movement, and better trained and more knowledgeable professionals replacing existing personnel within key positions at both city and ministry planning departments.
7. The stakeholder view

Engaging with the practitioners and professionals involved in delivering urban mobility offered insights into how sustainable mobility interventions have been promoted and deployed to date, and how this might be improved in the future – particularly through new training resources.

Outreach activities

EVIDENCE directly engaged with professionals across Europe as a way of both learning about the current situation in European cities, and to provide channels through which to feed back the knowledge developed during the project. Those who became involved in this exchange of knowledge included experts in transport and mobility management, contacts in relevant ministries in EU states, a small number of pilot cities, and academics across all member states (See Figure 2 below).

Figure 2 Engagement activities

<table>
<thead>
<tr>
<th>Stakeholder Group:</th>
<th>Mobilities Experts / Practitioners</th>
<th>Decision makers / Policy Influencers</th>
<th>Academics</th>
<th>Relevant Ministry</th>
<th>Pilot Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities:</td>
<td>Interviews in new member states (22 per country)</td>
<td>Interviews in new member states (8 per country)</td>
<td>Interviews in all EU member states (2 per country)</td>
<td>Workshops or event in each new member state</td>
<td>Two visits to each of five cities</td>
</tr>
</tbody>
</table>

1. Interviews

Conclusions drawn from this engagement activity confirmed that all three of the target interviewee audiences agreed that there was a need for evidence of the economic benefits of sustainable interventions, and for it to be available in accessible formats. Concerns were expressed during the interviews, though, as to whether having such resources would, alone, have sufficient impact on current political thinking in their different countries. There was also a perception that perhaps when the current cohesion fund period is over, and EU funds are no longer so readily available for certain, areas of expenditure, then more cities might put more effort into making more economically effective and sustainable decisions regarding transport and mobility.

2. Ministry workshops

This series of EVIDENCE events was a further opportunity to engage with decision makers and planners in the target countries. In some instances, they were organised in partnership with other SUMP-related events taking place in the country, with the government ministries involved, pleased to participate where and when they could. Such
activities highlighted support for the aims of the EVIDENCE project, and the attempts to engage in the issue of deploying sustainable mobility and SUMPs in their countries. Ministries were, though, somewhat constrained, as in many cases their current policies were tied into the National Operational Programme, which in turn was tied into the Cohesion Funds and to a plan that was negotiated and discussed and agreed upon several years before Evidence was initiated. So, whilst reactions were positive to the messages around economic benefits, this was not immediately translatable into more concrete attempts to actively promote sustainable mobility interventions with policy and decision makers. The seeds of knowledge have though been sown, and it is to be hoped that future decision-making will take note of the new understanding of the potential economic and other benefits that can arise from sustainable mobility interventions.

3. Pilot cities

EVIDENCE engaged five cities, Riga (LV); Kaunas (LT); Dubrovnik (HR); Ljubljana (SI), and Veliko Turnovo (BG). All of these cities received two visits from project partners (with the exception of Veliko Turnovo, which was only visited once). Cities were in general positive and generous in their time, help, and interest. Many were keen to speak openly about the problems in their cities, and the factors that prevent SUMP measures receiving the full support that the evidence shows they should have. Some key issues identified in this work were that:

- In some cities, SUMP development and other related mobility-management issues are only a topic of interest because of the current availability of funding for them.
- There can be a lack of ‘inter-departmental’ cooperation on SUMP development (at both national and city level), even though this is seen to be a necessary approach.
- EU funds - and staff - can often be committed to planning and managing larger projects and budgets associated with the ERDF and Cohesion Fund. Thus, it is sometimes difficult to get committed people for SUMP development.

Informed transport professionals

An important element to consider when examining how sustainable mobility interventions are initiated and deployed in cities in the EU is to understand how the transport professionals responsible receive training in this field; in particular, their understanding of economic benefits. It is of course also important to look forward, and identify opportunities to support the incorporation of appropriate evidence into the training of the “next generation” of transport professionals.

EVIDENCE approached this challenge by carrying out interviews with relevant academics in all twenty-eight European member states. They were asked whether sustainable mobility was included in curricula, and if so how it was incorporated in academic and professional education and training.

