REFLECTIVE MONITORING GUIDE

Project deliverable D6.1

Version number: Final
Date for release: 23/12/2021

Authors: Marjolein Heezen (TNO), Adriaan Slob (TNO), Mattijs van Maasakkers (TNO)

MOVE21 – Multimodal and interconnected hubs for freight and passenger transport contributing to a zero emission 21st century

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 953939

Deliverable administration information

Deliverable Administration					
Grant Agreement	953939	**Project short name**	MOVE21		
Deliverable no.	D6.1	**Name**	Reflective Monitoring Guide		
Status	Final	**Due**	M8	**Date**	23/12/2021
Author(s)	Marjolein Heezen (TNO) Adriaan Slob (TNO) Mattijs van Maasakkers (TNO)				
Related tasks	T6.1 and T6.2				
Dissemination level	Public				

Document history	Version	Date	Submitted	Reviewed	Comments
	V.01	29/10/2021	Marjolein Heezen	n.a.	1st draft outline, to be reviewed by all Work Package Leaders.
	V.02	26/11/2021	Marjolein Heezen	Tiina Ruohonen, Paal Mork	1st full draft. Minor remarks in review of the outline are taken up in this draft. To be reviewed by: Jesús López Baeza (HCU); Håkan Perslow (RISE); Marianne Stølan Rostoft (TOI)
	V0.3	10/12/2021	Marjolein Heezen	Jesús López Baeza, Håkan Perslow, Marianne Stølan Rostoft	2nd full draft. Comments supplied in review are taken up in this second draft. To be reviewed by Geiske Bouma (WP6 lead)
	V0.4	20/12/2021	Marjolein Heezen	Geiske Bouma	Final Version

Legal Disclaimer

MOVE21 is co-funded by the European Commission, Horizon 2020 research and innovation programme under grant agreement No. 953939 (Innovation Action). The information and views set out in this deliverable are those of the author(s) and do not necessarily reflect the official opinion of the European Union. The information in this document is provided “as is”, and no guarantee or warranty is given that the information is fit for any specific purpose. Neither the European Union institutions and bodies nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein. The MOVE21 Consortium members shall have no liability for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials subject to any liability which is mandatory due to applicable law.

Project Executive Summary

The main objective of MOVE21 is to transform European cities and functional urban areas into climate neutral, connected multimodal urban nodes for smart and clean mobility and logistics. MOVE21 will do this through an integrated approach in which all urban systems are connected, and which addresses both goods and passenger transport together. As a result, MOVE21 will improve efficiency, capacity utilisation, accessibility and innovation capacity in urban nodes and functional urban areas.

The integrated approach in MOVE21 ensures that potential negative effects from applying zero emission solutions in one domain are not transferred to other domains but are instead mitigated. It also ensures that European transport systems will become more resilient. Central to the integrated approach of MOVE21 are three Living Labs in Oslo, Gothenburg, and Hamburg and three replicator cities Munich, Bologna and Rome. In these, different types of mobility hubs and associated innovations are tested and means to overcome barriers for clean and smart mobility are deployed. The Living Labs are based on an open innovation model with quadruple helix partners. The co creation processes are supported by coherent policy measures and by increasing innovation capacity in city governments and local ecosystems. The proposed solutions deliver new, close to market ready solutions that have been proven to work in different regulatory and governance settings. The Living Labs are designed to outlast MOVE21 by applying a self-sustaining partnership model.

MOVE21 partners

The MOVE21 consortium consists of 24 partners from seven different European countries, representing local city authorities, regional authorities, technology and service providers, public transport companies, SMEs, research institutions, universities and network organisations.

- **Norway**: City of Oslo, Viken County, Ruter, Urban Sharing, Mixmove, Institute of Transport Economics, IKT-Norge
- **Sweden**: City of Gothenburg, Rise Research Institutes of Sweden, Business Region Gothenburg, Volvo Technology, Renova, Parkering Göteborg
- **Germany**: City of Hamburg, City of Munich, Hafencity University Hamburg, Deutsche Bahn Station & Service
- **Italy**: Metropolitan City of Bologna, Roma Servizi per la Mobilità, Roma Tre University
- **Belgium**: Eurocities, Polis
- **The Netherlands**: TNO
- **Greece**: Hellas Centre for Technology and Research

https://twitter.com/move21eu

https://www.linkedin.com/company/74707535/

For further information please visit **www.move21.eu**

Deliverable executive summary

The Reflective Monitoring Guide serves as a guide for the qualitative monitoring and learning activities taking place in MOVE21 as part of Work Package 6 (Living Labs). This monitoring focusses on three topics: the Innovation Co-Creation Partnerships (ICCP's), Innovation Capacity and Policy Coherence. The guide introduces the need for qualitative monitoring and learning, the theoretical background about reflective monitoring, the three topics for reflective monitoring, the methodologies (including proposed protocols) as well as some practical information on roles, language and a timeline.

Key words

Living Labs, Monitoring, Reflective Monitoring, Innovation, Learning, Policy

Table of contents

List of figures

N.A.

List of tables

List of abbreviations and acronyms

Acronym	Meaning
D	Deliverable
EU	European Union
FP7	European Commission 7th Framework Programme for Research and Technical Development
H2020	Horizon 2020
ICCP	Innovation Co-Creation Partnership
LL	Living Lab
Q	Quarter
QH	Quadruple Helix
SDG	Sustainable Development Goal
SECAP	Sustainable Energy and Climate Action Plan
SULP	Sustainable Urban Logistics Plan
SUMP	Sustainable Urban Mobility Plan
TEN-T	Trans European Transport Network
TF	Task Force
WP	Work Package

1 Introduction

In this chapter we will illustrate the relevant MOVE21 context for this deliverable. The deliverable is part of Work Package 6 (WP6) that is responsible for the Living Labs in this project. We will start with an introduction on MOVE21 in general and the role of the Living Labs, and then specify the scope of WP6 and the reflective monitoring as part of WP6. This guide will set out the framework, methodology and protocol for ex-durante observations of the interactions related to the Living Labs. We will close this chapter with some practicalities: the target groups of this deliverable, the alignment of this deliverable with other WP's of MOVE21 and a reading guide.

1.1 General introduction to MOVE21

MOVE21 is a European Horizon 2020 Innovation project that works on transforming European cities and their surroundings into smart, zero emission nodes for mobility and logistics. The overall project contributes to the target of participating cities to achieve 30% transport-related emission reduction by 2030 by implementing 15 transport-related innovations. MOVE21 will connect urban systems via an integrated approach and address both goods and passenger transport. The aim is to improve efficiency, capacity utilization of existing vehicles and transport related infrastructure, accessibility, and innovation capacity in urban transport. Also, the cities will learn how to be better equipped to handle rapid changes in transport patterns due to unforeseen events such as pandemics.

The idea of cities as testbeds is central to MOVE21, and the project comprises three Living Labs in Oslo, Gothenburg and Hamburg, together with three replicator cities in Munich, Bologna and Rome. The project will test and upscale different solutions for passenger and goods transport in these six urban areas across the Scandinavian-Mediterranean (Scan-Med) Corridor of the Trans-European Transport Network (TEN-T). The idea is to harness positive effects of new solutions, not only in the so-called urban nodes, but across the Scan-Med TEN-T corridor. MOVE21 delivers new, close to market ready solutions that have been proven to work in different regulatory and governance settings. The cities are also committed to upscaling the most promising solutions which can range from new technological integrations, business models to new procurement and governance methods and integrated solutions incorporating transport of people and goods.

1.1.1 Living Labs

A Living Lab is "*a research concept, which may be defined as a user-centred, iterative, open-innovation ecosystem, often operating in a territorial context (e.g. city, agglomeration, region or campus), integrating concurrent research and innovation processes within a public-private-people partnership*." (Pallot, 2009). In the Living Labs of Oslo, Gothenburg and Hamburg, processes will be set-up to co-create knowledge necessary for choosing, tailoring and deploying the new solutions (innovations) for passenger and goods transport in the local contexts. This is done in the so-called Innovation Co-Creation Partnerships (ICCPs) in which actors from the local innovation ecosystem, local government and agencies, businesses and industries, knowledge institutes and academia and citizens or citizen groups, work together.

The ICCPs will meet regularly during the project to discuss and choose the solutions, explore possible obstacles for deployment and, if within reach, find ways to remove or bypass obstacles. In this way the local actors can bring their knowledge to the table and make it possible to use the knowledge and different inputs of the local innovation eco-system to promote and deploy innovations that fit to the local context and local "system". The cooperation in the ICCPs thus promote system solutions.

As there is no blueprint for this process, a regular reflection on the process is built in to help the Living Labs and its ICCPs to keep track and to learn how to better promote and deploy the selected innovations. This guide describes the different elements of this reflection.

1.2 Introduction to WP6 and Reflective Monitoring

Activities in the Living Labs are monitored by WP6 (reflective monitoring) and WP8 (measuring and impact assessment) in order to assess their processes, impacts and implementations. This reflective monitoring guide will be used for the qualitative monitoring of the Living Labs and create a continuous loop of observations, reflections, and actions to improve the operation of the Living Labs and the deployment of innovations. It is about capturing lessons learned from the experiments and the process of co-creation in the Living Labs. In this project the focus is on system solutions; solutions that are not (yet) proven and require more than a simple implementation.

Researchers at Wageningen University (WUR) and the VU University of Amsterdam state that *"if a project wants to realize the far-fetching ambitions of system innovation, then reflection and learning must be tightly interwoven within it*" (Van Mierlo, 2010, p. 11). Monitoring and reflection should therefore not only focus on the innovations itself but also – and in the case of the monitoring in WP6 – specifically on the process towards innovation. Reflective monitoring is part of the process, not just an action in itself and encourages the Living Lab participants to reflect on some key items; project ambitions, current daily practices and their relation to the institutions and developments that allow opportunities for change and implementation of solutions.

The monitoring guide will describe how the different co-creation and implementation processes in the Living Labs are monitored (elaborated in chapter 3). Methods applied for Reflective Monitoring in MOVE21 will be (structured) observations, surveys, logbooks, and (in-depth) interviews (elaborated in chapter 4). In several joint workshops results of the monitoring will be discussed, validated and translated into new actions to improve ways of working. Best practices and lessons learned will be validated in joint workshops with representatives of the Living Labs in year 3 and 4. These are input for a Guide on improving city's capacities for promoting sustainable mobility and logistics innovations (D6.7) and a Practitioners guide for setting up self-sustaining innovation co-creation partnerships (D6.8).

