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Project: 101138405 — Net4Cities

# **Deliverable 1.1**

## **Co-Creation Guidelines**



## Net4Cities Consortium



## Imprint

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## Executive Summary

Net4Cities aims to facilitate the realization of the EU Green Deal's Zero Pollution Action Plan by advancing air and noise pollution monitoring infrastructure and providing evidence-based support for implementing effective transport policies. Co-creation is a core element of the approach taken in this project to achieve this goal. A basic definition of co-creation describes it as an inherently experimental, collaborative, and open-ended engagement effort between experts and relevant stakeholders seeking to achieve the co-production of knowledge. While co-creation is typically based on this flexibility, Net4Cities will follow a more goal-oriented approach to achieve and deliver its predefined outcomes, objectives, and deliverables, as outlined in the Grant Agreement. As such, the co-creative approach in Net4Cities will proceed within pre-defined boundaries, where the content of the blank spaces in-between will be co-designed, co-produced, and co-disseminated with stakeholders in each of the 11 partner cities.

Many key elements to co-creation have been identified both in previous EU co-creation projects (e.g. RICHES, COACCH) and through the experiences of Net4Cities Consortium members. These include: 1) the importance of effective communication, 2) the need to emphasize and foster collective learning, and 3) defining clear roles and responsibilities. Furthermore, expectations for the engagement must be clarified, thereby providing transparency in the approach and establishing a reciprocal understanding of it. These core principles will underline the Net4Cities co-creative approach.

This structured approach will be divided into three phases: 1) Joint Framing and Agenda Setting, 2) Co-creation of Knowledge, and 3) Uptake, Continuity, and Exploitation. Phase 1 establishes the engagement framework and clarifies the balance between predefined actions and flexible co-creation. Phase 2 builds on this to establish a roadmap that will guide the core scientific efforts of the project, including regular communication and feedback between the Net4Cities Consortium and local city stakeholders. Phase 3 focuses on delivering final products and their uptake beyond project completion. An example is provided to highlight key details of the Net4Cities co-creative approach.

Given that eleven cities will engage with differing levels of interest and involvement with the project, a core element of Net4Cities lies in harmonizing approaches across the heterogeneous partners. This harmonization will allow Consortium members to collectively learn from one another and improve support structures within the project. Simple elements of harmonization will include defining joint timelines for the engagement and creating information sheets, slide decks, and evaluation templates that can be used for engagement in each city.

With these guidelines, the Net4Cities project aims to establish the framework of co-creative engagement with stakeholders in partner cities. This approach will serve as the foundation of the project, ensuring the work done is valuable to stakeholders, science, and European cities.

## Purpose of this document

The Co-Creation Guidelines will serve as the backbone of all stakeholder engagement efforts for the duration of the Net4Cities project. The guidelines will also lay out concrete steps for how this engagement should proceed, what to expect at each step in the process, and provide a practical example. The Net4Cities co-creative approach to stakeholder engagement outlined in this document is informed by practical experiences in co-creation from many partners in the Consortium. Future results, outcomes, and deliverables of Net4Cities will be guided by the process outlined here.

### Goals of the Net4Cities Project

During the project, air and noise pollution monitoring infrastructure will be advanced and expanded in 11 European cities, including transportation hubs such as airports and ports, to conform with upcoming Directives and provide data for health impact assessments.

To advance the monitoring and facilitate the realization of the EU zero pollution vision by 2050 and the implementation of European Cities' Zero Pollution Action Plans, Net4Cities will apply a co-creative approach with stakeholders.

The main project results will be consolidated in the Net4Cities Studio which will provide (1) a web-based interface with real-time maps and information to raise awareness, and (2) support tools for policy decisions that will provide guidance for operationalization and recommendations of solutions that consider innovative technologies such as dynamic traffic management systems and inclusion of nature-based solutions in overarching policy designs.

### Goals of the Co-Creation Guidelines

**To provide the framework for the co-creative process** to be established in the Net4Cities project. This will be carried out locally in 11 partner cities but will be coordinated centrally so that the parallel processes are connected and harmonized to the extent possible. This guidebook is based on existing literature, the RIFS approach, the collective experience of all partners in the Consortium, and best practices from other projects/practitioners to provide guidelines for carrying out this approach in the project.

**To provide guidelines specific to Net4Cities goals.** Since there are many different approaches, these guidelines are refined towards the needs of this project and facilitate effective communication between stakeholders and researchers.

**To provide examples of the process,** including: methods that should be used to promote collaboration, structuring of activities, identification of participants, planning, discussion of critical topics, etc.