Current approaches to training

In most EU countries, education on transport and mobility is still approached mainly from a technical (i.e. engineering) perspective, though this has changed in the last decade. Nowadays, transportation is an educational theme also in a number of programmes in disciplines such as economics, geography, sociology and (urban) planning. However, if educational programmes continue to educate people in predominately the established, traditional way (mainly engineering), the same mistake (focussing investment mainly on road expansion) will continue. Training and education needs to encourage

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22 For “next generation” we mean those people either being engaged in teaching and/or sharing knowledge in a learning environment, and those being taught, and given the importance of lifelong learning and flexibility through the career, it should not be seen as a simplistic statement about age.

23 The results of these interviews can be found in the Evidence ‘Next Generation Report’. This provides an outline of the situation with regards to sustainable mobility in educational programmes in all member states.
people to reach out to other disciplines in order to create more integration of sustainable transport within other fields.

The supply of professional education in (sustainable) transport is very fragmented, limited and hard to identify in most European countries. Sometimes universities or other knowledge-based organisations provide it; sometimes government-based organisations or private companies do. There is a large variety of very specific courses on transport-related topics – e.g. on the latest safety standards in transport infrastructure, or new legal requirements for example - but there are few courses specifically designed to promote sustainable transport initiatives.

**Training needs**

There is a need for more integration among already existing transport educational programs. In addition, in some countries (especially in the recently-joined member states), there is a need to increase the number of educational programs that discuss the issue of sustainable mobility and its benefits. These programs should be multi-disciplinary and the interaction between educational institutions and practitioners should be further encouraged. Both parties can learn from each other and there are definitely possibilities for knowledge ‘spill-over’ effects.

After their initial academic study, it is important to give the possibility to transport professionals to continue and/or broaden their learning experiences, especially through exploring other disciplines.

Finally, and in particular in the recently-joined member states, EU-funded projects seem to be effective in changing the mentality of transport professionals. In these countries, very often, the only training activities focused on sustainable transport (e.g. seminars, workshops and the like) are those organized in the framework of EU-funded projects.

For small and medium-size cities, the EU and ‘EU experts’ have an important status and they might also be successful in convincing local policy makers to invest in sustainable mobility measures.

**Training resources**

EVIDENCE has developed new training resources\(^2\), drawing on the needs indicated in engagement activities, and drawing on the results and findings of the project. These training materials provide a country-specific overview of all the twenty-two measures reviewed, and are delivered in an easy-to-use format. The training materials can be particularly useful when combined as a resource with the EVIDENCE reviews and reports.

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\(^2\) Refer to Section 10 for full details of training resources
8. Lessons learnt

The Evidence Project: Final Summary of Project Achievements

EVIDENCE has been successful in achieving many of its goals, in finding, documenting and disseminating evidence of economic benefits in sustainable mobility interventions. The project successfully sourced, and reviewed material across twenty-two separate categories of sustainable mobility intervention suggested in SUMP guidance. This has not only provided a basis for the engagement and dissemination activities in the remainder of the project, but also stands as a valuable additional set of resources for urban areas looking to develop a SUMP. It was possible on arrival at project completion, though, to reflect further on some of the obstacles encountered along the way, and to suggest what might be done differently in a future similar exercise.

8.1 The evidence

An initial surprise was that the widely communicated ‘call for evidence’ made to practitioners and academics produced a limited response. The call was expected to highlight material not published widely by contractors, city or government departments, or not written up in the academic record of literature. The shortfall meant more effort than planned needed to be invested in searches of online resources, which in turn generated a much larger pool of material to work with, and consequently a more extensive task to categorise and filter the potential evidence available, so as to identify the high-quality items.

Special effort went into ensuring that the principal European languages featured in the search, although the lack of French and Spanish sources found was a concern. However, following further investigations, the limited identification seems to reflect the underlying availability, rather than a highly-biased search process.

In addition to the changes made to the strategy for sourcing evidence, in the event a larger number of items than intended needed to be reviewed, in order to cover the full range of SUMP measures. The original plan had been too deep-review around one hundred and fifty source items, but this evolved to embrace more than three hundred and fifty documents, requiring more effort in management of the selection and review process.

A lesson for future analyses on this scale is to adopt a more integrated approach to the search and review activities (tasks were perhaps too distributed across project partners in this instance), with a greater continuity of involvement across the different processes - maximising the knowledge and skills of the experts undertaking the analysis.

Source material proved to be variable across measures, with many items available for some and just a few for others. Some potential material had methodological weaknesses, such as a limited ability...
to capture longer-term behavioural outcomes, or too narrow a focus. Some measures relied heavily on a few interventions, and there was weak coverage of emerging technologies. In some instances, evaluations studied a number of interventions simultaneously, making it difficult to disaggregate the effects of specific changes. In practice, this meant that in writing review material the evidence gaps had to be re-researched to ensure adequate depth and coverage.

