

BUILDING SMART CITIES TOGETHER

SHARINGCITIES



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D5.3 – REPLICATION MANUAL WORK PACKAGE 5

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Reference documents

This manual/ toolkit has been inspired by the following reference documents:

- MIXITIES peer review manual, Copyright: EUROCITIES
- CASCADE peer review methodology, Copyright: EUROCITIES
- The ImpleMentoring method, Copyright: EUROCITIES
- Self-assessment template, Copyright: GOJA Consulting for Environment and Sustainable Development
- Conducting interviews and workshops Copyright: GOJA Consulting for Environment and Sustainable Development

This document contains elements from the Replication training/workshop which has been organised by EUROCITIES on the 21-22 March, 2016 in Brussels where the six city leads were present.

PLAN FOR THIS DOCUMENT

Name	Action	Dates
EUROCITIES	Creation	28 March- 28 April
EUROCITIES	Internal review , update	April 28- 30

1. ABOUT THIS DOCUMENT

This document aims to give a general overview of general principles, builds common understanding about the techniques and methods to be used in support of replication. Most of these have been discussed and presented on the Replication training.

2. KEY TERMSⁱ

- **REPLICATION:** „ repeating successful smart city initiatives in another locale or replicating the same type of smart city in other cities”. Based on the same approach, „these replicas would be based on matching the aggregate characteristics (population, income distribution, local economic characteristics, socio-economic outcomes), and deliberately creating a similar strategic vision and portfolio of (locally relevant) initiatives”
- **SCALING:**” transforming a small initiative into something bigger. This may involve increasing the volumetric size of a given project by involving more stakeholders, funding, services and so on”. Alternatively, it can also mean „ increasing geographic footprint within the same city”. „ A more ambitious form of scaling involves changing the basis of an initiative from individual city projects to multi-city projects” (e.g. large scale projects). Furthermore, it also refers to „ offering data, services and technologies used to provision the smart city initiative on a national or pan-European scale”.
- **ECOSYSTEM SEEDING:**” is a specific form of scaling. It works by creating a diversified ecosystem of smart entities as a complex system linked at different levels”.

Replication is seen in this document even as a broader term than the definition referred above. In reality, replication depends on the „maturity” of the cities who decide to „ exchange practices” and be a subject of mutual learning. In this context, the smart city models and solutions can be technological but include also elements such as governance, stakeholders’ involvement or legal and regulatory context.

One of the lessons learnt is that in order to set basic lines for replication, the complexity of the city structure, decision- making system and success factors need to be analysed.

Those factorsⁱⁱ at least are related to

- **Vision:** What is planned to be achieved through the smart city initiative? How the planned projects fit into the general context or the city strategy?
- **People:** „ securing the participation of citizens and relevant stakeholders in the smart city” It can be organised on a top-down (e.g. announcement of project launch) or bottom-up (e.g. hackathons for data) way which should be chosen by the city well in advance as it might require lengthy consultation, engagement procedures, analytics and cross-departmental reorganisation of the work in the city. Commitment of high level politician (mayor) and CEOs is considered also to be a key to succeed.
- **Process:** This includes „ project management”, „ evaluation and benchmarks”, supporting „ methods”, „ knowledge management” and „ access to data”.

3. ABOUT THE MANUAL AND TOOLKIT

During the three year implementation period of the project and two years evaluation, cities perform activities in order to ensure that the developed smart city solutions in the 'lighthouses' will be replicated in the 'follower', or as we prefer to call them: 'fellow' cities. The six cities need therefore to cooperate and have a common approach for sharing knowledge and learning.

The manual is a general summary of techniques, methodologies which can help the cities to efficiently work together on the specific replication activities. The cities which will be later interested to replicate similar solutions might find it also useful for their own activity planning.

This manual has been complemented with a two- day Replication training/ workshop dedicated to the city leads and also a Replication strategy is prepared.

The knowledge shared and gathered during the peer learning visit will be included in a project replication toolkit. This toolkit will follow the same structure and will include examples on how cities are addressing key challenges in the different smart city areas.