1.3 Practicalities

This deliverable is written to flesh out the reflective monitoring of the activities in MOVE21. It might also serve as an inspiration for monitoring other innovation projects where co-innovation, co-creation and co-implementation processes are central constructs of a project.

There is a strong link to the other monitoring work package, WP8. In WP8 the focus is on monitoring impacts of the Living Labs (and the replicator cities; Munich, Bologna and Rome), which is more focused on quantitative monitoring. The monitoring that is taking place in WP6 under the reflective monitoring section is focused on the process leading towards these measures and impacts in the Living Labs. The results from the Reflective Monitoring in WP6 can deliver explanations for the results of the quantitative monitoring in WP8 (for example: why is the impact not as big as expected or how come the innovations did not scale?).

There is also a link to WPs 3, 4, 5 and 7. WP3 (the Urban Social Layer), WP4 (Governance Innovation) and WP5 (Technological Solutions and Integration) will exchange knowledge with the Living Labs on the topic of the urban social layer, governance, innovation capacity, technology solutions, technology integration and digital twins. Some of the tasks in WP6 will be taken up collectively with these WPs and collaboration between WP3, 4, 5 and 6 is evident in the Living Lab processes. With WP7 (Replication and Take-up), the link is mostly on knowledge exchange, capacity building and replication activities between the Living Labs and the replicator cities.

Finally, there is a link to WP1 and innovation management. The purpose of innovation management in WP1 is to build sustained innovation capability. In practice, that means to facilitate and support a working climate, structures, and ways of working that foster ideation, development and launch of innovations. While innovation management focusses on the project team and project partners, the reflective monitoring focusses also on the wider innovation ecosystem.

1.3.1 Reading Guide

The Reflective Monitoring Guide contains 5 chapters and 6 appendices. Chapter 2 will provide the theoretical backgrounds on Reflective Monitoring. In chapter 3 the scope of the monitoring activities is described and contains also a section on the differences between the monitoring activities in WP8 and WP6 (3.1). Then the three main topics of the monitoring activities in MOVE21 are described: the Innovation Co-Creation Partnerships, Innovation Capacity and Policy Coherence (3.2). Chapter 4 will describe the monitoring methodologies that will be used to capture the processes in the Living-Labs and then will detail the used monitoring methodology per specific topic in the Living Labs. Chapter 4 will describe how the results of the Reflective Monitoring will be validated and finally taken up in the Deliverables of WP6 (4.5). Chapter 5 will describe the organisational matters concerning the Reflective Monitoring by providing practical information (5.1) as well as providing a planning and timeline of Reflective Monitoring activities (5.2). The appendices in chapter 7 contain all suggested (draft) protocols for the Reflective Monitoring Activities, with a separate appendix for each monitoring methodology.

2 Theoretical Background

In this chapter the theoretical base capturing main insights from literature relevant for the Reflective Monitoring Guide is described. This chapter should answer questions as to what reflective monitoring is, why we apply this in MOVE21, what the methods and approaches are, what best practices are available and what is challenging when applying reflective monitoring to a project. This chapter is the base of the further descriptions in this deliverable on what is monitored, how it is monitored and the organizational matters of reflective monitoring within MOVE21 (chapters 3 – 5).

2.1 Reflection as a condition for learning

Contemporary mobility and logistics systems bring together disparate actors and multiple technologies, from individual consumers and their cell phones to multinational freight companies and their warehousing complexes. MOVE21 intends to develop increasingly sophisticated transportation-related socio-technical systems, or *system solutions*, combining mobility and freight. These solutions are likely to require novel arrangements, in which individuals, organizations and technologies are asked to perform new or different tasks. For this type of shift to succeed, careful attention needs to be paid to not only the goals and constraints of various actors (including technologies), but also to the dynamics of changing policy, innovation, and interaction processes.

In MOVE21, three types of processes are likely to require some level of change for durable system solutions to emerge, be implemented and ultimately stabilize. The first type consists of the interactions and dynamics within the Task Forces and Innovation Co-Creation Partnerships. It is through these interactions that the system solutions are expected to be initiated, created and expanded. The second type of process, which shapes the context within which the Task Forces and ICCPs operate, consists of policy processes in which increasing levels of coherence between various actors' goals and (policy) tools might become necessary. The third type of process of importance in MOVE21 consists of innovation processes, with a particular emphasis on the capacity of actors in the public sector to engage actors and outcomes of innovation processes.

The complexity of these three types of processes, and more broadly the ambitions and challenges embedded in the Living Labs, necessitates a deliberate effort to learn from, and adjust to, successes, failures, barriers, and accelerators, as the *system solutions* move from idea-stage to become everyday practices. In order to learn from these three types of processes across the three Living Labs, reflective monitoring will take place. Reflection, in the context of professional practice (Schön, 1983), can be understood as an activity that asks participants to combine experience and interaction, either individually or as a group, to increase understanding and enable future action(s). In organizations, reflective practices expand the notion of learning beyond procedures which seek to enhance a unit's ability to reach pre-defined goals (Argyris & Schön, 1978). Reflection, in Argyris and Schon's classic formulation, enables "double loop learning" (1978) which refers to experience-based changes or innovations related to organizational goals or decision-making rules and procedures.

In MOVE21, the Innovation Co-Creation Partnerships will form the focal point of strategic interactions and negotiations about the proposed *system solutions.* The Task Forces have the task to organise the process, invite relevant stakeholders and organise the sustainability of the ICCP beyond the lifetime of the project. In order to learn from and continuously enhance the process through which novel systems solutions are initiated, developed, tested, implemented and adjusted, the ICCPs and the Task Forces will engage in reflective monitoring. Furthermore, the Task Forces' ability to change goals and/or decision-making procedures based on their experiences, will also be assessed. While the reflective monitoring in MOVE21 primarily focuses on the ICCP and Task Force interactions and dynamics, supportive data-gathering and analysis efforts related to the relevant policy and innovation processes will also take place.

2.2 Reflective Monitoring: methods and approaches

Reflective monitoring (also referred to as reflexive monitoring) refers to a suite of approaches, intended to enable continuous (or at least regular) double loop learning in organizational contexts (Argyris & Schön, 1978). Particularly in situations where there is no stable, single organizational structure within which learning ought to take place, formalized monitoring can play an important role in enabling reflective practice. In MOVE21, as in similar multi-actor innovation processes related to sustainability, the reflective monitoring approach is highly relevant, since problem definition(s), stakeholder identification and interest articulation frequently exhibit key elements of "wicked problems" (Rittel & Webber, 1973). The members of the Innovation Co-Creation Partnerships and the related Task Forces cannot simply rely on established organizational goals, decision-making rules and procedures to determine appropriate courses of action. Reflective monitoring will assist the members of the ICCPs and the Task Forces in making sense of, engaging, enacting and appraising both existing and novel socio-technical regimes and related practices (Verwoerd et al., 2020).

At the centre of all reflective monitoring tools and approaches is the intent to provide participants with relevant information and evidence that allows them to collaboratively (re-)formulate goals and decision-making rules in the ICCPs. Gathering information is therefore only one element in a reflective monitoring scheme, since the joint re-formulation of goals and decision-making procedures requires active engagement with the actors at the centre of the innovation process(es). Reflective monitoring is *"a form of action research in which the researcher acts as a sparring partner, facilitator, analyst and critical outsider of the innovation initiative, in various ways stimulating the reflection on the outcomes of activities in the name of the initiative in the light of the system innovation ambition and developments in its context."* (Beers & Van Mierlo, 2017, p. 421). This combination of analysis and engagement requires specific research methods and interaction designs.

Most reflective monitoring methods and approaches (Van Mierlo, 2010) incorporate two distinct types of elements. The first consists of various forms of direct interaction with key actors, either individually (in interviews or surveys) or in groups (in organized workshops, focus groups or polls). The second element is based on observations, of relevant policy documents, meetings (recordings, notes, and/or transcripts), or public discourse (newspaper articles, media appearances by key actors, etc.). Due to the ongoing, and iterative nature of processes of innovation, interactive and observational data-gathering typically occurs continuously, or at least repeatedly. The implementation of the specific data-gathering methods requires the precise formulation or interview and/or survey questions, the formulation of themes and topics that structure document analyses or meeting observation protocols (Klaassen et al., 2020). Since the goal of reflective monitoring is to facilitate action-oriented learning, the initial formulation of data-gathering methods requires direct input from key actors, to ensure relevance and immediacy. As the relevant processes evolve, and learning takes place, some elements of these data-gathering methods might change, with survey questions or observation protocols shifting as new challenges or opportunities present themselves.

In order for these data-gathering efforts to enable changes in collaborative goals and decision-making rules within the ICCPs, a flexible process through which the results of data gathering are presented to, discussed with and ultimately acted upon by key actors is required. A reflective monitoring scheme therefore intentionally connects the learning process to learning outcomes through active communication. It is through these communicative interactions that actors can make sense of the information gathered and collaboratively determine appropriate changes (Beers et al., 2016). In the context of MOVE21, this means that the reflective monitoring scheme consists of both data-gathering techniques (based on interactions and observations) and communication processes.

2.3 Local Knowledge and Reflective Monitoring

The relationship(s) between key actors (i.e., Task Force members), the broader community of stakeholders (i.e., potential ICCP members) and the analyst(s) in a reflective monitoring scheme are typically complex and dynamic. These relationships are also subject to some of the basic questions embedded in the reflective monitoring approach, like whether individual (or specific organizational) goals and constraints are effectively translated into, or at least acknowledged in, the (re-)formulation of more collective goals and decision-making procedures. Given these challenges, reflective monitoring approaches frequently rely on some kind of external "evaluator", acting mostly in a facilitative capacity, but occasionally engaging more like a "critical friend". (Klaassen et al., 2020, p. 232). This role is not one of distant observations and harsh judgments, but rather one of frequent deliberation and providing assistance in the joint formulation of (revised) goals and decision-making rules and procedures.