8.2 Engagement and dissemination

EVIDENCE also had challenging engagement and dissemination goals, and whilst it has achieved many of these, there were some instances where obstacles made this more difficult. For example, identifying relevant stakeholders and individuals to interview across the eleven new member states proved demanding – requiring a detailed knowledge of the culture and approach to transport issues in each country.

Language was also a potential barrier, although interviews in a local language offered more in-depth knowledge than those in a second or third language. A willingness to participate was also necessary, and as EVIDENCE spanned three years, the project was subject to changing personnel and roles in the member states, and there was a limited pool of individuals with relevant transport skills in some countries. In practice, ten or fifteen interviews with individuals often proved to be sufficient to get an understanding of the situation in a country, particularly where SUMP.s were centralised in terms of their development.

The frequency of SUMP-related events in the recently-joined members states meant that it was often opportune to join another project or initiative when looking to engage with transport ministries – to avoid creating competing demands for input. Flexibility in format proved to be key to ensuring that activities took place in all eleven states – facilitating everything from formal events to roundtable discussions.

EVIDENCE also looked to engage directly with a small number of cities, through a public call for participants. Perhaps again influenced by the number of similar SUMP and mobility initiatives, the response was limited, so the eventual choice focussed on working with cities where project partners understood their situation well, or had strong contacts already. The engagement did highlight some issues, with questions put to the project team as to why EVIDENCE did not have funds to help cities push project materials further. There was also a feeling in some areas that, although the project provided another valuable and relevant set of resources, that without strong support from the EC there would be limited adoption or use across other cities.
9. Recommendations

EVIDENCE made recommendations for stakeholders at all levels in the process of selecting and implementing sustainable urban mobility interventions. Full adoption of these would make a significant contribution to a faster and deeper uptake of SUMP's and therefore the creation of more sustainable and desirable cities.

For those looking to deliver sustainable mobility interventions / Decision-makers

The evidence is now visible: The European Commission supports sustainable urban mobility because of its potential to improve health, reduce carbon, protect nature and ecology, improve international competitiveness and get better value for money from scarce public funds. EVIDENCE has now made available (for the first time) a large amount of detailed evidence to support an enhanced role for sustainable urban mobility in EU cities and it is up to decision makers to become familiar with this evidence and give a higher priority to sustainable urban mobility interventions and investments. We encourage them to do this.

For Cities

Benefits from deploying interventions as packages of measures: The evidence encountered in the measure reviews shows that some interventions are more likely to be successful when they are introduced in conjunction with other interventions. UK studies for example highlighted that site-based and personal travel planning interventions contributed to a package of measures that saw positive CBA outcomes across a town or city.

Deploy restraint as well as introduce new capacity. In general, the interventions that introduce new capacity, or extend existing networks of more sustainable modes, such as public transport, will also benefit from some element of restraint being applied on the use of private vehicles. This might be achieved through increased car user costs (parking management, congestion charging), reductions in roadspace (such as parking management, roadspace reallocation, and urban realm changes) or potentially through information or incentive schemes. Many of these relationships are symbiotic: a new congestion-charging scheme will benefit in its efficacy and acceptability from improved public transport services.

Global investment will flow to high(er)-quality cities: The evidence presented in this study also reveals that a shift in patterns of spending and project selection away from new high-capacity roads or intercity high-speed rail links and instead towards SUMP measures designed to create highly attractive living environments also has the potential to reduce congestion and pollution. These issues will increasingly be factored into global decisions about inward investment, corporate relocation and the attraction and retention of highly qualified staff. A city that can reduce the number of vehicles on urban highways and provide high-quality walking and cycling facilities set in an attractive public realm will be more successful than a city characterised by high
levels of vehicle traffic, congested roads and air pollution serious enough to be responsible for mortality and hospitalisation on a large scale.

**For Ministries in the recently-joined member states**

In the coming few years, and of course depending on what new budget priorities the EU decides upon, the new member states will start to update policies and develop new operational programmes. EVIDENCE should be highlighted to all those ministries responsible for developing SUMP{s} and mobility management measures, to ensure that the learning from the project is embedded at the earliest opportunity.