PURPOSE OF THE REPLICATION WORK PACKAGE

The purpose of WP5 Replication is to outline **the tools and methods** with which follower / fellow cities will co-design, validate and implement solutions developed at the demonstration areas of London, Lisbon and Milan.

In particular:

- Follower cities are included at very early stage in the definition and design of the lighthouse projects;
- Follower cities have a strong role in the project to allow for the replication of given lighthouse projects according to their local conditions;
- Follower cities receive adequate support from other consortium partners to be well equipped to translate the lighthouse solutions into their local context;
- By the end of the project the follower cities are ready to replicate the lighthouse projects/solutions in their city;
- Lighthouse and follower cities cooperate efficiently;
- Knowledge, experience and results from replication activities in the follower cities are shared with non-partner cities (national scale-up cities and other European cities).

The replication will be facilitated and meant to happen in several contexts and different partnerships amongst the cities:

- Between the three 'lighthouse' and the three 'follower' / 'fellow' cities
- Between the three 'lighthouse' cities who will learn from one another
- Between the three 'lighthouse' / 'follower' / 'fellow' cities who will learn from one another
- Between the six partner cities and cities outside the consortium.

Replication is mainly about how we will achieve exploitation of solutions by a wide range of national and EU scale-up cities.

At the same time, replication is not limited to the technical solutions developed in relation to the measures (e.g. e-mobility) but is also about a broader context and insight into what works and what does not work in each city. There is a need to analyse in depth each of the solutions

and how, why those can work, and can be taken up in certain cities. The exercise therefore covers approaches applied for the technical smart city solutions but also and in particular those related to collaboration, engagement, legal, strategic and governance models.

The work package will gather relevant practices and solutions, different models to facilitate take-up and scale-up Sharing cities by other cities. Those other cities are primarily the ones who are in the consortium named as `follower` cities but also refers to cities outside of the consortium.

This work package is detailing the process by which follower cities are tightly connected into the Sharing Cities process and develop their replication strategies and competencies.

4. TYPE OF REPLICATION EXPECTED

Cities can work together and will cooperate at different stages when developing smart city solutions/ measures.

There are therefore three different phases where replication is planned.

- The first one is at the earliest possible stage, at the very beginning of the development of a solution, at the solution **design** phase. Referred as co-design phase.
- The second one is when the solution is being developed is to be **validated** whether that could be applied in a different context, that is at the validation phase.
- The third one is when the solution has been already designed and validated. It means that the solution is going to be developed at that new environment, at the **implementation** phase.

5. AREAS WHERE REPLICATION IS EXPECTED

There are several measures which have been identified to be implemented in the 'lighthouse' cities during the lifetime of the project.

Those which have been identified in the project are:

1. Citizen engagement
2. Building retrofit
3. Sustainable Energy Management Services (SEMS)
4. Shared e-mobility
5. e-car sharing
6. e-bike sharing
7. e-vehicle charging
8. smart parking
9. e-logistics
10. smart lamp posts
11. urban sharing platforms

Around these areas we expect that several 'learning tracks' will emerge which will be collected and discussed during the dedicated replication activities of the project.

6. KEY PRINCIPLES OF WORKING TOGETHER

The techniques and methodologies presented in this document and the success of the work requires that cities share common principles. Cities and experts in the different cities are „equals“, in related literature often referred as „peers“ or „mentors“. The position which they fulfil in the project, notably whether they are 'lighthouse' or 'fellow' should not create any hierarchy amongst the cities.