In multi-sited projects like MOVE21, reflective monitoring requires deep familiarity with multiple languages as well, as the ability to understand nuanced changes in goals and decision-making rules is necessary. In addition to the "evaluators" these processes require "monitors", or individuals who can conduct direct observations of interactions and relevant expressions in public discourse in the appropriate language. These local monitors collaborate closely with the facilitator of the overall reflective monitoring scheme, as specific methods or indicators require adjustments, or particular interventions become necessary to assist actors in moving towards double loop learning. While local monitors do not necessarily require specific skillsets, beyond linguistic fluency and communicative capacity, some aspects of facilitative leadership (Forester, 2017) are relevant to this role as well, including conflict assessment, collaborative problem solving, and coalition building.

2.4 Reflective Monitoring in MOVE21: Indicators, Procedures and Methods

The iterative nature of reflective monitoring, and the need to adjust methods and approaches as new insights emerge and are incorporated, requires a flexible approach. Within MOVE21, three types of processes will be monitored in each city at the outset, namely the Innovation Co-Creation Partnership and Task Force interactions, municipal policy processes and the capacity of the municipal agencies to engage with, and in, various forms of innovation. The Innovation Co-Creation Partnerships interactions are initially at the centre of the reflective monitoring scheme, as preparations for, and negotiations about, the proposed systems solutions are expected to take place within those entities. As the proposed system solutions move from idea-stage to design and implementation, the other two types of processes, related to policy and innovation, are likely to become increasingly relevant, as the range of decision-making organizations and individuals of direct importance to the system solutions expands.

The Innovation Co-Creation Partnerships and the related Task Forces are engaged in sustainability-oriented system innovation initiatives, which means that in addition to the basic (and ongoing) questions of representation and participation, the monitoring effort will engage questions related to (shared) problem framing, interest articulation, idea formation and implementation actions (Susskind & Van Maasakkers, 2012). As the Innovation Co-Creation Partnership(s) are developing and/or become more formalized, the focus of the reflective monitoring effort is likely to shift to the interactions and dynamics within those networks, although the focal areas of representation and participation, problem framing, interest articulation, idea formation and implementation will likely remain relevant.

The policy processes of relevance to the Innovation Co-Creation Partnerships cannot be fully foreseen at the outset of the project, as the proposed system solutions seek to develop new (combinations of) socio-technical regimes. Almost by definition, the development of a new socio-technical regime will encounter a range of policies and policy-makers, from different departments, sectors or disciplinary backgrounds, with different levels of comfort with, or support for, a new approach. The main goal of the reflective monitoring and the efforts of WP6 related to these policy processes is to assess and engage the range of relevant municipal and/or non-governmental actors that create and implement policies with some bearing on the proposed system solution. While policy change in and of itself is not a goal of the reflective monitoring effort, there is likely to be a need to understand and navigate unfamiliar and varied

policy-terrains. In anticipation of this dynamic, the reflective monitoring effort related to policy seeks to facilitate double loop learning related to policy-relevant goals and decision-making procedures.

Innovations, or *system innovations* such as those likely to be proposed within MOVE21, will not only encounter a disparate range of policies and policymakers, these system solutions will probably also test the ability of various actors, both governmental and non-governmental, to take advantage of and/or cope with innovations in socio-technical regimes. This capacity, referred to as *innovation capacity* (for operationalization see appendix 6) in this guide, will be monitored by establishing a baseline at the outset of the project and then reviewing changes in year 3 or 4.

The following section of this guide will describe the application of the reflective monitoring effort in more detail, focusing on practical implementation actions, considerations and steps.

3 What is being monitored

This chapter will dive deeper into what is being monitored. It starts with the scope of the reflective monitoring – this also includes a description of what is *not* monitored (distinct also between the monitoring activities in WP8 versus WP6) – and explains its expected results and what reflective monitoring will contribute to the project. It will, furthermore, detail the three main monitoring topics: the process of the Innovation Co-Creation Partnerships, the Innovation Capacity of the city, and the process of Policy Coherence.

3.1 Scope of the Reflective Monitoring for MOVE21

The reflective monitoring activities will monitor the *process* of innovation in the Living Labs in a qualitative way. This innovation process will be monitored throughout the different stages of the project; from envisioning, agenda-setting and design towards experimenting, monitoring, learning and up-scaling initiatives. The reflective monitoring includes – besides the monitoring – learning and acting upon learning throughout the project. The monitoring activities create a continuous loop of observations, reflections and actions to improve the processes in the Living Labs and the deployment of innovations. To report the lessons learnt along the way, three deliverables will be produced based on the reflective monitoring activities: Reflective monitoring interim report (D6.6), MOVE21 guide on improving city's capacities for promoting sustainable mobility and logistics innovations (D6.7), and Practitioners' guide for setting up self-sustaining innovation co-creation partnerships (D6.8). The insights from the reflective monitoring can also be used in the deliverables of other work packages (specifically: WP3, WP4, WP5, WP7, WP8 and WP10). Below the deliverables are listed that report the outcomes of the reflective monitoring process (D6.6, D6.7, and D6.8) and the deliverables of other WPs that may benefit from the outcomes of the reflective monitoring:

- D6.6 – Reflective Monitoring: Interim Report (M30): This deliverable details the interim results of the reflective monitoring process for the three Living Labs and the intermediate results on increasing innovation capacity and on the process in the Innovation Co-Creation Partnerships. This deliverable will be used to adjust the project's direction and focus in the three Living Labs if necessary, in relation to fostering innovation capacity.
- D6.7 – MOVE21 guide on improving city's capacities for promoting sustainable mobility and logistics innovations (M42): This deliverable is based on the reflective monitoring and its lessons learned on improving the innovation capacity in the three Living Lab cities. In several joint workshops, the results of the monitoring are discussed, validated and translated into new actions to improve ways of working. Best practices and lessons learned are validated in joint workshops with representatives from the cities (and the Replicator Cities), which form the input for this deliverable.
- D6.8 – Practitioners' guide for setting up self-sustaining Innovation Co-Creation Partnerships (M46): This deliverable is based on the reflective monitoring and its lessons learned on the establishment and development of the innovation co-creation partnerships in the three Living Lab cities. Best practices and lessons learned are validated in joint workshops with representatives from the cities (and the Replicator Cities) and form the input for this deliverable that is intended as guidance for other cities wishing to create self-sustaining innovation co-creation partnerships.

- For WP3: Reflective Monitoring insights and results might be relevant as input for D3.3 (MOVE21 upscaling plan and transferability assessment) in which the upscaling potential on middle term (2025) and long term (beyond 2030) and conditions for success are described.
- For WP4: Reflective Monitoring insights and results might be relevant as input for the deliverables D4.2 (Governance innovation: solutions in MOVE21 and implication for other cities) as well as D4.3 (MOVE21 upscaling plan and transferability assessment – governance). The

insights from the reflective monitoring might add to these deliverables and vice versa the reflective monitoring could benefit from the insights of these WP4 deliverables.

- For WP5: Reflective Monitoring insights and results might be relevant as input for D5.3 (MOVE21 technologies: upscaling and transferability assessment) for upscaling and replication on different levels; corridor, regional, local and micro levels.
- For WP7: Reflective Monitoring results and insights might be relevant to other cities as well (both replicators and cascade cities). Therefore, there is a link with the deliverables D7.2 (Replication Action Plans for Oslo, Gothenburg, Hamburg, Munich, Bologna and Rome) as well as D7.3 (Cascade Cities Action Plans).
- For WP8: Reflective Monitoring results and insights are relevant as input to D8.6 (Ex-post implementation of the Impact Analysis Framework). This deliverable will evaluate measures ex-post to ensure that the selected measures offer the expected results. The Reflective Monitoring could explain differences between the expected outcomes and the real-world results.
- For WP10: Reflective Monitoring results and insights are relevant as input to D10.7 (SUMP Topic Guide). The monitoring activities related to policy coherence are specifically relevant input for the guide that is written as part of the activities of WP7 and WP10 in D10.7.

The Reflective Monitoring taking place in WP6 is not focused on the measures and outcomes but on the *process* – specifically on the co-creation and implementation processes in the project. In WP8 – Measuring and Impact Assessment – the actual impact evaluations are taking place that review the solutions and measures developed in the Living Labs. WP8 also focuses on the evaluation and replication activities of the follower cities (WP7). Finally, WP8 analyses the overall impact of the project on the TEN-T network level to enable maximization of the most effective MOVE21 solutions. To support the monitoring activities in WP8, an Impact Analysis Framework is created based on existing evaluation guidelines and sets of proposed indicators in urban mobility (for example CIVITAS, SDG or SPROUT) as well as indicators on smart, sustainable and inclusive growth. The monitoring activities in WP6 could add to WP8 results, for instance by explaining the results that are found in WP8 (e.g., why is an innovation not successful, the process towards implementation, or how come the use of hubs is different than expected).

3.2 Topics for the Reflective Monitoring

The Reflective Monitoring Guide will focus on the processes of co-creation and implementation in the Living Labs specified to the following three categories of monitoring:

1. Innovation Co-Creation Partnerships (ICCPs),
2. Innovation Capacity,
3. Policy Coherence.

Below, each of the monitoring topics is operationalized with the corresponding Living Lab activities.

3.2.1 Innovation Co-Creation Partnerships

The first topic for the reflective monitoring is the Innovation Co-Creation Partnerships. This section explains what activities are taking place in the ICCPs and what is being monitored.

3.2.1.1 What are Innovation Co-Creation Partnerships?

One of the core components of each Living Lab is the Innovation Co-creation Partnership. The ICCPs will be built on already existing partnerships in the cities to ensure effective, sustainable, long-lasting arenas for open innovation in public-private partnerships. The following actors are invited to participate in the Innovation Co-creation Partnerships, many of which are also part of the existing partnerships: local authorities, industries, businesses, SMEs, infrastructure operators, public transport providers, utilities, knowledge institutes and representatives from civil society or citizens. The Partnerships are aimed at co-creating, tailoring, deploying and upscaling the mobility and logistics innovations to the local contexts. Besides co-creation, quadruple helix partners are also involved in assessing and reviewing measures in order to accelerate the uptake of mobility and logistics innovations in the city. The

partnership model proposed in MOVE21 is replicable to other cities for co-creation of zero emission transport innovations across the EU.

