



DELIVERABLE 6.1

# PERFORMANCE INDICATORS - UPDATE

WP 6: IEE Common Dissemination  
Activities

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# VELOCITÀ

WP 6: IEE Common Dissemination Activities

## D 6.1 UPDATED PERFORMANCE INDICATORS

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# 1 PROJECT DESCRIPTION

VeloCittà brings together 5 urban Bike Sharing Systems (BSSs) with performances that are currently failing to meet the desired levels of use. The objective is to identify and remove the responsible market and organisation barriers by applying strategies and methods that have already been proved effective in stimulating a behaviour change through segmented marketing and operational enhancements.

Practically, all five sites will implement marketing campaigns during the project. Exchanges with more advanced BSSs and with earlier IEE projects related to segmentation and effective campaigning will take place in the early phases of the project to optimise these campaigns. Setting up a permanent online European Bike Sharing Workspace that will have relevant documentation, best practices, campaign suggestions, a contact forum and guidelines is another important feature of this project.

The VelloCittà project will contribute to the EU's energy policy goals by encouraging target groups like citizens, tourists and employees to use an energy efficient and sustainable transport mode for their urban travel journeys. This will be achieved by running successful BSSs. Specifically, VelloCittà adapts knowledge and successful approaches tried in various fields of service provision and in previous IEE projects (Segment and Obis, but also Carma, Trendy Travel, and Spicycles), to the case study sites of Krakow, London, Szeged, Padua, and Burgos.

Ultimately, VelloCittà seeks to change the travel behaviour of the public through two complementary approaches: a) utilisation of user segmentation techniques to overcome perceptual and/or attitudinal barriers, and b) adoption of the most effective available operational solutions with regard to financial organisation and political involvement to improve the performance of the BSSs.

## 1.1 Main outcomes

- Communication campaigns aimed at target users designed and implemented in all case study sites;
- 5 fact-sheet about effective communication activities to encourage the use of shared bikes and 2 fact sheets about optimising the BSS business case and the political involvement;
- A Workspace on Bike Sharing Systems that finds its ongoing base after the project;
- A signed Political Statement by all five Demonstration site politicians;
- 15 European follower cities and 5 non-European followers;
- Articulated dissemination material.

## 1.2 Expected results

- Wider awareness and increased use of Bike Sharing Systems in the 5 partner sites. This means amongst others significant increases in the number of users, the number of stations and cycles and rental per users.
- Attitudinal shift amongst target groups towards a more positive view towards cycling in general and bike sharing in particular.
- Increased operational efficiency of the BSSs through enhanced knowledge about financial organisation of BSSs and higher political involvement.

In order to reach the 2020 targets on energy savings we expect to realise a modal shift between 5 – 21 % depending on the size and scope of the different local sites. This translates to 100 million kilometres travelled per year by bikes operating as part of case study BSS and 1619 t CO<sub>2</sub>e/year reduction of greenhouse gas emissions by the end of the project.

### 1.3 Which CPIs?

Within project duration:

- The project will lead to measurable reductions in greenhouse gas emissions (tonnes CO<sub>2</sub>e/year) and primary energy savings (toe/year)

By 2020:

- The project will lead to measurable cumulative reductions in greenhouse gas emissions (tonnes CO<sub>2</sub>e/year) and primary energy savings (toe/year)

### 1.4 Which methodology?

We are using the **Method 1 Approach (bottom-up)** because each site has accurate data on the use of the BSSs.

We considered Method 2 Approach (top down), because there's also data available on high level (modal split cities) and based on best practises elsewhere with BSSs (oa. OBIS project) but it's our experience that those data sets are less complete and not suitable for the great variety within Velocittà participating cities.

In more detail evaluation in VeloCittà follows an established approach framed by the EU project MAESTRO and further refined through succeeding EU projects, amongst which the family of CIVITAS demonstration projects.