- **The key principles of cooperation amongst the cities:** Cities are working together in fellowship, mentoring each other, learning and sharing knowledge, being critical friends
- **Cities translate theory into practice:** how does sharing help co-creation, validation and implementation.
- **Key definitions and terms** – and what we mean by them (e.g. peer-learning visits, work shadowing, mentoring)
- **Develop skills, techniques and methods to ask the right questions:** how to be a coach/coached and mentor/mentee
- **Help fellow cities share their experiences, good practices, successes and challenges**
- **Knowledge and information sharing** (e.g. what to do and what not to do) in a multi-dimensional context (between 'lighthouse' and 'fellow' cities)

7. OVERVIEW OF PLANNED REPLICATION ACTIVITIES OF THE PROJECT

The cities need to perform the following preparatory steps for replication and key replication activities:

Timeline	In charge	Objectives
M4	'Fellow' cities	establish <i>cross-departmental working groups</i>
M5-M10	'Fellow' cities	establish <i>focus groups</i>
M8 D5.4	'Fellow' cities	<i>City baseline reports (3)</i>
M8-M12 D5.5	'Fellow' cities visiting a 'lighthouse' city	<i>Work shadowing visits , Peer-learning visits</i>
M12 D5.6	'Fellow' cities	<i>Replication roadmap (3)</i>
M13-M60	'Fellow' cities	<i>Multi-stakeholder engagement: citizens, city stakeholders</i>
	'Fellow' cities	<i>Implementation and funding stakeholders</i>

M40-M60 M24-48 D5.7	'Lighthouse' city visits 'fellow' city	<i>Mentoring visits (3)</i> <i>Alternatively:</i> <i>6 visits</i>
M48-M60		<i>Political level meetings between lighthouse and follower cities</i>
M48-M52		<i>Learning platform (part of website)</i>
M40-60		<i>Global Link City</i>
M24-60		<i>Dialogue with funders</i>
M24 M36 M48 M60		<i>Implementation annual reports and one progress report (EUROCITIES)</i>
M1-40		<i>Webinars (20)</i>
M40-48		<i>Scientific publications (2)</i>

8. GUIDANCE TO REPLICATION ACTIVITIES

This part of the document provides a general overview on the replication activities where methodologies or techniques are available to support the cities. There are also questions to be asked and processes to be followed by cities on specific type of replication activities. This guidance is going to be complemented with specific, tailor-made templates which will be designed by EURO CITIES as explained in the replication strategy.

8.1. GOVERNANCE OF SMART CITY PROJECTS

Cities need to change the way they are working and 'learning' from each other can support this necessary transformation process which is often requested when a city is implementing a project. For the 'fellow' cities knowing what kinds of governance models have been implemented in the 'lighthouse' cities in order to deliver smart city projects will be core when deciding about setting up their own new internal structure and when creating an external stakeholder engagement strategy (e.g. having or not a focus group and on which area).

8.2. CITY BASELINE REPORT/ SELF-ASSESSMENT REPORT

In the process of deciding on which areas the cities should more closely cooperate on, a well structured situation analysis based on existing strengths, weaknesses and interests of cooperation amongst the cities is a strong instrument.

The cities might ask the following questions:

CITY BASELINE REPORT

1. What should be the content and structure of the city baseline?
2. What type of information should be included about the city (e.g. buildings, digital infrastructure and mobility)?
3. Who are the people from the different services (or external stakeholder who could give

an input to this analysis)?

4. What is the most relevant experience to share?
5. What is the most relevant experience, theme, 'lessons learnt' I am interested in to hear from other cities?
6. What would be the realistic timeline and the procedure to be followed?

The city baseline report, should contain a self-assessment information (see guidelines in Annex 1) about the smart city readiness, maturity of the city which should include at least:

- ✓ **City context**
- ✓ **Strategic approach towards becoming a smart city**
- ✓ **Existing internal governance structures and collaboration with stakeholders**

It is crucial that cities ask questions before changing their internal organisation structures questions which have been identified below:

CROSS-DEPARTMENTAL WORKING GROUPS

- How to 'sell' SHARING CITIES in my own team? How will I position the project at management and expert levels?
- Who are the experts I need to bring together (ICT, buildings, mobility) and what would be the purpose of this group?
- How often should they meet and what kind of input shall we expect from them?
- How will they engage with the political level? What will make this group efficient and effective?
- Who are the external stakeholders to be definitely involved - and why?
- Any city has good experience to share?
- How have 'lighthouse cities' resolved this task?