The ICCPs are geared towards:

- Enhancing cooperation in local innovation ecosystems;
- Fostering an integrated approach for co-creating, tailoring, assessing and reviewing sustainable mobility and logistics innovations in the local context which is supported by state-of-the-art knowledge from businesses and research;
- Accelerating market uptake of good solutions;
- Sustaining deployment and upscaling of sustainable mobility and logistics innovations beyond the lifetime of the project.

The ICCPs will meet regularly to discuss the innovations that are proposed in the Living Labs: what are the local opportunities for innovation, what are the expected local impacts and how do they match the policy goals of the city, what better alternatives are available, what obstacles (technical, economical, legal, organisational, etc.) could be expected and how to remove them, how could innovations be adapted to the local situation for a better fit, how to create local favourable conditions for upscaling and market uptake. The ICCPs are provided with the necessary knowledge from several work packages for the discussions in a continuous knowledge brokerage process on the social, governance and technical conditions with experts. Together they will review the local conditions and propose actions or measures to make the innovations fit local contexts, discuss policy measures that should accompany the innovations, and develop local upscaling and follow-up plans.

The ICCP will seek to develop a dedicated organization and financing model to sustain it beyond the lifetime of the project. The Innovation Co-creation Partnerships established in MOVE21 will include a detailed business and investment plan for the different phases of the project. Joint activities that are able to generate funds should be considered and prioritized (e.g. workshops for ecosystem learning, collaborative testing and validation and the identification of opportunities and investment plans). It is expected that income from services and innovations will not entirely cover the needed funding, and thus other sources of funding should be explored and utilised where available.

3.2.1.2 Monitoring activities

For the ICCPs several activities will be followed with the reflective monitoring. They are listed and explained below.

- ICCP establishment and meetings: The Innovation Co-Creation Partnerships are the chosen governance structure for co-creation and implementation in MOVE21 and each Living Lab has its own ICCP. The Reflective Monitoring focuses on the establishment of the ICCP and its development during the project: roles, tasks and representation of the ICCP, ICCP meetings, processes, dynamics and interactions and perception of the involved parties of the ICCP (satisfaction of its functioning and role in the processes in the Living Lab).
- Task Force (TF) establishment and interactions: An important part of the co-creation and implementation processes in the ICCP is steered via the Task Forces. Therefore, the process towards establishing the TF, and interactions during the project are an important monitoring topic. For this we will monitor the TF meetings, Quadruple Helix stakeholder representation, roles, ownership, community and/or shared responsibility in the Task Forces.
- Co-creation sessions on MOVE21 solutions: Within the ICCPs co-creation sessions are organized on the MOVE21 solutions. The goal of these sessions is to frame local problems and innovations and solutions, to assess and review local solutions as well as tailoring innovations to the local context. The reflective monitoring focuses on the number of sessions, the topics discussed, involved parties, outcomes and follow-up actions and agreements as well as the process and perceived satisfaction of these co-creation sessions.
- Workshops to bring together and exchange knowledge on specific topics with WP3, 4, and 5: Within the ICCP these so-called ‘knowledge brokerage sessions’ are organized on the MOVE21 solutions to facilitate knowledge exchange and discuss and analyse outcomes and the uptake

of knowledge. The reflective monitoring focuses on the number of sessions, the topics discussed, involved parties, outcomes and follow-up actions and agreements as well as the process and perceived satisfaction of these knowledge exchange sessions.

- Policy co-creation sessions amongst policy makers from various domains: Within the ICCPs (or within governmental organisations) policy co-creation sessions are organized on the MOVE21 solutions. The goal of these sessions is to facilitate policy making across domains and organize specific knowledge exchange to serve this goal. The reflective monitoring focuses on the number of sessions, the topics discussed, involved parties, outcomes and follow-up actions and agreements as well as the process and perceived satisfaction of these policy co-creation sessions.
- Sustaining the ICCP beyond the lifetime of the project: The sustainability of the cooperation is very important to ensure that the efforts of MOVE21, and specifically the partnership of the ICCP, are not solely focused on the time horizon of the project. The reflective monitoring focuses on the activities taken up by the Task Force or the ICCP to sustain the cooperation beyond the project, who were involved, the outcomes, the cooperation and the process and satisfaction on the efforts to sustain the activities.

3.2.2 Innovation Capacity

The second topic for the reflective monitoring is the Innovation Capacity. This section explains what activities are taking place in the Living Labs and what is being monitored.

3.2.2.1 What is Innovation Capacity?

Developing the cities' innovation capacity is an important condition for embedding novel ways of working within the cities' organisation. The need for innovation in the public sector is recognized more and more to improve services, products and policies to create public value. As a result of increasing complexity in handling (sustainability) transitions and challenges, the innovation capacity of cities needs to increase. This requires different skills, structures and capabilities in cities, who play an important role in facilitating urban innovation processes. Innovation capacity refers to the human, financial and institutional resources and skills that can catalyse, implement and promote innovative, collaborative, long-term bottom-up solutions (OECD, 2019). According to Lewis et al. (2018) Innovation Capacity is defined as: "a set of conditions that supports innovation or provides a supportive infrastructure; it is the set of factors that either allows innovation to occur or (more positively) actively encourages it". MOVE21's Grant Agreement focuses on three interdependent pillars to improve Innovation Capacity in this project for the Living Lab cities. These pillars are: organisation; technology, data and knowledge management; and partnerships. Within these pillars relevant innovative capabilities for cities are highlighted.

Based on these three pillars, an operationalisation of Innovation Capacity to support the reflective monitoring activities as well as innovation capacity building has been developed. This operationalisation uses five main elements; Leadership (e.g. transformational, connective leadership, dedicated teams), Organisation (e.g. culture, governance structures, access to funding, HRM policies, attitude towards risk, communication), Knowledge Management (e.g., access and ability to share and deal with knowledge, technology and data, knowledge translation, in context of innovations), Network (e.g. internal and external networks, co-operations and partnerships, collaboration structures/partnership models, stakeholder representation), and Learning (e.g. embedding lessons learned, continuous process of action and reflection, experimenting). In *Appendix 6* a more elaborate description of the Innovation Capacity concept is given.

WP6 will be working on the topic of increasing innovation capacity in order to support the desired development, implementation and scale-up of co-created mobility and logistics innovations that add to the cities' goals and ambitions. To do so, there will be short evaluations on the present state of Innovation Capacity. This will both serve as a starting point as well as identify outlooks for improvement. There will also be dedicated sessions and trainings on the aspects that need improvement, for example on how to deal with organizational issues or improving knowledge management. Finally, the Living Labs

will host knowledge brokerage sessions to deliver state of the art information and knowledge relevant for increasing innovation capacity.

3.2.2.2 Monitoring Activities

Innovation capacity and results of the corresponding activities in WP6 are monitored, evaluated and validated as inputs for (amongst others) D6.7. This deliverable will combine the best practices and lessons learned for improving the city's capacities for promoting sustainable mobility and logistics innovations. To monitor and evaluate these activities in the Living Labs, this guide suggests monitoring the following activities, considering the process, impact and implementation of the activities:

- The present state of Innovation Capacity (starting point) and progress in Innovation Capacity for the Living Lab cities. We will establish a baseline at the start of the reflective monitoring activities in the project (for monitoring progress as well as determining relevant topics for knowledge brokerage sessions and support) and we will monitor the progress during the project with yearly intervals.
- Dedicated trainings and sessions on Innovation Capacity in the city: As part of WP6 sessions and two trainings will be organized on the topic of Innovation Capacity. The reflective monitoring will focus on the process and outcomes of these sessions, to which aspects of innovation capacity it contributes as well as to what extent the sessions contribute to resolving or removing existing bottlenecks. The monitoring activity described above is for a part responsible for scoping these sessions (based on the baseline and progress in Innovation Capacity in the Living Labs).

3.2.3 Policy Coherence

The third topic for the Reflective Monitoring is the Policy Coherence. This section explains what activities are taking place in the project and in the Living Labs and what is being monitored.

3.2.3.1 What is Policy Coherence?

The Living Labs will develop sustainable mobility and logistics innovations that are new and that need to be supported by a set of coherent, or even integrated, local policies and/or planning mechanisms in the appropriate fields such as mobility planning, urban planning, property development, infrastructure development and energy consumption in order to succeed. These policies need to be aligned with the cities' existing goals for 2030 in terms of emission reductions, modal split, the number of electric vehicles in circulation, energy efficiency, air pollution, and so on.

To achieve this, supportive local policies and conditions are developed and/or enhanced by policy makers in collaboration with experts from relevant domains. Obstructive local policies or regulations need to be removed or reduced. WP6 will facilitate policy co-creation sessions amongst policy makers from related domains (e.g., urban planning, mobility, energy). To this end, relevant expertise and knowledge from other WPs – especially WPs 3, 4 and 5 – needs to be included in the development of and discussions on policy coherence. Eventually, these efforts need to result in the implementation of the coordinated or integrated responses in the best way possible in the cities. Also, they will be taken up by relevant plans and strategies such as SUMPs and SULPs or important strategies.

3.2.3.2 Monitoring Activities

For policy coherence the reflective monitoring is focused on the following aspects:

- Formulation of coordinated and integrated policy responses in the cities. The reflective monitoring focuses on the process of creating and formulating integrated policy responses and bringing together multiple municipal departments and/or non-governmental actors. The monitoring will include the awareness of, and agreement about, specific framing of policy relevant issues amongst policy makers, agenda setting (which issues are dealt with, by whom, how?), and which integrated policies/plans are proposed.
- The implementation of coordinated or integrated policy responses in cities. The reflective monitoring is focused on the outcomes of the process – (towards) the implementation of

integrated policy responses: which integrated policies are implemented, when and by whom as well as who were involved.