## Theoretical Background and Best Practices

### Theory of Co-Creation

Despite the increasing popularity of co-creation, particularly with regards to participatory processes and transdisciplinary research, no consensus exists on its definition or boundaries. Some approaches see it as open-ended, detached from pre-defined, expected outcomes, and fully collaborative from start to finish, while others put it within narrower frames. To navigate co-creation-related terms, pragmatic orientation can be found in definitions popularized by Mauser et al. (2013) as they construct a mutual relationship between **co-design, co-production, and co-dissemination**. These ‘co-’ terms form a rough outline of the methodological approach to co-creation:

As a first step, **co-design** brings about the research agenda. Through integrating stakeholders and decision-makers from the relevant societal sectors and science, a viable issue and research design is identified and articulated.

As a second step, a **co-production** of knowledge, participating scientists conduct research and stakeholders contribute insights in the course of a continuous exchange.

As a third step, a **co-dissemination** of results refers to different kinds of activities aimed at the communication of outcomes to a large spectrum of societal groups.

### Co-Creation in Net4Cities

Co-creation is a key component of the research methodology in the Net4Cities Project. This approach is applied in specified contexts within the scope set by the Grant Agreement to help arrive at its envisaged goals and products.

For instance, the planned creation of a Net4Cities Studio, which will host outputs and policy-relevant findings and tools useful for stakeholders in partner cities, has already been identified as a main product of the project. However, its contents are not yet defined, but rather will be amenable to the co-creative approach, and are planned to be co-designed, co-produced, and co-disseminated with stakeholders in partner cities. This adaptive approach will apply to the expansion of air and noise pollution monitoring infrastructure, which will be co-designed with partner city authorities, as well as to the co-design of targeted measurement campaigns in some cities, as further examples.

Therefore, the Net4Cities co-creative approach will exist within pre-defined boundaries, within which the activities and outcomes will be co-designed, co-produced, and co-disseminated with stakeholders in each partner city. In other words, it integrates the elements of openness and disruptiveness of co-creation with the goals of the Net4Cities project.

**“The essence of co-creation is to engage, but render oneself incapable of completely controlling or steering the ensuing processes. Co-creation is not pragmatic in a traditional, goal-oriented sense, it is an experimental collaborative effort. Practicing co-creation requires an openness that accepts ambiguity, uncertainty, as well as the ability to work towards something of which we cannot be sure at the outset. This requires becoming more comfortable with detachment from the expectation of certain outcomes.”**

– GFZ-RIFS Co-Creation Team

## Key Takeaways from Previous EU Co-Creation Projects

- **Clarify expectations.** Researchers can be unprepared for the scope of stakeholder engagement in a co-creation project, while stakeholders may have unrealistic expectations of the outputs. **Implicit assumptions should be made explicit and discussed regularly** to manage expectations (McGlade et al., 2022).
- A **project roadmap** (or some other visual guiding element) can be useful in communicating with stakeholders to provide orientation, guide, and mark progress. Co-designing this with project stakeholders can help **develop a shared sense of direction for the project** (McGlade et al., 2022).
- **Establish a core team of dedicated “relationship managers”** that serve as direct access points for stakeholders. Involving multiple people from each organization can reduce communication bottlenecks and ensure that needs, updates, and challenges are effectively communicated (McGlade et al., 2022).
- **Do not underestimate communication.** Making efforts to share interim results regularly and keeping open channels for communication is important in maintaining positive relationships with stakeholders (McGlade et al., 2022).
- A **strategy** should be in place for what happens **after the co-creation activities finish** (van Westen and van Dijk, 2015).
- **Address internal communication early** and include people from all levels of an organization (van Westen and van Dijk, 2015).
- Co-creation is an open process. It is not just about gaining information, **it should have a reciprocal value for all participants**. It is important to make people feel free to contribute, and make sure you listen; **be flexible enough to incorporate new insights** (van Westen and van Dijk, 2015).
- **Different levels of expertise are valuable in co-creation**; participants build a relationship where a free exchange of ideas and values is vital. The different cases all stress the importance of **finding a balance between professional expertise and the expertise that participants bring to the table**. This balance is related to a fear within the institutions of "losing control" when rather it should be about leveling certain types of control for all parties to feel genuine ownership (van Westen and van Dijk, 2015).