FOCUS GROUPS

- What are the focus groups' most important tasks (e.g. needs, projects, potential

geographical areas of focus)?

- What are the focus groups' key success factors?
- What do the focus groups need to be able to deliver as per the expectations? Who and how should support their work? Who and when should be involved from the technical and political levels?
- How will these focus groups contribute to the design of the city baseline?
- What would be the realistic timeline and the procedure to be followed?

Cities from the project such as Warsaw and Milan have already developed a self-assessment report in cooperation with EUROCITIES on energy efficiency (in the context of the CASCADE project). The examples of other projects for the content of a city baseline report (Annex 3, Annex 4, and Annex 5) have been therefore shared with all cities. The structure and expected content of the self-assessment report in more detail is going to be based on a template which is developed by EUROCITIES and tested by the cities which had already experience in such an exercise. In order to support cities to meet their first task of setting up an internal governance structure, EUROCITIES has prepared a questionnaire (Annex 2) and organises webinars on this topic during the months of April and May. EUROCITIES has also included a session on internal governance to the Knowledge Society Forum agenda (27-29 April, 2016) where these matters have been discussed with the participation of other cities. (e.g. Vienna). These kinds of activities enhance the learning potential of the cities and facilitate early awareness-raising on the importance of replication.

8.3. REPLICATION ROADMAP

Each follower city will produce a replication roadmap (similar to Annex 12), where identified projects and identified areas/districts from that follower city will be described in details. `Fellow` cities will use this roadmap as their guidance document throughout the project lifetime. However, `follower` / `fellow` cities will have the opportunity to update this roadmap when necessary, depending on the evolution of the lighthouse projects and depending on the evolution of their own smart city strategy (e.g. change of political mandate).

8.4. VISITS

Visits are considered to be the best learning method so far which exists in a city-to city learning process.

Their success lies nevertheless in the efficiency of the preparation, selected methodology which closely relates to the criteria of the purpose of the visit which needs to be clear to all parties. The capturing of the knowledge is also key to have the opportunity to go back to certain questions and increase transferability of 'lessons learnt' to other cities in a similar context.

The face to face activities can be:

Interviews: conducted with a single person, either an internal or external stakeholder from the host city. Two peers ask a set of prepared questions that will lead into an open semi-structured discussion. These interviews should be timetabled for 50 minutes but may need to be scheduled for 90 minutes if the interviewee is a key actor or if an interpreter needs to be used.

Workshops are interviews with two or more stakeholders. Three or more peers prepare an introduction and ask a series of open questions to the local actors. Depending on the numbers participating, these questions are then discussed either in the whole group or in break out groups, with each break out group being led by a single peer. The ideal number in a break out group is four people with a maximum of six.

(Optional) Presentations and site visits can also be used to gather evidence. Three or more peers listen to a presentation of a key actor in the host city or are taken to a site visit to see how a specific measure or initiative is implemented. Questions are asked during or at the end of presentations to clarify issues. This is the easiest way of disseminating information to a group of experts; however, it is sometimes difficult to focus in detail.

The **type of visits** to be organised during the project duration:

8.4.1. PEER-LEARNING VISITS

These visits will be organised to the ‘lighthouse’ cities and for the better learning process (if it is possible) all three ‘fellow’ cities can participate at the same time. The peer-learning visit helps to deepen the peer’s understanding of the other city and usually last several days. Interviews and discussions give the visiting city the opportunity to ask constructive and probing questions for both cities benefit as this method allows both cities to see the issues from another perspective and come up with a solution, understanding policy choices and implications of decisions. These visits will last about one week per ‘lighthouse’ city.

The peer-learning visits apply the peer-learning methodology and programme which is designed for this kind of city-to city meetings.

The Sharing Cities peer-learning visits will be general and to enhance the learning potential amongst the cities, it will be organised in a way that each three ‘fellow’ cities can benefit from the visit to a ‘lighthouse’ and ask questions relevant to all of them.

Peer-learning methodology has been already developed in the context of other projects (Annex 13) and general elements can be immediately applied to this project as well.