- Remove obstructive local policies and regulations. This is focused on the process of removing barriers and obstructions related to the innovative system solution(s). The monitoring focuses on what obstructive policies/regulations for the innovations have been identified and how they are tackled, what proposals have been formulated to remove obstructive policies, what obstructive policies have been removed and when, what obstructive policies/regulations have been identified that do not fall under the mandate of the city and in what way is dealt with these obstructive policies/regulations.
- Uptake of policies in the relevant city plans and strategies (e.g., SUMPs and SULPs). Here the focus is on which formal municipal strategies/ambitions are in place that (could be) affect(ed by) MOVE21, how plans influence municipal ambitions/visions/…. or inspire MOVE21, and how MOVE21 adds to the (re)formulation of strategies and plans. The monitoring focuses on the assessment of current (municipal) ambitions, visions, strategies relevant to MOVE21, and analysis of current SUMPs and SULPs, SE(C)Aps of the city (relevant to MOVE21), revision dates of these plans and ambitions (based on interviews and D4.1), in year 3 how the project influenced plans and vice versa and finally in year 4 assessing how insights from MOVE21 impacted the ambitions, plans and strategies.

4 Applied Methodologies for Monitoring

This chapter explains *how* the ICCPs, Innovation Capacity and Policy Coherence are monitored throughout the project. The primary goal of the reflective monitoring effort is to enable shared, ongoing learning among and between the actors in the participating cities in MOVE21. This means that the reflective monitoring effort needs to be flexible. As new issues, opportunities and challenges emerge, certain monitoring activities or tools might require adjustments. The emphasis of the data-gathering within the reflective monitoring effort is on tracking (and making sense of) the co-creation, innovation and implementation processes in the participating cities. This requires collecting detailed information about the interactions and dynamics within the relevant meetings, groups and organizations, and how these relate to the goals of MOVE21.

Five types of monitoring methods will generate the majority of the empirical evidence necessary to inform the reflection process. These are 1) logbooks, 2) meeting observations, 3) participant exit surveys, 4) semi-structured interviews with key informants and 5) an online survey related to innovation capacity. The application of these tools, like the precise questions in a semi-structured interview guide or participant exit survey, could vary slightly (for instance by adding 1 or 2 questions or topics) after publication of this deliverable as to capture the processes in MOVE21 in the best way during the project and make the applied protocols as specific to the project as possible based on current knowledge. However, it is important not to change recurring protocols too much to allow comparison between Living Labs and progress over the years. Preliminary versions of all data-gathering protocols are attached to this guide (Appendices 1 – 5). While these protocols are all tailored to MOVE21 and the various types of meetings and interactions expected to take place during this project, they are generally based on, and informed by, earlier EU-funded projects like RUGGEDISED (H2020), Atelier (H2020) and GLOBAQUA (FP7).

The repeated use of a limited set of monitoring methods will facilitate the kind of continuous learning that reflective practice seeks to enable. While variations on each tool are embedded in the reflective monitoring effort in MOVE21, the next section briefly describes the underlying logic and basic components of each method, followed by an overview of how these methods will be applied to the core processes that will be monitored, namely co-creation related to the ICCPs, innovation related to municipal agencies and implementation of public (and potentially corporate) policies.

4.1 Monitoring Methodologies

4.1.1 Logbooks

The main objective associated with the use of logbooks in MOVE21 is to consistently capture basic information about meetings and milestones in the participating cities. The logbook itself takes the form of a shared word document on MOVE21's workspace (cloud-based storage tool using Box, used for collaboration and document sharing). This format allows to quickly entering information like meeting dates and attendees, agenda items and key decisions. This type of information gathering will assist the reflective monitoring effort by enabling those actors not directly involved in a specific city to "follow along" with the process and interactions, but it will also make retrospective "process tracing" possible. For example, by tracking which individuals and organizations are present in key meetings over a longer period of time, insight will be gained into level(s) of involvement and engagement in the MOVE21 process.

As this is a continuous effort over the course of the project, the frequency with which the logbooks are to be updated is roughly once a month, in order to increase the reliability and precision of the information entered. The interactions and meetings in the Task Force as well as the ICCPs will be logged. In both cases, the Living Labs' project managers – together with "local monitors" (see section 5.1 for more information on the local monitor) –will be responsible for updating the logbooks at regular intervals. The logbook is described in *Appendix 1*.

4.1.2 Meeting Observations

To understand the roles and responsibilities of participants in the Task Forces and ICCPs, as well as the more subtle dynamics taking place during key interactions, the reflective monitoring effort will require meeting observations. In order to structure this form of evidence gathering, there are three meeting observation protocols (see *Appendix 2*), generally to be filled out by the local monitor. These protocols consist of a list of questions that seek to capture relevant information about the content and dynamics during and/or immediately after key meetings of the Living Lab Task Force and the ICCP. The distributed nature of MOVE21 participants and relevant actors necessitates a central strategy to gather information about multiple meetings across various locations and in several languages.

The local monitors are expected to fill out these protocols on a quarterly basis, totalling 4 observations per calendar year. The selection of which meeting(s) to observe is left up to the local monitor, with the understanding that selection criteria should include whether or not key decisions will be made at a specific meeting, if specific interactions are extra-ordinary or if attendance is particularly high (or low). Completing the protocol for a single meeting should require roughly 10-15 minutes, depending on the level of detail provided and the length of the meeting observed.

In addition to routine ICCP meetings, the MOVE21 project includes specific sessions on co-creation, knowledge brokerage and innovation capacity. During those meetings, structured observations can also provide useful evidence to inform reflections. When TNO staff is present at those meetings, they will consult with the Living Lab project managers and local monitors to determine the most appropriate person to fill out the structured observation protocol for that meeting.

4.1.3 Participant Exit Surveys

The impressions, opinions and levels of satisfaction among participants in MOVE21-related meetings are an important source of information which can inform goal-setting, meeting formats, procedural rules and decision-making. Gathering regular information about the ways in which multiple participants experience relevant meetings is part of the reflective monitoring effort. This data will be collected through questionnaires, including a mix of closed and open-ended questions. Five (slightly) different versions of these exit surveys are likely to be necessary, to capture specific elements of interests in the following meeting types (see *Appendix 3*).

- Task Force meetings (3A)
- ICCP meetings (3A)
- Co-creation sessions on specific MOVE21 solutions (3B)

- Knowledge brokerage sessions on specific topics in WP 3, 4, and 5 (3B)
- Dedicated training sessions on innovation capacity in the cities (3B)

In order to maximize the response rate of these surveys, they will be handed out (and returned) in hardcopy as much as possible. Local monitors will be responsible for the distribution and collection of the exit surveys, but data entry will take place at TNO. When necessary, due to social distancing requirement or other critical reasons, the surveys can also be distributed online, which will reduce data entry requirements.

Following the logic of the meeting observations, in which the local monitors apply the method to a meeting of their choice on a quarterly basis, the participant exit surveys will be distributed to all participants of a Task Force or ICCP meeting roughly 4 times per year. The occasion at which the survey is distributed can but does not have to be the same meeting that is entered into the observation protocol. Since the surveys are more likely to be filled out when written in the local language, the local monitors will collaborate with TNO staff to translate the relevant questionnaires. For the remaining three meeting types (co-creation, knowledge brokerage and innovation capacity training), TNO staff will prepare, distribute and collect the questionnaires, in English.

4.1.4 Semi-structured Interviews

In order to gather information about, make sense of, and meaningfully engage the complexity of the relevant socio-technical systems, in-depth conversations are necessary as part of the reflective monitoring effort in MOVE21. These will take the form of semi-structured interviews, enabling guided discussions about the processes of collaboration, innovation and implementation regarding the *system innovations* likely to be proposed, discussed and implemented within the context of MOVE21.

Semi-structured interviews are a form of information gathering that allow respondents to express frames, concepts and categories in response to a set of open-ended questions or prompts. Particularly in contexts with high levels of ambiguity and complexity, this method generates evidence that enables insights and observations based on emerging and/or unique features and dynamics, as opposed to more structured methods, like surveys, in which the creator of the questionnaire has to define and make explicit specific constructs and frames of interest.

The semi-structured interviews related to the reflective monitoring in MOVE21 will consist of one-on-one conversations, approximately 45-60 minutes in length and generally be conducted by TNO staff, potentially supported by the local monitor. There are five different interview guides (see *Appendix 4*), geared towards:

1) the establishment of the Task Force,
2) the baseline assessment of innovation capacity in the relevant municipal agencies,
3) progress and policy change(s) in year 3 of the project,
4) progress and policy change(s) in year 4 of the project,
5) innovation capacity assessment at the end of the project.

The interview guides are intentionally broad in scope and likely to change over the course of the project, in order to capture relevant trends and issues.

4.1.5 Innovation Capacity Survey

The ability of civil servants and their organizations to engage innovative technologies, processes and arrangements is central to the success of MOVE21, and socio-technical transitions more broadly. In order to assess, monitor, reflect on and ultimately enhance this capacity, TNO will conduct a series of baseline semi-structured interviews with municipal staff in Oslo, Gothenburg and Hamburg, followed by the broader electronic distribution of a standardized innovation capacity self-assessment survey to municipal staff in years 3 and 4 of the project. The specific wording of these surveys has not yet been determined, as the initial round of semi-structured interviews will inform the exact questions in these surveys. A mix of closed and open-ended questions is likely to be used. To maximize the response rate, local monitors might be asked to assist in translating these surveys, although distribution and collection

will be the responsibility of TNO. The initial draft of the Innovation Capacity Self-Assessment Survey is described in *Appendix 5*.

These monitoring methods connect to the specific processes at the centre of MOVE21 in multiple, sometimes overlapping ways. The next sections specify how each (version of) the five monitoring methods relate to those interactions.

4.2 Monitoring Innovation Co-Creation Partnerships

The Innovation Co-Creation Partnerships are at the centre of the MOVE21 project and will therefore be critical to the reflective monitoring effort as well. Several of the monitoring methods described in section 4.1 will be utilized related to the ICCPs. The table below outlines which activities will be monitored, which (versions of) the methods will be used, and which specific focal points will be embedded in the respective methods.