## Key Elements of Co-Creation in Net4Cities

### *Roles and Responsibility*

- Division of roles and responsibilities will be discussed and defined throughout the duration of the project. It may be necessary for rotation in roles and responsibilities as the project progresses, but **the key is that these roles are explicitly defined**. Partners in the Consortium will likely have multiple roles in the co-creative process. Possible roles include:
  - **Moderators** – managing meetings and discussions during stakeholder engagement.
  - **Points of contact** – managing communication outside of stakeholder events.
  - **Researchers** – acting as experts on the subject matter during and outside of stakeholder events; managing content within meetings.
  - **Evaluators** – reporting back on the results of meetings externally with stakeholders and internally with the Net4Cities Consortium.
- Defining the roles of stakeholders from the start of the collaboration will be crucial. Ensuring that **points of contact are defined, and participants for formal and informal discussions are clarified** will be of significant importance in managing engagement.
- When individuals have multiple roles in the engagement, they will be made aware of the importance of recognizing this fact and **encouraged to switch between them as appropriate** (e.g. researcher and moderator). In cases where there are individuals can act solely in unique roles, **these will be clarified prior to any engagement**.
- Important to consider are the **power dynamics and perceived hierarchy** during collaboration, for which the moderators often receive perceived responsibility e.g., moderating conflict, managing opinions, etc. Many participants will look to the moderator to act in their role to efficiently manage the engagement.

### *Collective Learning*

- To ensure that lessons learned from each city are shared across all partners, **Net4Cities will strive to create fora for exchange**, as well as rigorously document experiences and results from workshops. These will serve to **foster mutual support amongst partners** in the Consortium and encourage continued investment in the engagement itself.
- Prior to each set of local workshops, partners in the Consortium that are ‘responsible’ for a city will meet to **discuss the common goals and objectives**. After each set of local workshops, the same partners will meet to discuss the outcomes of the meeting, but also the co-creative process itself, while considering how to adjust it accordingly for future workshops to address any possible issues.

### *Communication*

- Net4Cities will strive for **transparency in communication** internally amongst partners in the Consortium, but also with external partners and stakeholders. Included in this transparency will be the clarification of boundaries and expectations of the project, including **open and honest discussions on desired versus actual products and results** the project can deliver.
- **Avoid unnecessary jargon**. This is key to ensuring mutual understanding of goals, outcomes, expectations, and the collaborative process. In other words, **terminology must be accessible** to make communication with stakeholders **understandable and coherent**.
- Partners will be strongly encouraged to **use integrative, respectful, and culturally sensitive language during engagement**. English is the project’s lingua franca internally and with external partners, but where possible, documents will be translated into local languages to grant accessibility and uphold transparent communication for all participants.

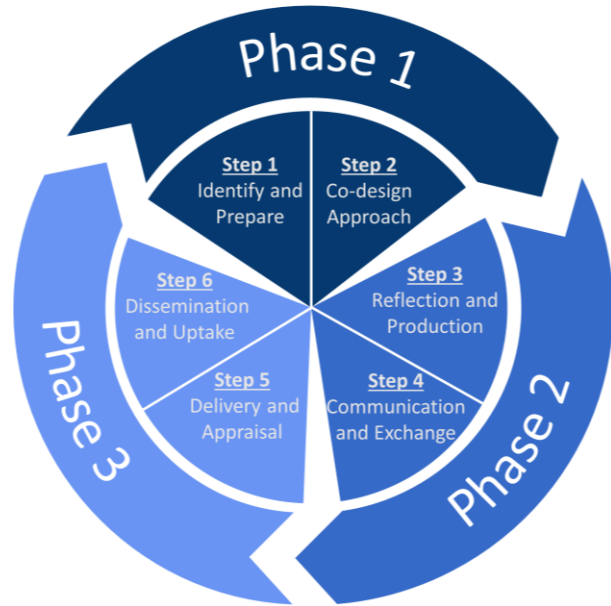
# Net4Cities Co-Creative Approach

## Overview

As described previously, the Net4Cities co-creative approach is inherently constrained by the nature of the project. Partners in the Consortium are contractually obligated to fulfill the terms of the Grant and Consortium Agreements and therefore must deliver on promised products and outcomes. As such, Net4Cities cannot embrace all aspects of an open-ended co-creation process but will instead work with a tailored approach to match the project’s objectives with stakeholder involvement through co-creation as best as possible.

To enable co-creative engagement, clear boundaries will be defined with partners in local cities and with external stakeholders. Promised results and methodological approaches will be made clear from the start of all engagement, to establish clear expectations for the project and its potential contributions. **By defining the framework in which co-creation can occur, these co-creation guidelines will establish conditions and goals for each step in the co-creative process.** The project as a whole is designed to fit into the three Phases of co-creation outlined here. However, specific tasks and actions (e.g., logistics of site selection, the Net4Cities Studio) will also utilize these three Phases of co-creative engagement.

To accomplish that, Net4Cities will first outline key promised outcomes of the project, differentiating between the rigidity of products that must be delivered and the flexibility in their content and methodological approach. This will form the basis of **Phase 1** (year 1) of the co-creative approach, in which workshops and bilateral discussions with local partners and stakeholders will focus on establishing the framework for the engagement and scientific work going forward.