In Velocittà the primary goal of evaluation is to find and understand the concrete evidence produced by applying proven solutions/actions to a number of existing BSS aiming at increasing the use of shared bike offerings. In order to reach the goal, evaluation is scheduled to execute a "before and after" analysis, which is effectively conducted as follows:

- Establishment of a project baseline, which represents to all means and purposes the departing situation (before) and as such the benchmark against which comparing the final one. The baseline is analysed in each Velocittà city through an initial round of data collection, which concerns the same exact impact and process indicators that are going to be collected at project conclusion.
- Continuous verification (monitoring) of the smooth implementation of the activities and intermediate rounds of data collection to monitor trends.
- Determination of a final picture, which represents the concluding situation (after) as a result of the interventions made possible by VeloCittà. Again, the instrument utilised is impact and process data collection, performed according to the methods employed for baseline and monitoring.

The information thus produced will enable the evaluation team to produce both an impact and process assessment, taking into account the specific city contexts, and recommendations.

## 2 STEP 1: DEFINING SCOPE AND IMPACTS

Velocitta is expected to increase the use of cycling. Amongst others by decreasing the number of car trips used by the different target groups before they started using the shared bikes.

Recruitment of (extra) users will take place throughout the project. We expect that positive publicity and good results will lead to wide participating in the partner countries, as well as in follower countries.

Velocitta will run until February 2017 with the increase in cycling and related modal shift being evaluated and measured.

By the end of the project we expect that more interest has been generated in the project and information in the Workspace within the implementation countries and followers so we will have additional information about the impact of the project.

During the project we will work on legacy and actively implement a „follower strategy“ for several countries in Europe and abroad.

### 2.1 Evaluation process

Key to impact evaluation is the identification and measurement of the performance indicators, which are the tools that enable a quantification of impacts (or effects, results) of a project. The progression towards the full execution of evaluation exercise involves the definition of the following:

Figure 2.1 – Progression of evaluation



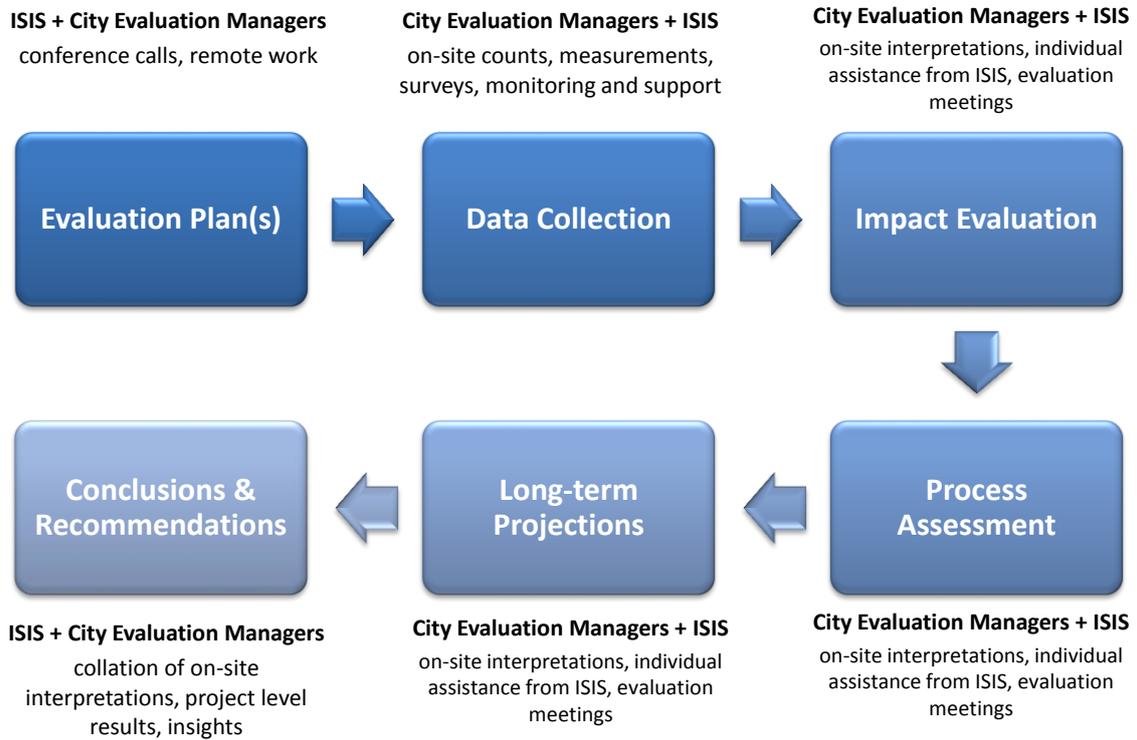
Indicators need to be determined, which describe important characteristics of the situation at hand and that can be measured or estimated both before and after the implementation of the measures, so that appropriate comparisons can be made of any changes or with any alternative(s).

