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The Urban Lab of Europe !

# The CitiCAP (citizens' cap and trade co-created) Project Journal N° 4

*Project led by the City of Lahti*



**URBAN  
MOBILITY**



# The CitiCAP project

The **CitiCAP** project will experiment a Personal Carbon Trading (PCT) scheme to promote sustainable and low-carbon urban mobility by promoting and rewarding behavioral changes.

The PCT scheme will be co-designed in the framework of the Sustainable Urban Mobility Plan and through a participatory and user-led process. i Different experimental PCT models will be compared, in which citizens will be able to monitor their emission and budget their carbon use via an open mobility data platform. The urban mobility data gathered through the platform will be relevant for public authorities, as well as to foster sustainable mobility services and business opportunities. In parallel, a package of incentives will be put in place to encourage the use of the PCT scheme, and carbon-neutral bicycle highway lanes investments will be carried out in order to support low-carbon choices of transport.

## Partnership

- City of Lahti
- Lahti Region Development LADEC Ltd
- Lappeenranta University of Technology LUT
- Lahti University of Applied Sciences LUAS
- MOPRIM Ltd
- Good Sign Ltd
- Infotripla Ltd
- Mattersoft Ltd
- Future Dialog Ltd

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# 1. EXECUTIVE SUMMARY

This fourth edition of the CitiCAP (citizens' cap and trade co-created) Journal describes and analyzes the progress of the project in the last six months, from October 2019 to March 2020. During this period the progress of the project is in line with what was planned.

The content of this edition is based on meetings with the City of Lahti that took place over January to March 2020 during the Journal's timeframe. Section One accounts progress to date and details the launch and user feedback of the Personal Carbon Trading (PCT) scheme which lies at the core of CitiCAP. It also provides an update on some of the scheme's other core elements - the development of the Sustainable Urban Mobility Plan (SUMP) and cycle highway.

Section Two outlines the main implementation-related challenges faced by the project. Although progress is very good overall, attention is needed in some of the challenges that cut across all UIA projects but performance can be seen to be improving when compared with previous Journals. Finally, section Three looks at the key learning points and opportunities for scaling up of the project.

The next journal will pay further attention to the advancements of the implementation process, notably the development and lessons learned following the PCT launch.

## Project Summary

The goals of the CitiCAP project are to promote sustainable mobility, collect and make available digital data on mobility and develop new

transport services for citizens. The CitiCAP project will experiment with a PCT scheme for mobility as part of the Lahti region's transport policy and build a main cycle route based on smart solutions (Lahti City center – Apilakatu Street).

In practice, PCT means that citizens will benefit from reducing their own emissions from mobility. They could receive, for example, various benefits in the traffic environment, as well as incentives for service use. For instance, citizens whose mobility emissions remain below their personal quota levels could be offered cheaper public transport or bicycle maintenance services via an online marketplace. The aim is also to get employers involved in the CitiCAP project, as they can reward their employees for taking sustainable transport options.

The project seeks to build a new model for the SUMP process by integrating the traffic and spatial master planning processes into the same co-designed entity for the first time. Strategic investments in cycling will be included to increase its impacts and will include a smart main cycle route, as indicated above.

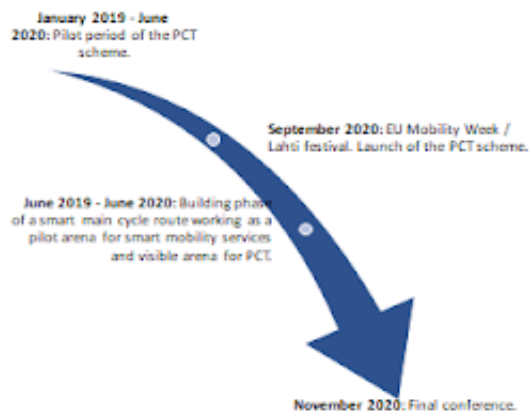
One of the basic requirements of CitiCAP is to collect comprehensive data on people's mobility choices. A light and replicable mobility data platform will be created to implement the PCT to serve as a planning tool for City mobility planners as well as an open access mobility data source for innovators.