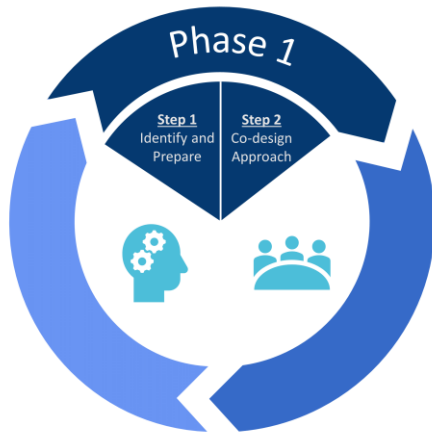


Upon reflection on these initial discussions, in **Phase 2** (years 2-3), the actions of the project will be carried out by the partners of the Net4Cities Consortium. Where appropriate, the work will be carried out in cooperation with local partners and stakeholders. Throughout Phase 2, regular communication between the Consortium and local partners will ensure that expectations are being met and potential changes that should be made to the research approach are informed.

Finally, in **Phase 3** (year 4), results and products will be delivered to and appraised by local partners and stakeholders. Dissemination to external stakeholders will serve to increase the uptake and exploitation of project results beyond the scope of local partner cities. This will include public presentation of the results in partner cities in conjunction with local stakeholders. Particular attention will be paid to the selection of stakeholders to be invited to these events, with sensitivity for ensuring a gender balance amongst participants.

**Table 1.** Net4Cities Outcomes, planned results, and flexible approach.

Outcomes	Planned Results (Rigid)	Approach (Flexible)
<p><b>1.</b> Evidence-based, <b>tailored policy solutions</b> for effective air and noise pollution reduction plans.</p>	<ul style="list-style-type: none"> <li>– Workshops and webinars with stakeholders.</li> <li>– Engagement with local authorities, port and airport representatives, and citizen organizations.</li> <li>– Delivery of policy solutions tailored to each partner city.</li> </ul>	<ul style="list-style-type: none"> <li>– Content development, approach, and participation in workshops and webinars.</li> <li>– Format of engagement beyond workshops and webinars.</li> <li>– Focus, extent, and level of detail of policy solutions in each partner city.</li> </ul>
<p><b>2.</b> The <b>next generation of advanced monitoring networks</b> for transport-related air and noise pollution (exhaust and non-exhaust).</p>	<ul style="list-style-type: none"> <li>– Compiled, publicly available datasets including regulated pollutants, new and emerging pollutants, noise pollution, and traffic activity data.</li> <li>– Production of real-time maps of air and noise pollution with source attribution.</li> </ul>	<ul style="list-style-type: none"> <li>– Location of instruments and sensors installed in partner cities.</li> <li>– Amount and extent of data collected in each partner city during and beyond the life of the project.</li> <li>– Format of data for use in decision-support tools, policy decisions, and health studies.</li> </ul>
<p><b>3.</b> <b>Generation of data on (emerging) air pollutants and noise</b> in diverse European cities, including the improvement of emissions inventories.</p>	<ul style="list-style-type: none"> <li>– Choice of which new and emerging pollutants will be monitored (UFP, NH<sub>3</sub>, N<sub>2</sub>O, Noise).</li> <li>– Availability of the real-time maps in the Net4Cities Studio.</li> <li>– Fusion of measuring and modelling approaches.</li> </ul>	<ul style="list-style-type: none"> <li>– Delivery formats and analytical approach of the source apportionment outputs and the real-time monitoring data.</li> <li>– Content, visual style, and user-friendliness of the real-time maps in the Net4Cities Studio.</li> <li>– Extent and number of maps available in Net4Cities Studio.</li> </ul>
<p><b>4.</b> <b>Consolidated databases of measurements</b> at urban and national level, including transport-related activity data.</p>	<ul style="list-style-type: none"> <li>– Updated emission inventories and expanded fleet monitoring, including activity data.</li> <li>– Transport-related air and noise emissions and identification of non-compliant sources assessed.</li> <li>– Comprehensive information on pollution from transport sources in target cities contributing to local and national level databases provided.</li> </ul>	<ul style="list-style-type: none"> <li>– How and where to apply the fleet monitoring (e.g. remote sensing) in target cities, and how to disseminate this information to other EU cities.</li> <li>– Which transport-related sources to focus on in each city and how to communicate results to stakeholders and the general public.</li> <li>– Content and scope of information provided for policy support on transport pollution (e.g. for enforcement, for reduction of health impacts) and selection of databases to contribute to.</li> </ul>
<p><b>5.</b> <b>The Net4Cities Studio</b>, including real-time graphical visualization of air and noise pollution, guidance on monitoring network design for emerging pollutants, and policy support tools.</p>	<ul style="list-style-type: none"> <li>– Net4Cities Studio products, including recommendations for the design of monitoring networks, sensing techniques, nature-based solutions, and pollution mitigation techniques.</li> <li>– Real-time graphical visualization for air and noise pollution, and nature-based solutions.</li> </ul>	<ul style="list-style-type: none"> <li>– Content and scope of the recommendations, including tailored approaches to each partner city.</li> <li>– Content of protocols and operating procedures for design of monitoring networks and use of sensing techniques.</li> </ul>



What needs to be co-defined in the research approach?  
How should the co-creation proceed?