There are often many indicator options for measuring an impact, thus the selection of the right indicators is very important for an evaluation with limited resources, such as the ones of VeloCittà.

The goal is to identify a comprehensive yet limited indicator set, which reconciles i) the scientific requirements of evaluation, ii) the evidence-based knowledge necessary to produce findings and formulate recommendations, and iii) the budgetary constraints of the project.

The next flowchart is an overview of the main roles, activities and tools of the team involved in the evaluation.

Figure 2.2 – roles, activities and tools



## 2.2 Project performance indicators

Further to the VeloCittà impact areas shown in **Fout! Verwijzingsbron niet gevonden.** and the indicators measured by each site, the next is a list of common performance indicators, which will allow distilling project-level findings at the end of the project. These will stem from and will be complemented by datasets and interpretations elaborated in each city.

Table 2.1 – Performance indicators

No.	Evaluation Area	Evaluation sub-area	Impact	Performance indicator
<b>Economy</b>				
1		Benefits	BSS Revenues	Operating revenues
2			Savings to BSS users	Cost savings coming from a reduction in use of other forms of transportation
3		Costs	Costs of measures	Operating costs
<b>Energy</b>				
4		Energy consumption	Energy savings	Savings in fuel consumption (due

No.	Evaluation Area	Evaluation sub-area	Impact	Performance indicator
				to a mode shift to BSS)
	<b>Environment</b>			
5		Air quality	Emissions reduction	CO2 emissions
6			Emissions reduction	NOx emissions
7			Emissions reduction	PM10 emissions
	<b>Society</b>			
8		Attitudinal behaviour	BSS users' attitudinal behaviour	Level of change in attitudes of scheme users
9			BSS target groups attitudinal behaviour	Level of change in attitudes of target groups
	<b>Transport</b>			
10		Quality of service	User satisfaction	Level of BSS users' satisfaction
11		Modal share	Modal share	Cycling modal share

### 2.3 Common performance indicators

During the project we will analyse the data and evaluate measures in order to calculate their modal shift, CO<sub>2</sub> emissions, and energy consumption in comparison to the baseline.

### 3 STEP 2: SETTING THE BASELINE AND TARGETS

We have baseline figures for each of our partners. During the project we will analyse the data and evaluate measures in order to calculate their modal shift, CO<sub>2</sub> emissions, and energy consumption in comparison to the baseline.

**Table 3.1 – Key project targets**

	Burgos	Krakow	London	Padua	Szeged
Increase of registered users by 2017	10%	20%	10%	21%	To reach at least 5,000 users
Increase in rental/user by registered members	10%	10%	10%	10%	10%
Increase in rental/bike	-	-	-	64 rent./bike per month	-
Increase in rental/dock across scheme area	10%	-	10%	-	-
Increase in n. of cycles	50 more than now	tbd	10%	-	50 more than now
Increase in n. of stations	2 more than now	tbd	10%	-	8 more than now
Target scheme density	-	tbd	1 station/ 400 mt	-	1 station/ 200-300 mt
<b>Target modal share increase for cycles</b>	<b>5% by 2018</b>	<b>10% by 2015</b>	<b>5% by 2025</b>	<b>21% by 2016</b>	<b>10% by 2016</b>

Based on the research outcomes (questionnaires among users) in Q3 2014 we will calculate in more detail the GHG emissions reductions and energy savings resulting from the impact during the life of the project and then extrapolating this to 2020. This calculation will take place in Q4 2014 and will be ready in January 2015.