## Key Milestones

Since the last journal, the following key milestones of the project are foreseen. This journal provides an update of implementation in terms of progress against these expected goals. Encouragingly, significant progress has been made in some of the project's key milestones which the City can be rightly proud of.

## Partners:

City of Lahti; 1 Business support organisation: Lahti Region Development LADEC Ltd; 2 Higher Education and Research Institutes: Lappeenranta University of Technology (LUT); Lahti University of Applied Sciences (LUAS); and SMEs: Moprim, Future Dialog, Good Sign, Infotripla and Mattersoft.



## 2. CitiCAP UPDATE

Journal Three identified the key areas that needed to be tackled in order to progress against the CitiCAP goals and milestones:

- How to change the mobility attitude and behaviour of citizens to promote the shift from private car use to sustainable mobility?
- How medium-size cities may develop their mobility environment: increase the use of sustainable mobility modes, enhance the multimodality and decrease CO<sub>2</sub> emissions,

while they cannot use all mass transport options that are available for larger cities?

- How to engage the local community to ensure sustainable urban mobility planning and service provision?

The following section will focus on how CitiCAP is helping the City progress against these areas and provides an update on the project's main elements: personal carbon trading, SUMP and Cycle SuperHighway.

### 2.1 Launch and feedback from the Personal Carbon Trading (PCT) app

The point of departure for the application is the emissions cap set for the City of Lahti, which limits how much the City is allowed to produce carbon emissions at an annual rate. The amount of the emissions cap determines how much allowances are allocated to urban mobility in the project. These allowances form a personal carbon budget for each participant during the test phase, based on an allocation criteria which was determined by a citizen's questionnaire undertaken during the early stages of the project. The main aim of the PCT is to increase the use of sustainable transport modes and encourage citizen's behaviour that favours low carbon transport options.

Users' allowances are defined as a monetary value that operates under the emissions trading system as a virtual currency. The objective of the participants is to remain within the carbon budget. If their budget is not reached, the savings can be exchanged for City services or for local business benefits on the app.

Testing of the carbon trading application began over late summer and the first results have started to come in. The Android version of the app was first tested by Lahti City employees and in September, the application was opened to a larger test for Lahti citizens, including approximately 600 test users.

Based on feedback from 49 users, the app gets praise for its trouble-free use and the fact that travel modes need not be personally entered into the application. Around 60% of users easily understood the purpose of the PCT as well as the application and around 60% of users found the application easy to use and around half found the PCT as an interesting policy development.

Importantly, around 70% of users said that the application made them think about their transport behaviour and its impact on the climate and around 30% of users said that it made them think about changing the way that they travel. As highlighted in Zoom-In One, the awareness of people's impact on the climate is a key

determinant to changing behaviour and mobility-based emissions. This can explain why many have switched from driving a private car to cycling or public transport during the test period thanks to this increased awareness which is fundamental to the success of the PCT scheme. Users also indicated that they either cycled more or used the car less often but some participants indicated that their travel behaviour remained the same as they had little access to alternative forms of transport and are therefore reliant on their private car. It was also noted that many car journeys tend to be quite short meaning that the emissions associated with them are quite low so it does not really provide an incentive to encourage a shift to public transport.

Since the application is still in the test phase, users have reported development needs. For example, around 80% of respondents experienced bugs or operational problems such as with travel mode recognition, but the functionality of the app has since been improved on the basis of feedback received. Battery wear has also been

raised as the app appears to be quite energy intensive. Users also complained about the need to correct travel journeys because in some bases it recognised the wrong mode of transport or it simply did not recognise a particular trip. Soon the app's iOS version will be brought into testing which will help to extend the scope of the PCT.

Overall half of all users rated the scheme a 7-8 out of 10 which highlights the success of the project with the user group. Since the user feedback, many of the older features have been updated and many of the problems fixed, notably the new mobility detection feature which is essential to the success of the PCT. The City now plans to undertake more aggressive digital marketing of the PCT which will culminate at the National Cycling Week in May. In addition, LUT plans to undertake a survey of mobility behaviour of around 1,000 citizens which will help to complement the user test experience which will help form the basis of future upgrades of the system and future City mobility plans.