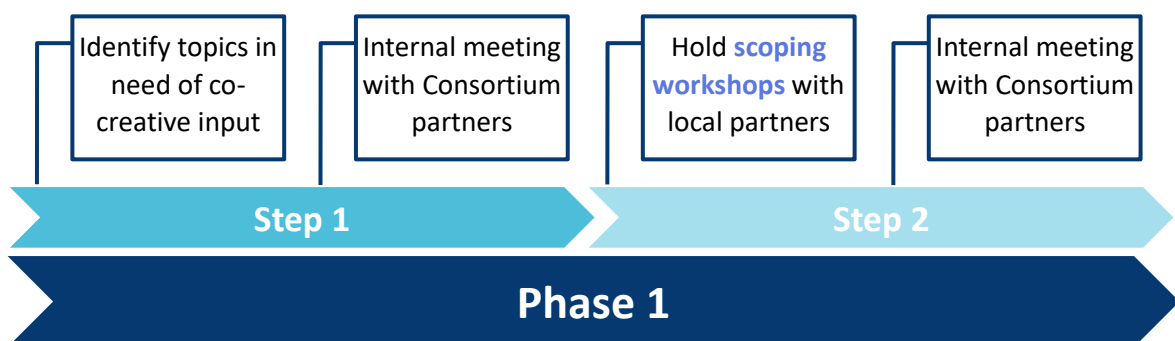
## Phase 1: Joint Framing and Agenda Setting

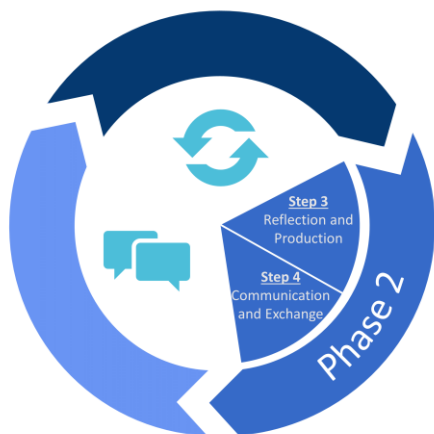
### Step 1: Identify and prepare

- Identify all topics that need to be discussed with the local partners at this point. This will vary across cities due to the heterogeneous approach across each city. Some elements will be relevant for all cities throughout the project.
- Internal meetings within the Consortium will be held to prepare a common approach (where appropriate) for the meetings with local partners. Being well prepared and communicating clearly will be crucial to not waste time and foster engagement with local partners.

### Step 2: Co-design research approach

- Meetings with local partners will be scheduled. Ahead of the meeting, background information, agendas, and timelines for the collaborative process will be provided.
- During the meetings, make implicit expectations of the project’s outcomes and added-value for local stakeholders explicit through clarification, work through the agenda points for each topic using a common template, agree on action items, determine realistic timelines, and define roles and responsibilities.





How can the co-creative research approach be amended?  
How can regular exchange improve the work?

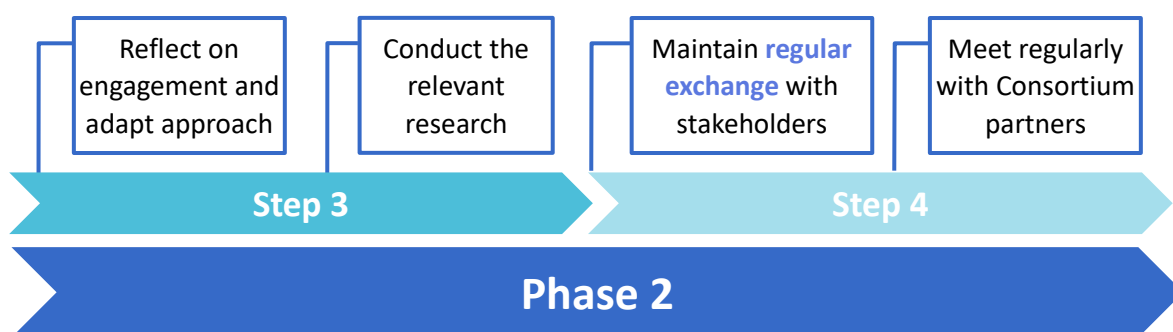
## Phase 2: Co-creation of Knowledge

### Step 3: Reflection and production

- Following the results of engagement activities in Step 2, **compare outcomes, identify synergies and common interests, discuss possible challenges that arose**, include possible solutions from the experience of others, and address the next steps for the path forward.
- Begin the process of producing the required knowledge identified through engagement in Step 2. **Do the actual research as co-designed in Step 1**, but amend the action items appropriately following reflection on the outcomes of the stakeholder engagement in Step 2.