## 4 STEP 3: ESTIMATING SHORT-TERM IMPACTS

Which each city we discussed in detail which improvement was targeted and how this will be monitored. Based on this we were able to estimate the GHG emissions reductions and energy savings resulting from the impact during the life of the project and then extrapolating this to 2020.

**Table 4.1 – Key project results**

	Burgos	Krakow	London	Padua	Szeged
Increase of registered users by 2017	10%	20%	10%	21%	To reach at least 5,000 users
Increase in rental/user by registered members	10%	10%	10%	10%	10%
Increase in rental/bike	-	-	-	64 rent./bike per month	-
Increase in rental/dock across scheme area	10%	-	10%	-	-
Increase in n. of cycles	50 more than now	tbd	10%	-	50 more than now
Increase in n. of stations	2 more than now	tbd	10%	-	8 more than now
Target scheme density	-	tbd	1 station/ 400 mt	-	1 station/ 200-300 mt
Target modal share increase for cycles	5% by 2018	10% by 2015	5% by 2025	21% by 2016	10% by 2016
Willingness of different target groups to shift towards bikes	-	10% (young people)	-	4%	-
<b>Reduction of GHG emissions</b>	<b>6,344 tco<sub>2</sub>/yr</b>				
<b>Primary energy savings (compared to projections)</b>	<b>13,600 toe/yr</b>				

In order to calculate the estimated impacts of the project on CO<sub>2</sub> reductions and energy savings, a number of assumptions have been made:

- The conversion factor for CO<sub>2</sub> g/km ;
- The conversion factor from tonnes of CO<sub>2</sub> to tonnes of oil equivalent is 0.317 toe<sup>1</sup>

**Table 4.2 - savings per mode**

<b>Emission values</b>	<b>CO2 g/km</b>
<b>Car (solo)</b>	<b>140</b>
<b>Avoid rush hour</b>	<b>126</b>
<b>Carpooling</b>	<b>70</b>
<b>Motor</b>	<b>140</b>
<b>Train</b>	<b>60</b>
<b>Public transport</b>	<b>85</b>
<b>Scooter</b>	<b>30</b>
<b>Cycling</b>	<b>0</b>
<b>Walking</b>	<b>0</b>
<b>Work at home</b>	<b>0</b>

Evaluation in Velocittà amounts to:

- Ensure the accurate detection and interpretation of the **impacts** (counted, calculated, surveyed or estimated) of the project.
- Assessing the **process** of activities implementation in order to understand how and why certain results have been reached, alongside the reasons for change and deviation from plans.
- Accordingly elaborating recommendations for those interested in studying and/or replicating similar policies.

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<sup>1</sup> The calculation of energy consumption in tonnes of oil equivalent is 1 tonne of CO<sub>2</sub> = 0.317 toe (Source: [www.epa.gov](http://www.epa.gov) and [www.spe.org](http://www.spe.org))

## **5 STEP 4: ESTIMATING LONG-TERM IMPACTS**

It is envisaged that the Velocitta knowledge will continue to be rolled out after the end of the project and the WorkSpace continues to grow in information and participants.

After each evaluation moment (campaigns), detailed evaluation results will be published and disseminated to potential follower organisations and countries, they will be presented at national and international conferences and this is expected to create additional adoption of the platform.

By the end of the project, we anticipate that we reached at least 20 follower cities in- and outside Europe. In addition, we expect that partner cities will continue their effort on improving bike sharing.

Based on these assumptions in the long term (2020) we expect to realise a modal shift between 5 – 21 % depending on the size and scope of the different local sites. This translates to 100 million kilometres travelled per year by bikes operating as part of case study BSS and 1619 t CO<sub>2</sub>e/year reduction of greenhouse gas emissions by the end of the project.