Table 1: Monitoring activities, methods and details related to ICCPs

Activity	Method and Version	Focus and Details
Task Forces	1: Logbook	Task Force meetings and representation
	2A: Meeting observation protocol for Task Force	Task Force meetings and roles, sense of ownership, community and/or shared responsibility
	4A: Semi-structured interview protocol	Representation in the Task Force, roles, sense of ownership, community, shared responsibility
ICCP meetings	1: Logbook	Establishment, meetings and representation in the ICCP
	2A: Meeting observation protocol for ICCP meetings	Role, tasks and representation of ICCP, topics discussed, processes and dynamics
	3A: Participant exit survey	Processes, dynamics and interactions of ICCP, satisfaction.
Co-creation sessions on MOVE21 solutions	1: Logbook	Number of sessions, objectives, involved parties, outcomes and follow-ups
	2B: Meeting observation protocol for co-creation	Meeting objectives, topics discussed, dynamics and interactions.
	3B: Participant exit survey for co-creation sessions	Processes, dynamics and interactions during sessions, satisfaction.
Knowledge brokerage sessions on specific topics with WP3, 4, 5	1: Logbook	Number of sessions, objectives, involved parties, outcomes and follow-ups.
	2B: Meeting observation protocol for knowledge brokerage	Meeting objectives, topics discussed; involved parties
	3B: Participant exit survey for knowledge brokerage session	Processes, dynamics and interactions during sessions, satisfaction.
Policy co-creation sessions amongst	1: Logbook	Number of sessions, objectives, involved parties, outcomes and follow-ups

policy makers from various domains	2B: Meeting observation protocol for co-creation	Meeting objectives, topics discussed, dynamics and interactions.
	3B: Participant exit survey for knowledge brokerage session	Processes, dynamics and interactions during sessions, satisfaction.
Sustaining the ICCP beyond the lifetime of the project	1: Logbook	Activities are taken up by the ICCP, involved parties, outcomes
	4C+4D: Semi-structured interviews for progress	Experiences with MOVE 21, lessons learned, future cooperation, sustainability of ICCP
	3A: Participant exit survey for ICCP	Overall satisfaction, expectations for future collaboration(s)

4.3 Monitoring Innovation Capacity

This section describes the methodologies used for monitoring the activities related to the Innovation Capacity. The table below provides a detailed schedule of the relevant methodologies (and versions), as well their focal points and goals.

Table 2: Monitoring activities, methods and details related to Innovation Capacity:

Activity	Method and Version	Focus and Details
Present state of Innovation Capacity (starting point)	4B: Semi-structured interview on Innovation Capacity baseline	Assess municipal leadership, organization, knowledge management, network and learning related to innovation
Progress of Innovation Capacity in the city	5: Standard innovation capacity survey (to be finalized through baseline interviews)	Monitor progress years 3 and 4
Dedicated training workshops and sessions on Innovation Capacity in the city	3B: Exit survey for Innovation Capacity sessions	Number and objectives of session, interactions and dynamics, outcomes, satisfaction
	2B: Meeting observation protocol for knowledge brokerage	Meeting objectives, topics discussed, dynamics and interactions.
Final state of Innovation Capacity (closing point)	4E: Semi-structured interview on Innovation Capacity progress	Changes in innovation capacity over the course of the project, bottlenecks observed/removed.

4.4 Monitoring Policy Coherence

This section describes the methodologies used for monitoring the activities related to the Policy Coherence. In the table below a first draft of the proposed methodologies is given – which needs to be detailed in the coming months.

Table 3: Proposed monitoring methodologies for Policy Coherence:

Activity	Method and Version	Focus and Details
Formulation of coordinated or integrated policy responses in the cities	1: Logbook	Which integrated policies/plans are discussed or related to discussions?
	2A: Meeting observation protocol	Agenda setting: which integrated issues are dealt with? By whom? How?
	4A: Semi-structured interview	Awareness of, and agreement about, specific framing of policy relevant issues amongst policy makers
Implementation of coordinated or integrated policy responses in cities	1: Logbook	Which integrated policies are implemented? When?
	4C+4D: Semi-structured interviews	Which integrated policies are implemented? Who were involved? By whom?
Remove obstructive local policies and regulations	1: Logbook	What obstructive policies/regulations for the innovations have been identified? How?
	4C+4D: Semi-structured interviews	What obstructive policies (municipal and otherwise) have been encountered, engaged or overcome? How? When?
Uptake of policies in the relevant city plans and strategies (e.g. SUMPs and SULPs)	4A: Semi-structured interviews	Assessment of the current (municipal) ambitions, visions, strategies (incl. SUMPS etc.) relevant to MOVE21
	4D: Semi-structured interviews	Assessment of how insights from MOVE21 impacted the ambitions, plans, strategies in year 4.
	1: Logbook	Decisions and dates related to changes in policies, plans and strategies

4.5 Validation of Reflective Monitoring results

The results of the Reflective Monitoring process will need to be validated for them to be incorporated in the deliverables D6.6 (Reflective Monitoring Interim Report), D6.7 (MOVE21 guide on improving city's capacities for promoting sustainable mobility and logistics innovations) and D6.8 (Practitioners' guide for setting up self-sustaining innovation co-creation partnerships). The monitoring activities create a continuous loop of observations, reflections and actions to improve the operations of the Living Labs and the deployment of innovations. For the validation of the lessons learned there are several activities planned in WP6 that should contribute to this.

For D6.6, the interim report, information is gathered through specific reflective monitoring activities up until that moment (including activities until Q2 2023). For the monitoring of the ICCPs and Policy Coherence this includes the logbooks, observations of the Task Force and ICCP meetings, exit surveys of co-creation and knowledge brokerage sessions as well as the interviews assessing the establishment of the Task Force and ICCP's. For Innovation Capacity the baseline interviews and the first training on Innovation Capacity will be included. In Q2 of 2023 validation and knowledge brokerage workshops will be organized to share results thus far, organize exchange on the insights as well as validating and completing insights to incorporate in D6.6. These workshops could be organized per Living Lab, per topic and/or combined (Replicator Cities are also invited for validation).

For D6.7, the guide on improving city's capacities for promoting sustainable mobility and logistics innovations, information is gathered specifically through the monitoring efforts on Innovation Capacity (in addition to other WP6 activities). The insights from the monitoring activities related to ICCPs and Policy Coherence will also be included when relevant. Included are – in addition to the insights gathered up until the interim report, the outcomes of the Innovation Capacity self-assessment tool and the results of the second training on Innovation Capacity. In Q2 2024, WP6 will organize validation and knowledge brokerage workshops to share results thus far, organize exchange on the insights as well as validating and completing insights to incorporate in D6.7 – from the reflective monitoring activities and results input will be given to these validation workshops. These workshops could be organized per Living Lab, per topic and/or combined (Replicator Cities are also invited for validation).

For D6.8, the practitioners' guide for setting up self-sustaining innovation co-creation partnerships, Information is gathered specifically through the monitoring efforts on ICCPs. The insights from the monitoring activities related to Innovation Capacity and Policy Coherence will also be included when relevant. Included are – in addition to the insights gathered up until the interim report, the outcomes of the progress interviews in 2023 and 2024, and the logbooks, observations and exit surveys that have been gathered up until Q3 2024. In Q4 2024, WP6 will organize validation and knowledge brokerage workshops to share results thus far, organize exchange on the insights as well as validating and completing insights to incorporate in D6.8 – from the reflective monitoring activities and results input will be given to these validation workshops. These workshops could be organized per Living Lab, per topic and/or combined (Replicator Cities are also invited for validation).

For all deliverables counts that we will ask the appointed local monitors to be involved in the process running up to writing the deliverables to make sure we pinpoint the most important insights from the Reflective Monitoring Process leading up to the due date of the deliverable.

5 Organisational Matters

This chapter specifies the distribution of tasks and roles within the reflective monitoring process throughout the years. The chapter will go into the practicalities of the monitoring. Finally, there is a sub-section on planning of the reflective monitoring activities in the project.

5.1 Practical information

The reflective monitoring is mainly the task of TNO. In chapter 3 and 4, the monitoring topics and activities with the corresponding methodologies are described. Although TNO will do most of the work for the reflective monitoring, TNO needs to interact with the Living Labs in order to get the required data and information. Input for reflective monitoring is gathered from the Living Labs – the 'subjects' of the monitoring activities – by interviews, surveys, observations and logbooks. The role of the Living Lab ecosystem in the monitoring process as well as the time it will consume is described in more detail in the appendices 1-5.

For the Reflective Monitoring, so-called 'local monitors' are appointed to be the eyes and ears in the Living Labs as TNO is not participating in these. A lot of the co-creation, co-innovation and co-implementation processes take place during regular meetings. The local monitors take part in the meetings to observe the process, or to hand out the exit surveys. The interaction in the Living Labs will mostly be done in the local language – which is another reason to appoint local monitors, who speak the local language. The local monitors can help in translating surveys or important documents and are a first contact point for the reflective monitoring team. For each Living Lab a local monitor is appointed that is part of the knowledge side of the collaboration structure. The local monitors will connect to the Living Lab Task Force and are therefore up to date on important events, steps that are being taken or meetings that are coming up that might be interesting to include in the reflective monitoring process. The local monitors are:

- **Oslo**: Marianne Stølan Rostoft (TOI)
- **Gothenburg**: Håkan Perslow (RISE)
- **Hamburg**: Sophie Naue (HCU)