**For the EC**

EVIDENCE can contribute to the wider debate: The review undertaken was wide-ranging, and it clearly demonstrated that sustainable urban mobility interventions and investments, for example, supporting higher levels of cycling and public transport, are as effective as traditional infrastructure projects, which typically add new road capacity in or around cities. This is of considerable significance in the EU-wide debate within cities and regions about the future integrated, sustainable approach to spatial planning, transport and economic development.

**For other projects**

Many EU supported programmes and projects include a significant amount of initial activity related to baseline research on the issues that the programmes / projects seek to find a solution for. In this case, the EVIDENCE project represents an important review resource, and its outputs should be effectively disseminated and promoted to the relevant programme/project officers to avoid inefficient repetition.
10. Resources for cities

The search for evidence of the economic benefits of sustainable urban mobility interventions has produced a range of resources that will help cities to deliver more sustainable mobility interventions and to engage effectively with the SUMP approach to urban mobility. These resources are accessible from the project’s own website or from Eltis (key deliverables only, marked with * below).

The full set of EVIDENCE resources available are:

<table>
<thead>
<tr>
<th>Resource Description</th>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrating economic benefit from sustainable mobility choices: The Evidence Project.</td>
<td>2017*</td>
<td>Concise, accessible overview of the project and its key findings and lessons learned.</td>
</tr>
<tr>
<td>How urban transport projects are appraised: current practice in the EU. <em>A common practice reader</em>.</td>
<td>2014</td>
<td>Short report providing an understanding of the challenge in determining a mobility project’s viability; the role of project appraisal (most commonly cost benefit analyses, CBAs) in decision-making at urban level; and the role Sustainable Urban Mobility Plans (SUMPs) play in project prioritisation.</td>
</tr>
<tr>
<td>The Economic Benefits of Sustainable Transport Actions - Independent Review of Evidence.</td>
<td>August 2015</td>
<td>This short report (the EVIDENCE ‘Summary report’) is available in twenty-two European languages and offers an initial overview of the benefits seen in the existing evidence and makes the case as to why support should be given for greater investment in SUMP measures.</td>
</tr>
<tr>
<td>Measure Review(s) 1-22</td>
<td></td>
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</tbody>
</table>
The core output from the project, produced as three separate documents. The ‘Report’ details the key findings from the project, whilst the ‘Method’ contains a description of the approach followed by the project in the review, combined with reflections on the quality of the material available. The ‘Reviews’ document presents a detailed analysis of twenty-two different categories of mobility interventions, each of which is also available as a separate concise document.

The reviews offer a snapshot of current evidence selected and reviewed by the EVIDENCE team. Appraised and written in a common and consistent format, these reviews provide a ready-made assessment of the potential benefits of specific types of intervention, whether that is infrastructure to encourage walking, or support for electric vehicles.

The Economic Benefits of Sustainable Urban Mobility Measures - Independent Review of Evidence: Database of source material, 2016*

Printable list of the evidence sources that are reviewed in depth and referenced in the documents above. Includes almost three hundred and fifty items of evidence.

Also available as an online tool, providing a short summary of each document and in most cases a clickable link to the actual source material.


The EVIDENCE Measure summaries, the 'Flyers'. 2016

A single document that presents the key messages from the twenty-two measure reviews as a collection of two-page summaries in one document.

The Measure 'Flyers' present the same information in the form of twenty-two individual documents, each addressing a single measure. A useful tool for engaging participants in workshop activities around selecting and combining measures to build a SUMP package of interventions, or for students exploring sustainable mobility.


The report provides details of the status of sustainable transportation within the major education programmes in each member state.

The report functions as a framework for the EVIDENCE training materials, by identifying gaps and opportunities to enhance the inclusion of sustainable mobility in the training process of the next generation of transport professionals.

EVIDENCE Training materials. 2016

A series of seven presentations in Microsoft PowerPoint format based on and taking material from the content of the documents above. The topics of the presentations follow mobility intervention themes from

Note: The online resource requires a simple registration / login as a mechanism to help understand how many people are making use of the resource. Some sources used by EVIDENCE are located on subscription or pay-per-view websites but where possible, free-to-access versions have been identified.
the SUMP approach to urban mobility that encompass all twenty-two measure categories explored by EVIDENCE. These themes are:

- Less Car-dependent Mobility Options
- Transport Telematics
- Collective Passenger Transport
- Mobility Management
- Demand Management Strategies
- Urban Freight
- Clean Vehicles and Fuels