## 2.2 Sustainable urban mobility plan

The app aims to enhance its SUMP process by providing the City with more comprehensive mobility data. The project seeks to build a new model by integrating the SUMP process with the City's traffic and spatial master planning process into the same co-designed entity (Lahti Direction).

The first phase of the SUMP process started in 2017 with an evaluation of the current state of mobility needs by undertaking numerous workshops in 2017-2018. On the back of this, a range of proposed actions were identified which can be found in table 1.

The strategic aim is to increase the share of sustainable transportation to 55% by 2030. It will do this by:

1. Improving the bicycle infrastructure;
2. Finding smarter and low-carbon solutions for public transportation; and

SUSTAINABLY GROWING LAHTI (Mobility management, improving walking and cycling)		
1	Cycling network 2030 (planning, investment, action plan)	★
2	Guidance on cycling routes	
3	Improving winter maintenance for waling and cycling	
4	Ensiapupaketti pyöräilyn pääreitistölle: päällysteet ja reunakivien madaltaminen/poisto	
5	Mobility management plans for schools	★
6	Paavolan campus mobility plan	
7	Mobility management plans for city personnel	★
8	Communication campaigns	★
9	Cycle point	★

LIVING LAHTI (Traffic safety)		
20	Action plan for traffic safety	

★ Strategic lighthouse project 2019+2020

★ Strategic lighthouse project 2020 add ons

CITY OF SERVICES (PT, travel chains, data)		
10	Trunk network	
11	Real time data on PT	
12	Alternative fuels /electrification 2030	★
13	Open data platform for mobility data	
14	City bike system	★
16	Park and ride service improvement for cars and bikes	

LIVABLE CITY CENTER LIISU 2030		
16	Sharing system for city owned cars	★
17	Reducing on street parking	
18	Re-direction the traffic flow in the city center	
19	Improving walkability of the city centre	

Table 1 - Identified actions in Lahti's SUMP

## 2.3 Increasing pedestrian-friendly spaces in Lahti's urban core.

The City is now in the process of finalising the plan and prioritising actions which they hope to complete in April so that full costings of actions can be identified, prioritised and implemented over the coming decade. It is envisaged that the final list will now be consulted with citizens which will take around six months to complete so that the process can be finalised by the City council by the end of the year.

### A Smart Bicycle Highway improves cycling conditions

The CitiCAP project will build a bicycle highway from the Lahti Travel Centre to Ajokatu (see table 2). The bike lane will be about 2.5 kilometres long. The purpose of the bicycle highway is to enable smooth and safe year-round cycling. The cycle path is clearly separated from other transport modes in order to create safe and comfortable cycling infrastructure that simultaneously improves walking conditions. When reaching Ajokatu, the cycle path connects with another new bike path from Renkomäki to

Uudenmaankatu Street. In total, around €1.6 million euros has been earmarked for this section of the UIA CitiCAP project.



Table 2 - CitiCAP smart bike route Ajokatu-Matkakeskus



Various smart solutions are being tested on the bicycle lane to improve the cycling experience. The CitiCAP project hosted an innovation competition to find innovative solutions to be implemented on the bicycle highway. The competition received ten high-quality proposals from four countries: England, Japan, Estonia and Finland. As a result smart, energy saving lightning, safe bicycle racks and info screens will be implemented on the bicycle highway.

The CitiCAP cycle highway is part of the City's cycling network plan 2030, which consists of about 40 kilometres of main and regional cycling routes. The main cycling routes provide smooth and fast access from the residential area to the City centre.

As mentioned in Journal 3, street plans had started to be consulted on in mid-2019 but there has been some resistance to the proposed plans as there would be a perceived impact to the local biodiversity. As such, it will be necessary to undertake a second hearing on the proposed plans. In addition, the City has undertaken a second round of procurement tendering. The aim is now to launch a City wide shared bike system in 2021 in order to encourage a further update of sustainable transport modes with construction planned for April 2020.