This kind of city-to-city learning across national borders is facilitated through

- self-assessment within a single city,
- collecting baseline evidence for monitoring and evaluation, against which a city can then check progress (this will be an ongoing process)

The peer learning methodology is divided into a sequence of tasks and follows a clear schedule. Both the peer learning team and their host city need to follow this sequence carefully, because each of its steps prepares for the next one.

Standard information:

Before the peer learning visit: Tasks for the peers are to understand the city strengths, situation analysis and general data, benchmark, and to do a desk review of the host city’s self-assessment report. Tasks for the host city include gathering evidence, contacting people to be interviewed, making practical arrangements for the visit and writing the self-assessment report.

The peer learning visit: Tasks for peers include testing evidence through conducting interviews and workshops; collating and evaluating this evidence; contributing with their experiences during the ‘peer exchange seminar’, and making a preliminary presentation of findings to the host city.

After the peer learning visit: Tasks for the peer team include producing a feedback report which assesses the city’s performance against the benchmark, including specific recommendations for the host city and practical examples on how other cities are tackling similar problems. Both the host city and the peers will conduct an evaluation of their peer learning experience.

More details are provided in the referred peer learning methodology document (Annex 13).

8.4.2. WORK-SHADOWING VISITS

If next to the general peer learning visits, specific one city to one city learning is needed between two cities then in cooperation with EURO CITIES, the ‘lighthouse’ and the ‘fellow’ cities will organise work-shadowing visits. The idea is that one or maximum two experts per fellow city will go for a two day to maximum one week to shadow the work of the ‘lighthouse’ on a specific area.

These bilateral visits need to be planned but for instance could mean that Bordeaux goes to London, Burgas goes to Milan and Warsaw goes to Lisbon. Each fellow city will get a chance to visit one ‘lighthouse’ city and have this kind of deep learning experience.

It is a one city to one city visit and budget will be equally distributed amongst the visits. These visits can be organised on specific area of interest: e.g. smart parking.

Some of the basic questions to be answered would be:

- Key principles and the concept of work shadowing
- Which lighthouse or fellow city seems to be most relevant to my city’s case?
- What are the key areas where I would like to learn and share?
- What would be important to know before these visits?
- What are the expectations in terms of results from these visits?

- What are the objectives of these visits?
- What are the key dates and milestones during these visits?

8.4.3. MENTORING VISITS

`Follower`/`fellow` cities will host mentoring visits in their city. Those visits will take the form of a lighthouse city (~2-3 city experts) visiting a follower city as a mentor, to help them work out how the chosen measure/solution could be adapted/implemented in their own context. Mentoring visits allow cities to receive support and find solutions to specific projects and issues. It involves people from one lighthouse city (the mentor) giving advice during the visit to the host follower city. Mentors have roles similar to those of their counterparts in the host city. Based on a detailed request from the follower city, the core city will prepare and spend 3-5 days to advise and give feedback to city officials involved in the area of focus (technical experts, decision makers and local stakeholders). During the visit, mentors and mentees explore together -through interactive discussion - new ideas, options and solutions suitable for the `follower`/`fellow` city and assess transferability. Furthermore, they start drafting an action plan to be implemented by the `follower`/`fellow` city. The main outcome of the visits will be action plans, defining the next steps the `follower`/`fellow` needs to take. The aim of the visits is to support short-term wins and improvements, which can accelerate the follower city replication roadmap. We foresee 1 mentoring visit per follower per year, in other words three mentoring visits between Year 2 and 5 of the project.

EUROCITIES and many of their members have successfully tested this method in the framework of several EU-funded projects in the field of citizen engagement, energy efficiency, ICT, etc.