### Step 4: Communication and exchange

- To ensure the research is proceeding as planned and as expected, **regular informal check-ins with local partners** should be held. Such exchange can help flag potential issues and contribute to a modification of the research approach.
- This also entails the **sharing of interim results as they become available to maintain continued interest**. This can also involve periodic press releases and statements to maintain transparency and keep stakeholders, and the general public, informed about the progress and outcomes of the project.
- **Regular check-ins between partners in the Net4Cities Consortium** to discuss progress, address problems, find solutions, and flagging the next steps will be equally important. This will reduce the potential for miscommunication and minimize risk, particularly where there are substantial interdependencies between partners and Work Packages.





How can results be disseminated and made relevant?  
How can products be taken up by external stakeholders?

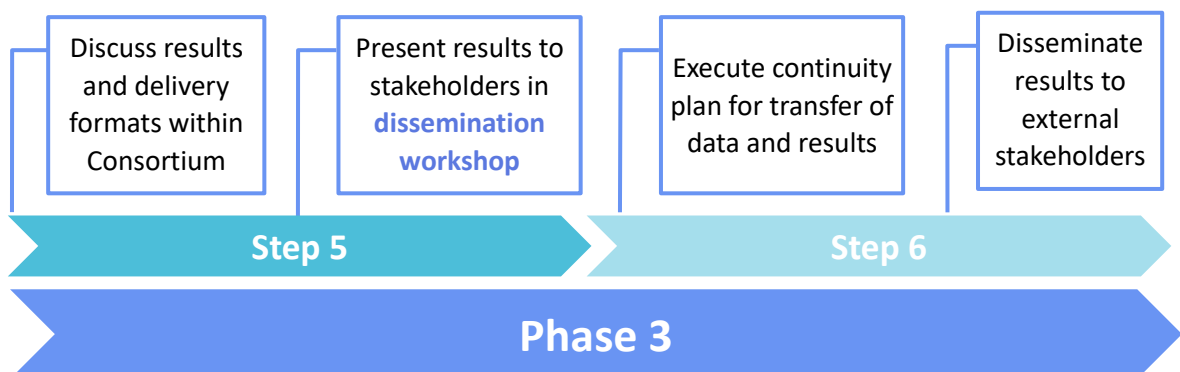
### Phase 3: Uptake, Continuity, and Exploitation

#### Step 5: Delivery and appraisal

- Completion and **delivery of results in various forms** to the EU, the public, and stakeholders. In **workshops with stakeholders**, results and policy relevance are discussed.
- Products and results should at this stage be useful for stakeholders, due to the continuous exchange on needs and priorities in Steps 3 and 4. Further steps are deliberated with local partners to **provide continuity to the work going forward**.

#### Step 6: Dissemination and Uptake

- **Identify relevant target groups** in a gender-sensitive manner for the dissemination and public presentation of key project results. Coordinate with key local stakeholders for highlighting the successes of the collaborative project.
- **Disseminate the results of the project to various target groups** (e.g. networks of European cities) to expand the reach of the work beyond the local partner city.
- Maintain lanes of communication with external partners and advisory boards to **ensure products and outcomes of the project are being taken up by relevant stakeholders**.



## Harmonization of Approach

A final key aspect of the Net4Cities co-creative approach will be to harmonize efforts across the 11 partner cities. Given the heterogeneity in their existing air and noise pollution monitoring networks, as well as in local policy challenges, it is likely that stakeholders in each partner city will engage with the Net4Cities project differently. Therefore, it will be important to harmonize the methodological approach across cities to allow the comparability of outcomes from stakeholder engagement processes across partner cities. Moreover, harmonizing the approach will ensure that partners in the Consortium can collectively learn from one another's experiences in the co-creative process in each city.

To harmonize co-creative efforts between partners in the Net4Cities Consortium, several logistical and methodological approaches are suggested. For example, prior to each set of stakeholder workshops, partners will meet internally to discuss expectations, desired outputs, stakeholders to target, and methodologies for communication and moderation. Once these workshops have been compiled and their results documented, follow-up meetings can be held within the Consortium to discuss encountered problems, identify synergies, reflect upon experiences, and determine next steps in the process.

Where possible, harmonization will also occur between partner cities. Early in the engagement process, the willingness and availability of partner cities for collaboration with other cities will be assessed. With this, it will be determined if there should be e.g., workshops that connect relevant partners from each city, or if fora for exchange should be established. Additionally, interim results of engagement processes will be documented and uploaded on the project website.

One simple approach to achieving harmonization will be to standardize the input and output of stakeholder engagement events, as well as the timelines in which they happen. This information can then be saved centrally for all partners to access, thereby increasing both transparency and connectedness within the Consortium. Some examples of standardized elements include:

### *Information Sheets*

- General information that can be given to stakeholders ahead of any engagement that identifies e.g., main points of contact in the Net4Cities Consortium, the project timeline, planned actions and products, and expectations for the engagement.

### *Evaluation Sheets*

- Generalized evaluation sheets that can be filled out by participants in the workshops to describe their experiences and if expectations are being met in the workshops.
- Internal evaluation sheets for use in streamlining internal reporting, primarily to assist in collaborative learning. These could include descriptions of e.g. problems encountered, successes and challenges in communication, etc.

### *Partner City Specification Template*

- A summary of discussions had in Phase 1 workshops that outline the goals and objectives for the engagement from both local stakeholders and the Net4Cities Consortium. This would serve to inform the work done in Phase 2 and as a point of reflection in Phase 3 once actions have been completed.

## Example of Co-Creative Approach in Action

### Phase 1

Given that the Net4Cities project is in its infancy at the time of publishing this document, the co-creative process is still unfolding. However, as Phase 1 has begun, we present here an example of this stage of the process followed by our expectations as to how Phases 2 and 3 will proceed. This example presents the use of the co-creative approach for a specific set of project actions that are currently underway, not the project overall. Another example, the creation and design of the Net4Cities Studio will also follow these three Phases, but will begin in 2025.

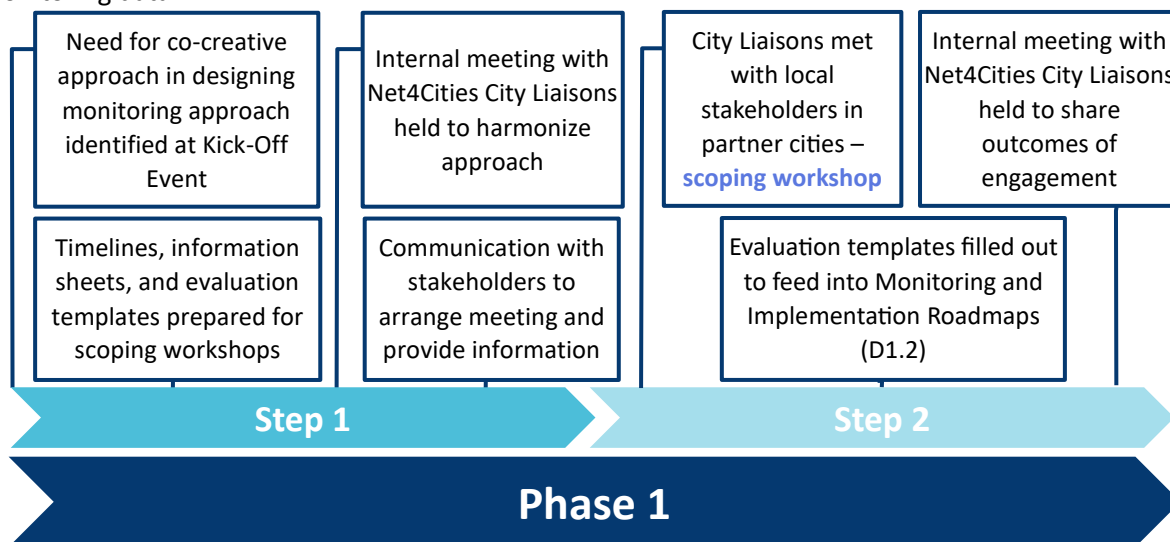
Outcome #2 of the Net4Cities project (Table 1) is to deliver the next generation of air pollution and noise monitoring networks, specifically with regard to their emissions from transport sources. To accomplish this, Net4Cities aims to engage directly with local stakeholders in the partner cities responsible for the monitoring of air and noise pollution. In some partner cities, these relationships are established, whereas in others they need to be developed.

For this reason, Phase 1 of the co-creative process has already begun with regard to meeting this outcome. As presented in the timeline below, this was initiated through internal discussions at the Net4Cities Kick-Off event. The need for co-creative engagement in designing the monitoring approach was made clear, including from Work Packages (WPs) that depend on the availability of this new monitoring data.

To ensure all interdependencies and needs from all WPs for Outcome #2 are met, timelines were established, details from each WP were gathered into information packages for stakeholders, and templates for the scoping workshops were created. These were then presented to City Liaisons for comment and criticism. With these materials, City Liaisons then planned their scoping workshops with local stakeholders to take place in April-May 2024.