# 3. CitiCAP CHALLENGES

A number of specific challenges have been identified that cut across all UIA projects. The table below provides a traffic light analysis of what these are and some observations as to how the project fairs against them based on current and planned initiatives.

**TABLE 3: MAPPING CitiCAP AGAINST THE ESTABLISHED UIA CHALLENGES**

Challenge	Level	Observations
<b>1. Leadership for implementation</b>	<b>Low</b>	With the appointment of Lahti as the EU Green Capital for 2021 and the commitment to be carbon neutral, it has helped raise the profile of the project within the City meaning that leadership for implementation is considered to be strong. This will help to ensure collaboration across a range of City departments going ahead which will help ensure coordination of the SUMP and Master Plan process which will determine how the project will progress as it moves towards implementation of key aspects of the project as well as in the future.
<b>2. Public procurement</b>	<b>Low</b>	So far the project has very much focused on getting the PCT right in terms of the on-line architecture and policy side, notably since the City is starting to get feedback from users. As this is an EU funded project there have been no major procurement issues at this stage as everything has been budgeted for. The major issue is when the project looks to scale up with other cities because the question is how public organisations will produce a similar PCT model. It is not possible to use the Lahti platform in other cities because a one-size fits all approach will not work as it will need to meet local needs and standards but strong interest has been raised with other cities. This could impact the future development of the scheme but local businesses are now looking at future financial opportunities which may help overcome any future public procurement issues. It is envisaged that once the cycle superhighway moves towards the construction phase then public procurement issues could become more relevant but the risk level is regarded as being low especially as more aggressive marketing of the project is planned.

Challenge	Level	Observations
<p><b>3. Integrated cross-departmental working</b></p>	<p><b>Medium</b></p>	<p>Given the range of stakeholders involved and the need to engage a range of City departments, this remains challenging but as mentioned above, leadership for implementation is hoped to overcome this. The fact that all relevant City departments are involved in the development of the SUMP and that local and regional bus transport is carried out by Lahden seudun liikenne LSL (Lahti Region Transport) should help the integration of the SUMP with the wider regional spatial Master Plan. This will also help to ensure better integrated cross-departmental working going ahead.</p> <p>Now that the City is united by a shared vision to be carbon neutral, all aspects of the City will need to work towards the goal so it is hoped that this will encourage stronger cross-departmental working which will only be strengthened in 2021.</p>
<p><b>4. Adopting a participative approach</b></p>	<p><b>Low</b></p>	<p>High levels of participation are evident across stakeholder groups notably that around 600 test users are using the PCT and are now providing feedback.</p> <p>Participation is a core facet of the CitiCAP approach but the open stakeholder consultation process adopted has delayed implementation of plans, notably with the cycle superhighway. It is important that the co-creation element of the project is not lost which the Green Capital award can play an important role as it has the ability to engage citizens and businesses to propose and implement projects that can be complementary to the CitiCAP's key elements.</p>
<p><b>5. Monitoring and evaluation</b></p>	<p><b>Medium</b></p>	<p>With regards to the PCT, users have identified development needs such as travel mode recognition as this will affect the monitoring and evaluation of personal carbon budgets. There is still a lot of data that needs to be collected if there is to be a proper assessment of the success of the project. Given that more data should be captured as part of the on-going tests in 2020 - it is hoped that this will be appropriately addressed. This can help to track progress against the SUMP once it has been finalised and started to be implemented.</p>