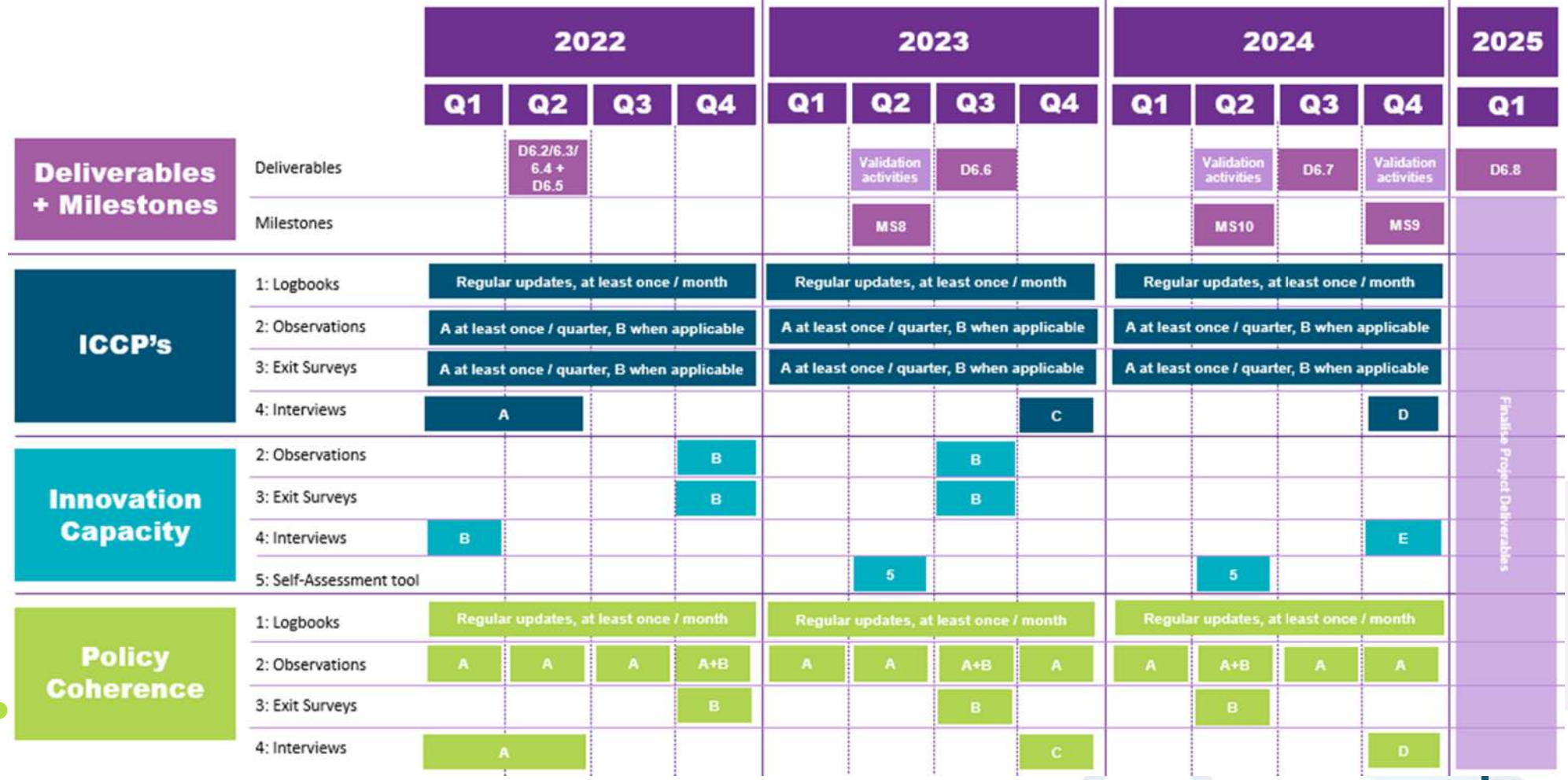
All Reflective Monitoring deliverables will be in English as well as some of the Reflective Monitoring activities (for example the interviews, conducted by TNO).

5.2 Conditions for successful monitoring

For the reflective monitoring observations and interactions to be fruitful, several basic conditions have to be met. The first is that the key actors are aware and broadly supportive of (or at least not fundamentally opposed to) the monitoring effort. The second is that the key actors, together, represent the organizations and/or communities of immediate relevance to the innovation and/or transition project at hand. In other words, questions (and reflections) about representation, participation and engagement form the basis of any reflective monitoring scheme, since the diversity and range of goals and decision-making procedures is at the heart of double-loop learning. These questions (and their answers) about representation, participation and engagement are frequently returned to regularly as new insights and learning outcomes make clear that additional (or different) organizations and/or communities need to be involved. The third condition is that the connection between the learning process and learning outcomes is (and remains) bi-directional, meaning that the revision of goals and decision-making rules results in the formulation of new monitoring questions, indicators and ultimately insights.

5.3 Planning and timeline

This section of the chapter provides an overview of Reflective Monitoring actions in a timeline. This overview also shows the connected parties or individuals and – if applicable – the connected protocols or methodologies.


2022
2023
2024
2025
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Deliverables + Milestones
Deliverables
D6.2/6.3/ 6.4 + D6.5
Validation activities
D6.6
Validation activities
D6.7
Validation activities
D6.8
Milestones
MS8
MS10
MS9
ICCP's
1: Logbooks
Regular updates, at least once / month
2: Observations
A at least once / quarter, B when applicable
3: Exit Surveys
A at least once / quarter, B when applicable
4: Interviews
A
C
D
Innovation Capacity
2: Observations
B
B
3: Exit Surveys
B
B
4: Interviews
B
E
5: Self-Assessment tool
5
5
Policy Coherence
1: Logbooks
Regular updates, at least once / month
2: Observations
A
A
A
A+B
A
A
A+B
A
A
A+B
A
A
3: Exit Surveys
B
B
B
4: Interviews
A
C
D
Finalise Project Deliverables

6 References

Argyris, C., & Schön, D. A. (1978). *Organizational Learning*. Addison-Wesley Pub. Co.

Beers, P. J., & Van Mierlo, B. (2017). Reflexivity and Learning in System Innovation Processes. *Sociologia Ruralis*, *57*(3), 415–436. https://doi.org/10.1111/soru.12179

Beers, P. J., van Mierlo, B., & Hoes, A.-C. (2016). Toward an Integrative Perspective on Social Learning in System Innovation Initiatives. *Ecology and Society*, *21*(1). https://www.jstor.org/stable/26270338

Forester, J. F. (2017). *Planning in the Face of Conflict: The Surprising Possibilities of Facilitative Leadership* (1st edition). Routledge.

Klaassen, P., Verwoerd, L., Kupper, F., & Regeer, B. (2020). Reflexive monitoring in action as a methodology for learning and enacting Responsible Research and Innovation. In *Assessment of Responsible Innovation*. Routledge.

Lewis, J. M., Ricard, L. M., & Klijn, E. H. (2018). How innovation drivers, networking and leadership shape public sector innovation capacity. *International Review of Administrative Sciences*, *84*(2), 288–307. https://doi.org/10.1177/0020852317694085

Meijer, A. (2019). Public Innovation Capacity: Developing and Testing a Self-Assessment Survey Instrument. *International Journal of Public Administration*, *42*(8), 617–627. https://doi.org/10.1080/01900692.2018.1498102

OECD. (2019). *Enhancing Innovation Capacity in City Government*. OECD Publishing. https://doi.org/10.1787/f10c96e5-en

Pallot, M. (2009). Engaging Users into Research and Innovation: The Living Lab Approach as a User Centred Open Innovation Ecosystem. *Webergence*. https://web.archive.org/web/20120509081658/http://www.cwe-projects.eu/pub/bscw.cgi/1760838?id=715404_1760838

Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, *4*(2), 155–169. https://doi.org/10.1007/BF01405730

Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.

Susskind, L., & van Maasakkers, M. (2012). Building Consensus for Sustainable Development. In K. Zoeteman, *Sustainable Development Drivers*. Edward Elgar Publishing. http://www.elgaronline.com/view/9780857934895.00024.xml

Timeus, K., & Gascó, M. (2018). Increasing innovation capacity in city governments: Do innovation labs make a difference? *Journal of Urban Affairs*, *40*(7), 992–1008. https://doi.org/10.1080/07352166.2018.1431049

Van Mierlo, B. (2010). *Reflexive monitoring in action: A guide for monitoring system innovation projects*. Wageningen UR, Communicatie en Innovatiestudies [etc. http://edepot.wur.nl/149471

Verwoerd, L., Klaassen, P., van Veen, S. C., De Wildt-Liesveld, R., & Regeer, B. J. (2020). Combining the roles of evaluator and facilitator: Assessing societal impacts of transdisciplinary research while building capacities to improve its quality. *Environmental Science & Policy*, *103*, 32–40. https://doi.org/10.1016/j.envsci.2019.10.011

7 Appendix

Appendix 1 – Logbook

The logbook is used for monitoring meetings within the Task Force as well as the ICCP. The main objective associated with the use of a logbook in MOVE21 is to consistently capture basic information about meetings and milestones in the participating cities. The logbook itself takes the form of a shared word document. This format allows for quickly entering information like meeting dates and attendees, agenda items and key decisions. This type of information gathering will assist the reflective monitoring effort by enabling those actors not directly involved in a specific city to "follow along" with the process and interactions, but it will also make retrospective "process tracing" possible. For example, by tracking which individuals and organizations are present in key meetings over a longer period of time, insight will be gained into level(s) of involvement and engagement in the MOVE21 process.

Below a short description of the range of meeting types about which we intend to gather information through the logbooks:

- Bilateral meetings between TNO staff and Task Force members
- Work Package meetings
- Task Force meetings
- Bilateral meetings between TNO staff and ICCP members
- Small group meetings which include two or more ICCP members
- Partnership meetings

Logbook

Goals: Capture basic information about meetings and milestones in the participating cities in a regular and consistent manner.

To be filled out by: Living Lab project manager (with others (e.g., local monitors, or TNO))

Estimated time commitment: 10 minutes for every entry

Frequency: Ongoing, updating at least once a month

Meeting Date	Meeting Type	Organisations Present	Topics (issues, opportunities, obstacles, policies discussed)	Decisions made, actions requested and/or direct outcomes	Relevant Work Package(s)
dd/mm/yy	Bilateral/ Task force/ICCP				

Appendix 2 – Observation Protocols

There are three types of observation protocols:

- **2A:** a meeting observation protocol for Task Force meetings and ICCP meetings
- **2B:** a meeting observation protocol for knowledge brokerage and co-creation sessions

These meeting observation protocols are designed to capture more specific information than the logbooks provide about key meetings. In addition to participants and topics, these protocols will allow for analyses of perceptions regarding progress and/or concern(s) related to the project(s) and interactional dynamics. Only one person (the local monitor for the Task Force and ICCP meetings, TNO staff for knowledge brokerage, co-creation and other special sessions) is required to fill out the relevant protocol, which should take no more than 10 minutes. By completing these protocols on a regular (once every quarter) basis, longer term trends and dynamics will become visible.