STANDARD GUIDANCE TO ALL ON ALL VISITS

- Before the visit

Content:

- Prepare self-assessment report
- Read the three 'lighthouse' cities self-assessments and strengths

- Define learning purpose, themes/ measures to work on together with a city
- +Select a city to cooperate with and the area of cooperation
- Decide what will be the type of replication to aim at: co-design, validation, implementation

Practical:

- Six weeks before the visit to prepare self-assessment report
- One month before the visit to prepare a desk review
- Decide on the purpose, clarify expectations, specify format and evaluation

The visit

- Learning team
- Duration of the visit: 3-5 days (include half day for the thematic leader and host city to prepare with the details of the visit right before the visit)
- Programme – make a draft together with EUROCITIES – starting at least 8 weeks before the actual visit
- Recording of information: capture facts etc.
- Interpreting evidence, comparing information
- Drawing conclusions, presenting recommendations on specific cooperation themes

8.5. EVENTS

8.5.1. PEER-LEARNING EVENTS

These events will be organised by EUROCITIES in one of the lighthouse and ‘follower’/ ‘fellow’ cities or country) ;(co-organised between at least one lighthouse and one fellow city) in support of replication and national scale-up activities. Depending on needs it can be replication workshop or conference (between year 2 and year 4). These peer-learning events will target a national audience of different cities. City representatives, business partners and private companies, academia, citizens’ organisations can also participate. These events will be

dedicated to peer-learning and highlight how replication is taking place, what are the challenges and key success factors in order to attract interested cities at national level (at least in the six countries) through workshops and demonstration activities.

8.5.2. COORDINATION OF ANNUAL SMART CITIES EVENT (POLITICAL LEVEL)

It has been planned to organise annual meetings **between lighthouse and follower cities at political level**. EUROCIITIES would organise this meeting each year during the EUROCIITIES Annual Conference (taking place each year in November) as this conference usually gathers between 70 to 100 mayors and deputy mayors and an important engagement tool to reach replication through political buy-in.

8.6. MEETINGS, WEBINARS, TRAININGS

EUROCIITIES and cities will co-develop a structured approach towards mapping those organisations who are relevant for replication and meeting with the, would be beneficial (e.g. funding) There will be also webinars organised on technical themes and also on bid writing, financing.

8.7. CAPACITY BUILDING AND KNOWLEDGE BASE

Documenting well the visits, meetings, and webinars, preparing minutes, specific summaries, filling out templates, preparing the technical and replication handbooks or making videos are all activities that are serving to capture knowledge and make sure that cities do not need to have to re-invent the wheel. The learning/ knowledge platform will also facilitate this process.

Information

List of documents attached to this document and which have been received by the cities as a follow-up of the replication training (end of March, 2016)

Annex 1: Self-assessment template, Methodology for self-assessment; Examples of the European Green Leaf 2015, City baseline report

Annex 2: Questionnaire(s) prepared by EUROCIITIES on cross-departmental working groups and focus groups; April 2016

Annex 3: CASCADE project City profile Warsaw

Annex 4: Sustainable development of Warsaw (report)

Annex 5: CASCADE project City profile Milan

Annex 6: Example of desk review- Desk review of city of Tampere

Annex 7: Jan DICTUS: Conducting interviews and workshops, March, 2016

Annex 8: Jan DICTUS: How to get maximum information from presentations and site visits, March, 2016

Annex 10: BSI Standards Publication, Smart cities – Guide to the role of the planning and development process October 2014 ISBN 978 0 580 85247 3

Annex 11: Example of ImpleMentoring Project videos from the visits, methodology

Annex 12: ImpleMentoring project: preparing the roadmap for implementation 2013-14, ACTION PLANNING PROFORMA, March 2013

Annex 13: CASCADE peer-learning methodology, EUROCITIES

Other materials has been shared with all city leads such as presentations by Jan DICTUS, Bernadett KOTELES-DEGRENDELE and Graham COLCLOUGH from the replication workshop form also a part of this training manual.

ⁱ European Parliament (2014). *Mapping smart cities in the EU*. Retrieved from <http://www.europarl.europa.eu/studies> on 4 March 2016

ⁱⁱ European Parliament (2014). *Mapping smart cities in the EU*. Retrieved from <http://www.europarl.europa.eu/studies> on 4 March 2015, p 76-77