Challenge	Level	Observations
6. Financial Sustainability	Medium	<p>The objective is to establish a joint venture to ensure long-term funding and upscaling. Progress has been made in identifying appropriate partners but the project will need to identify a future business case for a PCT if it is to be scaled up in Lahti but also in other cities.</p> <p>Businesses need to see the value that the PCT scheme can bring to them if they are to continue to invest in the scheme beyond CitiCAP. This is difficult as there is no traditional carbon (monetary) market attached to it but this is where the value of data can play an important role but as a limited amount has so far been generated there is a risk to the future financial sustainability to the project. This will be an important element of the testing phase in 2020 to fill this gap but as mentioned in section one, the City is now making good progress. Furthermore, with more aggressive marketing which will hopefully bring more test users, it will bring greater incentives for businesses to join and therefore increase the financial stability of the project.</p>
7. Communicating with target beneficiaries	Low	<p>By adopting a participative approach, significant communication and buy-in with citizens is ongoing but this has also delayed the process as stakeholder's concerns in aspects of the project need to be taken into account, notably in relation to the SUMP process and cycle highway.</p> <p>During each four-year cycle of the Lahti Direction process, the residents of the City have been invited to participate in the planning for example at workshops or via surveys. Lessons learned from this process will be assessed in 2020 so that this can feed into the future planning processes.</p> <p>A lot of communication with target users has started in relation to the PCT now that test users are providing feedback on their experience of using the app. It will be important that the City uses this opportunity to communicate with target beneficiaries. With a more aggressive marketing strategy planned this means this risk remains low.</p>
8. Upscaling	Low	<p>Fruitful ongoing discussions regarding scaling up has been had with a number of cities interested in following the Lahti model. Lahti will look to arrange follower City events and workshops during the year to share lessons learned and the key building blocks of how to develop a PCT scheme. This should hopefully bring the scale that the project aims to achieve and hopefully engage the wider business industry so that they can see the benefits of investing into such a scheme. It is envisaged that with greater focus on the City during the official PCT launch during the EU Mobility Week, the CitiCAP final conference at the end of the year and during 2021 as the EU Green Capital, it is therefore anticipated that further follower cities and business will want to upscale successful CitiCAP elements so the risk remains low.</p>

## 4. TAKE AWAY POINTS & CONCLUSIONS

An important triumph was that Moprim and the City of Lahti won the first award of the Gitex 2019 Smart City series which was held at the end of 2019. Gitex is the biggest technology exhibition in the Middle-East with over 100.000 yearly visitors, from over 140 countries, and over 5000 exhibitors. This will not only help to raise awareness of the PCT but also help to encourage other cities to adopt a similar approach, both within and outside of Europe.

Progress to date has been positive in all key areas of the project, notably the official launch and testing of the PCT. The next challenge will be to scale up the PCT and make significant progress on the cycle superhighway which has experienced some delays. A positive signal is that more businesses are engaging in the PCT which will help to reach out to even more citizens. As the final stages of project preparations come closer, the main focus will be to shift to implementation.

The CitiCAP project is an internationally significant example as governments start to look for new policy tools to reach the objectives of the Paris Climate Agreement as well as the EU Green Deal. As the first PCT ever in the mobility sector, it will be essential that this project is communicated beyond just the City. As such, the CitiCAP project should feature predominantly in the EcoCity Forum - which aims to identify new solutions to address personal carbon emissions and will be held in Lahti over 9-11 September, just before the EU Mobility Week. The forum will gather City decision makers; users and promoters of digital tools from around Europe and beyond which can accelerate the transition to 1.5-degree cities and citizens.

Over the next six months CitiCAP will really start to take off. The building phase of the smart main cycle route - working as a pilot arena for smart mobility services and visible arena for PCT - will also start shortly alongside the final stages of the SUMP. The next edition of the Journal will focus on this critical phase.

Urban Innovative Actions (UIA) is an Initiative of the European Union that provides urban areas throughout Europe with resources to test new and unproven solutions to address urban challenges. Based on article 8 of ERDF, the Initiative has a total ERDF budget of EUR 372 million for 2014-2020.

UIA projects will produce a wealth of knowledge stemming from the implementation of the innovative solutions for sustainable urban development that are of interest for city practitioners and stakeholders across the EU. This journal is a paper written by a UIA Expert that captures and disseminates the lessons learnt from the project implementation and the good practices identified. The journals will be structured around the main challenges of implementation identified and faced at local level by UIA projects. They will be published on a regular basis on the UIA website.



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