These workshops represent the culmination of Phase 1 efforts, in which elements of the Net4Cities research agenda with respect to Outcome #2 are co-designed. By presenting the rigid aspects of Outcome #2, such as the installation of ultrafine particulate matter monitors, and noise monitors co-located with traffic monitors in all partner cities, the core actions were made explicit. Within this framework, flexible elements of the actions were co-designed with local stakeholders, including:

- Site selection with respect to key local sources of transport emissions.
- Roles and responsibilities for the oversight maintenance of monitoring activities.
- Use of the data for local policy support tools and eventual incorporation in the Net4Cities Studio.
- Establishment of Monitoring and Implementation Roadmaps in each partner city.



## Phase 2

Following the scoping workshops, the co-creative approach will shift towards Phase 2, where the actions of Outcome #2 are carried out. Upon reflection of the outcomes of stakeholder engagement in each city, the Monitoring and Implementation Roadmaps are updated to incorporate co-designed elements. Once these plans are completed, work with stakeholders will begin to install instruments, sensors, and monitors, and initiate the collection and analysis of data.

Throughout Phase 2, regular informal meetings will be held between City Liaisons and stakeholders to discuss topics such as:

- Assessing instrument performance
- Data quality assurance and control
- Reviewing interim results of data analysis
- Availability of data and results in the Net4Cities Data Hub and Studio, respectively
- Establishment of datasets for use in policy tool analysis and health studies
- Ensuring continuity of monitoring infrastructure through local takeover of instrumentation

Regular meetings between partners of the Net4Cities Consortium will also be held. These will begin to take place in the 2<sup>nd</sup> half of 2024 and will continue on through 2026 as measurements are taken. These will serve as a form of communication, but will also act to promote collective learning amongst partners through the sharing of experiences, regarding both the continuous stakeholder engagement and the establishment of monitoring infrastructure. The sharing of key results with respect to transport emissions in each partner city will also serve to meet the scientific goals of Outcome #2.

## Phase 3

The boundaries between Phases 2 and 3 will likely overlap between 2026 and 2027 as various results and products become available independently of one another. Therefore, it is key that the regular discussions with stakeholders in Phase 2 reflect the status of the actions being completed under Outcome #2. Once these results become finalized and concrete products are produced, dissemination of the results and the continuity of products following the end of the project will occur, based on previous discussions planning for these dissemination and continuity activities.

This will culminate in dissemination workshops with stakeholders, where results and outcomes of monitoring efforts are presented. Any relevant results for local partners, such as policy relevant outcomes with respect to transport emissions of air and noise pollution, will be discussed. Plans for their public dissemination will be co-created with stakeholders.

In addition, results will be presented to external stakeholders interested in the efforts of the project. This includes other European cities and their monitoring network operators, local and regional governments, various transport and air pollution-oriented NGOs, etc. Attention will be paid to the gender balance of external stakeholders invited to participate in these workshops and events. An external stakeholder workshop will be organized to determine the exploitation of these results beyond the 11 partner cities.

## Conclusions

Net4Cities is an ambitious Horizon Europe project that will seek to advance our understanding of air and noise pollution from transport sources in European cities. To achieve the Objectives laid out in this project, co-creation will play an important role. By co-designing, co-producing, and co-disseminating the research approach, the project actions, and the results and outcomes, respectively, Net4Cities will operationalize stakeholder engagement to improve product quality and enhance policy relevance.

To do so, it will use a co-creative approach that blends elements of transdisciplinary research and co-creation with the rigid infrastructure of the project laid out in the Grant Agreement. This approach has been outlined in this deliverable and will serve as a guide for the project going forward. All actions that require stakeholder engagement will proceed following the three Phases of engagement presented here.

This deliverable intentionally presents the Net4Cities co-creative approach in a general manner, so that it can be applied in all different situations that may arise. However, it is planned to continuously reflect on this document, with updates to details and examples as the project proceeds. This can then ultimately become a valuable result in and of itself, both for the Net4Cities Consortium and for all interested in co-creation.

The example provided in this document serves to clarify how a detailed approach to co-creation is possible within the constrained boundaries of the Grant Agreement. Where there are actions that must be completed, there are also flexible elements that can be co-defined and co-created. It is within these flexible spaces that the Net4Cities co-creative approach will operate. In every instance where these flexible spaces arise in Net4Cities' planned actions, the co-creative approach will begin anew, involving relevant stakeholders as required.

With this approach, Net4Cities aims to achieve its ambitions and ensure that the relevance of work done in this project extends not only to the 11 partner cities, but beyond to other European cities.

## References

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