Appendix 2A – Meeting observation protocol for Task Force meetings & ICCP meetings

Goals:	Capture information about participant perceptions (related to progress, concerns, decisions and expected outcomes) and interactions during task force and ICCP meetings.
To be filled out by:	Local monitor
Estimated time commitment:	10 minutes for every entry
Frequency:	Ongoing, observing at least one meeting per quarter

Meeting type: please select which meeting type applies
Task Force Meeting / ICCP meeting

Meeting date/time:

Location:

Meeting Chairperson/Facilitator:

Attendees and Affiliations:

1. *Name, affiliation:*
2. *…, …*
3. …, …
4. …, …
5. …, …

Key Topics:

(Please provide a brief description of key topics, using key words or brief sentences. This can be based on a formal meeting agenda or direct observation during meeting based on time spent)

Area(s) of Progress:

(If new ideas emerged or particular options or choices appear to gain momentum during the meeting, please describe those here in keywords or brief sentences)

Issues of Concern:

(Please describe, in keywords or brief sentences, new or known challenges related to the activities of the Task Force/ICCP which were discussed during the meeting)

Decisions and Outcomes:

(If/when decisions or outcomes of direct relevance to the Task Force/ICCP activities are announced and/or taken during the meeting, please describe those here in keywords or brief sentences)

Atmosphere

(Please describe the general atmosphere, like were conflicts emerging?, how were they dealt with?, was there a balanced input from all partners?, etc.)

Additional Observations/Reflections:

(If/when other elements of the meeting appear noteworthy, like specific dynamics, attendee(s), opportunities or challenges, please enter them here)

Appendix 2B – Meeting observation protocol for Knowledge Brokerage and Co-Creation sessions

Goals	Capture information about participant perceptions (related to progress, concerns, decisions and expected outcomes) and interactions during knowledge brokerage, co-creation and other special sessions.
To be filled out by:	TNO staff
Estimated time commitment:	10 minutes for every entry
Frequency:	Ongoing, observing at least one meeting per quarter

Meeting date/time:

Location:

Meeting Chairperson/Facilitator:

Attendees and Affiliations:

1. *Name, affiliation:*
2. *…, …*
3. …, …

Session Objectives:

Were stakeholders involved in the preparation phase of the knowledge brokerage/co-creation session, and for which specific purpose(s)?

-Determination of specific objectives;
-Discussion of relevant types/sources of knowledge/expertise;
-Preparation of agenda-items and activities;
-Discussion of invitation list and/or strategy
-other, ...

Provide a brief description of key goals for the session, using key words or brief sentences. This can be based on a formal meeting agenda or direct observation during meeting based on objectives:

-Objective 1: …

-Objective 2: …

Session Dynamics/Interactions:

Who was the facilitator of the knowledge brokerage/co-creation event?

1. Members of task force/ICCP
2. One of the stakeholders:
3. Knowledge institutes
4. Citizens, civil society organisations
5. Policy makers
6. Industries
7. External professional facilitator
8. Other……..

What form(s) of interaction took place during the session, and what did they result in?

1. Presentation (describe topic)
2. Question and Answer session (describe topic(s)
3. Facilitated discussion (describe topics and area(s) of (dis)agreement
4. Informal interaction

Were new collaborations developed or existing ones changed? How?

Session Outcome(s):

What is the outcome of the event? (please elaborate in terms of...)

1. Specific actions/follow-ups agreed upon during meeting:…..
2. A new initiative:…….
3. Better shared or new knowledge:…….
4. A new product:……..
5. A new service:……..
6. New or better policy:……
7. Other:……..

Atmosphere

(Please describe the general atmosphere, like were conflicts emerging?, how were they dealt with?, was there a balanced input from all partners?, etc.)

Additional Observations/Reflections:

(If/when other elements of the meeting appear noteworthy, like specific dynamics, attendee(s), opportunities or challenges, please enter them here)

Appendix 3 – Exit Surveys

There are five types of Exit Surveys:

- **3A:** Exit Survey for Task Force meetings and ICCP meetings
- **3B:** Exit Survey for Co-Creation Sessions, Knowledge Brokerage Sessions and Innovation Capacity Sessions

These exit surveys gather information about all participants in various meeting types, about their experiences during and satisfaction with specific events. For the purposes of reflective monitoring, this will provide evidence of individuals' perceptions of MOVE21-related sessions. One person (the local monitor for Task Force and ICCP meetings, TNO staff for knowledge brokerage, co-creation and other special sessions) will disseminate and collect the relevant survey, asking all participants to complete it at the end of the relevant meeting (which should take no more than 10 minutes or so).

Appendix 3A – Participant exit survey for Task Force and ICCP meetings

Goals:	Gather information from all participants about their experiences during, and satisfaction with, MOVE21-related meetings.
To be filled out by:	Meeting participants
Translated by	Local monitor
Disseminated by:	Local monitor
Estimated time commitment:	30 minutes for translation, 1 hour to print, distribute and mail to TNO
Frequency:	Distributed after at least one meeting per quarter

Introduction to the survey

Dear participant of the MOVE21 project, in the next pages you will find a questionnaire by which we will follow the **[Task Force/ICCP]** meetings in MOVE21. This reflective monitoring is part of the activities of WP6 and will provide the overall project management, WP-leaders, Task Force members and ICCP members feedback information on the progress of the innovation and decision-making processes during the lifetime of the project.

The questionnaire will take about 5 minutes to fill out. Respondents will stay anonymous.
For more information about the survey, you can contact Marjolein Heezen (marjolein.heezen@tno.nl) or Geiske Bouma (geiske.bouma@tno.nl).

Survey Questions:

1. Meeting type: please select which meeting type applies
    a. Task Force Meeting
    b. ICCP meeting

2. What is your organizational background? (please select one category, which most effectively describes the organization on whose behalf you are serving in the task force)
    a. Government
    b. Business
    c. Research organizations
    d. Civil Society
    e. Other,...

3. On a scale from 1 to 10, how would you rate this meeting? Please elaborate why.

…….
…….
…….
…….
…….

4. Meeting experience and satisfaction questions.

Please indicate to what extent you agree with all of the following statements about today's meeting.	Strongly disagree	Somewhat disagree	Not sure	Somewhat agree	Strongly agree
The meeting had clear objectives					
The meeting was successful in advancing the task force responsibilities					
The meeting allowed me to represent my organization's perspectives and interests					
The meeting provided new insights					
Important decisions were made during the meeting					

The meeting was well facilitated					
The overall agenda was suitable					
The other participants were willing to listen to my contributions					
The meeting helped me to structure my own thoughts					

5. Could you describe the objective(s) of today's meeting, in your own words?

……
……
……
……
……
……
……
……

6. What was the most important insight, topic or decision that was discussed during today's meeting?

……
……
……
……
……
……
……
……

7. Were any issues or decisions left unresolved at today's meeting? Which one(s)?

……
……
……
……
……
……
……
……

Appendix 3B – Participant exit survey for Co-Creation, Knowledge Brokerage and Innovation Capacity sessions

Goals:	Gather information from all participants about their experiences during, and satisfaction with, MOVE21-related meetings.
To be filled out by:	Meeting participants
Translated by	TNO staff
Disseminated by:	TNO staff
Estimated time commitment:	1 hour to print, distribute and enter results
Frequency:	Distributed after each session (or once per quarter)

Introduction to the survey
Dear participant of the MOVE21 project, in the next pages you will find a questionnaire by which we will follow the **[co-creation sessions/knowledge brokerage sessions/innovation capacity sessions]** in MOVE21. This reflective monitoring is part of the activities of WP6 and will provide the overall project management, WP-leaders, task force members and the ICCP feedback information on the progress of the innovation and decision-making processes during the lifetime of the project.

The questionnaire will take about 5 minutes to fill out. Respondents will stay anonymous.
For more information about the survey, you can contact Marjolein Heezen (marjolein.heezen@tno.nl) or Geiske Bouma (geiske.bouma@tno.nl) (TNO).

Survey Questions:

1. Meeting type: please select which meeting type applies
    a. Co-Creation session
    b. Knowledge Brokerage
    c. Innovation Capacity Sessions/trainings

2. What is your organizational background? (please select one category, which most effectively describes the organization on whose behalf you are serving in the task force)
    a. Government
    b. Business
    c. Research organizations
    d. Civil Society
    e. Other,...

3. On a scale from 1 to 10, how would you rate this meeting? Please elaborate why.
…….
…….
…….
…….
…….

4. Meeting experience and satisfaction questions.

Please indicate to what extent you agree with all of the following statements about today's session.	**Strongly disagree**	**Somewhat disagree**	**Not sure**	**Somewhat agree**	**Strongly agree**
The session had clear objectives					
The session allowed me to represent my organization's perspectives & interests.					
The session provided new insights.					
Important decisions were made during the session.					

The session offered a balanced and comprehensive mix of interests and knowledge					
I felt comfortable in the session					
The other participants were willing to listen to my contributions					
The session helped me to get to know the other participants better					
The session helped me to learn about the project					
The session helped me to share my views and opinions with others					
The session helped me to structure my own thoughts					

5. Could you describe the objective(s) of today's meeting, in your own words?

.....
.....
.....
.....
.....
.....
.....
.....

6. What was the most important insight, topic or decision that was discussed during today's meeting?

.....
.....
.....
.....
.....
.....
.....
.....

7. Were any issues or decisions left unresolved at today's meeting? Which one(s)?

.....
.....
.....
.....
.....
.....
.....
.....

Appendix 4 – Semi-structured Interview Protocols

There are five types of Semi-structured Interview Protocols:

- **4A:** Semi-structured Interview Protocol for Task Force Establishment
- **4B:** Semi-structured Interview Protocol for Innovation Capacity Baseline
- **4C:** Semi-structured Interview Protocol for Project progress year 3
- **4D:** Semi-structured Interview Protocol for Project progress year 4
- **4E:** Semi-structured Interview Protocol for Innovation Capacity Exit Interview

These protocols will assist in guiding the interviews to gather highly specific, nuanced and complex information from the respondents. In-depth, semi-structured interviews allow respondents to describe, in their own words, particular dynamics, interactions and (expected) outcomes. These interviews will be conducted by TNO staff, potentially supported by local monitors regarding tasks such as respondent identification, translation, or interpretation. The semi-structured interview protocols for assessing progress in year 3 and 4 (4C and 4D) use the same questions and are therefore described only once.

Appendix 4A – