



EUROPEAN POLICY BRIEF



WECOUNT

Hybrid citizen engagement approaches to deliver citizen-led project results in times of a pandemic

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WECOUNT: LIVE TRAFFIC COUNTING BY CITIZENS

Citizen Science is gaining momentum across different fields, striving to contribute to citizen innovation and the democratisation of science. The value of citizen participation and science in transport is harnessing more recognition, however, the current ad-hoc engagement approaches can result in a lack of diversity and inclusivity. Can citizens directly contribute to achieving more sustainable transport systems? Can their actions and insights contribute to policy-making, allowing for a bottom-up, participatory approach, that reflects citizen expectations in urban mobility planning?

The [WeCount](#) project is the first European Citizen Science initiative to enable citizens to create a substantially better understanding of road traffic flows at local level. WeCount will gather greater insights into the impact of local road transport on issues such as air pollution, public health, and road safety. The project involves citizens in genuine co-created scientific enquiry, focusing on the use of accessible technology and tools to those interested, with the help of Citizen Science methods. It aims to place the citizens as key central players in the evidence gathering of local road transport systems, collecting data at an unprecedented level of detail by co-(re)designing existing sensors and opening up a new data source for local policy-makers and the transport policy research community to build better local transport systems together. The main objectives are:

- WeCount will advance citizens (and broader scientific) knowledge on traffic counting, transport management and related impacts
- WeCount will establish a durable framework for Citizen Science traffic counting and related impacts
- WeCount will lower the technology threshold to reach a more diverse audience ensuring broader citizen inclusiveness, by providing technological support to those involved,
- WeCount will demonstrate the diverse potential applications, in six use cases, to tackle different issues related to local road traffic
- WeCount will achieve meaningful research and local policy change, as a direct result of the evidence collected from the Citizen Science activities
- WeCount will contribute to the vision of '15 Minutes Cities' adopted as a guiding principle across several local authorities worldwide, by providing new knowledge to re-think our urban design.

WeCount offers citizens the mechanisms to generate evidence and utilise tools to quantify local transport mix; understand and challenge mobility behaviour; proactively lead local transport discourse and **participate in co-designing traffic policy**. WeCount empowers citizens to evolve from citizen scientists to citizen advocates and local champions that can influence several intractable societal and environmental challenges. WeCount uses innovative low cost, automated, road traffic counting sensors (the [Telraam](#) sensor) and multi-stakeholder engagement mechanisms (workshops and online interactions) across **six case study cities: Leuven (BE), Madrid/Barcelona (ES), Ljubljana (SI), Dublin (IE) and Cardiff (UK)**.

The primary challenge centres around what kind of Citizen Science methodologies can and should be used, ensuring quality and validation of the produced outcomes. The selection of participants, the different stages of interaction, the iterative process of knowledge sharing and learning, and even ensuring citizens remain engaged and motivated in the process will all be influenced by the methodologies selected.

The COVID-19 pandemic poses challenges to Citizen Science engagement approaches but also showcases the potential of online/hybrid approaches to reach a bigger audience, leading by example to the reduction of trips and carbon emissions, using an in-house solution ensuring that citizens engage in science while being safe. Thus, this Policy Brief builds upon the Citizen Science approach and methodology employed by WeCount, its shift from face-to-face to hybrid interactions and how the citizen-science and concept can help to tackle challenges brought about by COVID-19.

WHAT IS THE WECount CONCEPT AND METHODOLOGY?

The Telraam sensor and platform are essential to achieve WeCount's ambitions. Telraam was developed by Transport and Mobility Leuven, which used to rely on traffic counting data acquired from third parties using expensive counting techniques to generate sensible policy advice. The Telraam pilot launched in April 2019 offers a proof-of-concept upon which WeCount has been working on. Telraam is a combination of a Raspberry Pi microcomputer, sensors and a low-resolution camera and a platform to collect, process and visualise the data. The device is mounted on the inside of an upper-floor window with a view over the street. To send the traffic count data straight to the central database, the device needs a continuous Wi-Fi connection. Since the device is electrically powered, it also needs a power outlet within reach.

To achieve these goals, WeCount uses a novel methodological framework that results from the combination and adaptation of two established models for Citizen Science and citizen sensing: "The Bristol Approach"¹ and the "Making Sense Framework"², which have been developed by Ideas for Change, and stakeholders across Europe, and have been successfully used in other participatory projects. The methodology is based on a five-step approach:

- 1. Phase 1. Scoping and Community Building:** research in each city to identify urban transport matters that are of concern to citizens, while undertaking community-building efforts, to ensure that an engaged multi-stakeholder group is formed.
- 2. Phase 2. Co-designing:** Phase two is about collectively deciding on the project goals, on sensing strategies and on protocols for collecting data.
- 3. Phase 3. Data Collection:** Researchers and experts will actively support the process of data collection and sensor calibration to ensure the rigour of the intervention.
- 4. Phase 4. Data Analysis and Awareness:** In this phase, the data is analysed and discussed among stakeholders.
- 5. Phase 5. Reflection and Legacy:** This phase spans throughout the entire process of co-creation and involves reflecting on the intervention, documenting tools and methods and assessing if and how the goals were achieved.

¹ Balestrini, Mara, et al. "A city in common: a framework to orchestrate large-scale citizen engagement around urban issues." Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems. ACM, 2017.

² Making Sense 2018. Citizen Sensing: A Toolkit. Making Sense Online Publication. Retrieved February 17, 2018 from http://making-sense.eu/publication_categories/toolkit/

In WeCount, we empower citizens to develop evidence-led interventions into the political discourse on civic and environmental issues. By putting citizens at the heart of the innovation process, the project seeks to overcome existing technological and societal silos so that citizens can champion a new perspective on road transport that takes into account their concerns in pursuit of a better quality of life and more equitable, healthy futures. The project supports citizens in developing knowledge and insights: scientific enquiry, autonomous sensing, transport and mobility research, environmental management, data science, social science, social equity, citizen advocacy and in evidence-led policy-making.

Designed originally for face-to-face interactions, WeCount had to adapt its approach considering COVID-19. Working closely with each case study team, the project now employs a more tailored, hybridised format, mostly consisting of online engagements with some smaller, intimate meetings when safe and necessary to do so. There are numerous online engagement tools available and the team is being trained in how to use them.

In Leuven, the WeCount case study is split into five sub-pilots, each with 40-50 participants and with Citizen Science activities spread over a longer period compared to our initial plan of a concentrated set of workshops. Each of these sub-pilots seeks to address a specific transport policy challenge e.g. devices for the city centre will be used for continuous monitoring, while devices in Kessel-lo & Wilsele (sub-municipalities of Leuven) will be used to monitor the impact of changes to the Leuven circulation plan. The monitoring systems for the city centre will in part also be used to monitor COVID-impact as findings can be compared to pre-COVID traffic counting using classic techniques. There were three types of interactions. Firstly, there were brief corona-proof physical interactions to distribute the equipment during a short period at a central point in the city, followed by online sessions in which the installation process was explained. Lastly, online Q&A sessions were organised to deal with potential installation issues that citizens might have experienced.

In Spain, the WeCount intervention was initially designed around several face-to-face and hands-on interactions with citizens across all phases of the research. The COVID-19 pandemic, while limiting physical interactions, offered new opportunities for meaningfully engaging citizens in WeCount. Like the Leuven case, the narrative of the intervention was enriched by the possibility of comparing traffic and mobility before, during, and, hopefully, after the lockdown measures adopted in the country. A pre-pilot was conducted including approximately 30 users, encompassing significant diversity regarding age, gender, skills, and interests. Initial data seems to show a positive uptake, both in terms of the number of people involved, but also in the diversity of their profiles in gender and age. The current setting and hybrid approach seem to give citizens more flexibility which can result in higher engagement and/or attractiveness. However, the shift to online interactions might also entail a challenge in targeting lower income groups. The pre-pilot was conducted in Barcelona and Madrid, through three participatory workshops each, carried out online. These focused on three main dimensions: the first workshop explored the mobility issue, including an introduction to WeCount, traffic counting techniques, together with assessing how participants perceive their ideal mobility and neighbourhoods. The second workshop focused on installing the sensor, with a technical explanation and step-by-step approach with the participants. The third workshop focused on the analysis of the preliminary data, gathering general feedback from the participants and their experiences. This served as a great opportunity to develop and test resources for smooth online interactions. The learning curve from this action is being leveraged for the larger roll-out planned for the end of September 2020. Finally, significant partnerships have been established which will ensure a wider reach, also among other stakeholder groups or citizens with low socio-economic background.

All in all, as shown by the description of the methodology described above, WeCount's concept proved resilient and easily adaptable during times of unprecedented hardship and limited mobility. In a moment when citizen's ecosystems were reduced to their houses and most of the economic and social activity came to a halt, WeCount's concept allowed citizen-lead research to continue being carried out, from the safety and comfort of the individual's homes.

The following policy implications and recommendations derive from the research carried out in WeCount and from the preliminary results of the Leuven and Spanish experience. The recommendations therein will be elaborated further, once these case studies are at a more advanced level of development and the additional case studies in Cardiff, Dublin and Ljubljana are underway.

- **Hybrid strategies with limited face-to-face interaction in combination with online events can replace classical citizen engagement activities such as workshops.**
 - Spreading the engagement activities and choosing for a hybrid approach allows for more engagement activities with fewer attendees, which leads to a stronger involvement of the participants. Citizens who may otherwise be reluctant to do so, will now more easily accept digital engagement formats, providing an opportunity to WeCount and Citizen Science projects.
- **WeCount's potential to assist in providing data for urban mobility planning, particularly at the local level, is highlighted by the COVID-19 pandemic:**
 - The data gathered during the lockdown period, particularly in the Belgium scenario where more sensors were already up and running, managed to clearly show the substantial changes that came along with the lockdown, allowing to inform policy-makers on the traffic counting data and mobility patterns before, during, and after the lockdown. This information is of extreme importance, particularly in assisting the planning of urban mobility, considering that citizen's mobility patterns were and will continue to be influenced by their concerns about safety (i.e. less usage of public transport, more uptake of cycling, etc.).
 - In May 2020, the European Commission published the communication ["COVID-19: Guidelines on the progressive restoration of transport services and connectivity"](#). This document proposed a strategy for restoring transport services, as Member States recovered from the outbreak of the coronavirus and gradually lifted their lockdowns. WeCount's concept can, at local level, assist governments in better adapting overall EU-level strategies and proposed solutions, to their specific mobility setting.
- **Citizen Science should be one of the cornerstones behind co-creation processes both for policy-making and research and innovation initiatives.**
 - EU funded proposals of Research and Innovation Programmes (i.e. Horizon Europe), aim to pay special attention to co-creation processes and designs. This will entail a participatory policy-making and research and innovation development that is a result of a process conducted with people, rather than on behalf of people.
- **Citizen Science engagement methodologies can serve as an additional tool to assist the development of Sustainable Urban Mobility Plans (SUMPs), for a more inclusive, citizen-centred, policy-making process.**
 - Local government and public transport authorities understand the importance of bottom-up policymaking. The design of SUMPS in different European cities normally accounts for a dimension of citizen engagement, to better inform the process of policy design.
 - Citizen Science and the methodology developed and employed in WeCount can serve as an additional tool to actively involve citizens in this process, allowing them to identify what the local urban mobility priorities are, contribute to their co-design, data collection and analysis. An overall sense of ownership in the creation process of policies leads to higher acceptance of measures, while ensuring that they are closer to citizen's needs and expectations.

The next WeCount Policy Brief will focus more specifically on overall project experience and the data gathered from the Leuven and Madrid/Barcelona cases, as well as of that resulting from the Cardiff, Ljubljana and Dublin pilots. By then the project will have substantial data, allowing for more specific recommendations to be made on the topics related to each pilot (i.e. air-quality and traffic planning).

PROJECT INFORMATION

PROJECT NAME	WeCount (Citizens Observing Urban Transport)
COORDINATOR	Griet De Ceuster, Transport & Mobility Leuven. griet.deceuster@tmleuven.be
CONSORTIUM	Transport & Mobility Leuven - Leuven, Belgium POLIS Network – Brussels, Belgium MobiEl21 - Leuven, Belgium University of the West of England – Bristol, United Kingdom University College Dublin – Dublin, Republic of Ireland Ideas for Change – Madrid, Spain
FUNDING SCHEME	Horizon 2020 Framework Programme for Research and Innovation (2014-2020), SwafS-15-2018-2019 Exploring and supporting citizen science, grant agreement No. 872743.
DURATION	December 2019 – November 2021 (24 months)
BUDGET	EU contribution : 1 957 897,5 €.
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FURTHER READING	Europe-wide traffic survey to recruit 'citizen scientists' , article on BBC World News The People have spoken , article on the Thinking Cities Magazine Citizen science exposes mobility impact of corona , article on the NM Magazine (in Dutch) Neighbours will place sensors on their windows to improve mobility and air quality , articles on LaVanguardia (in Spanish)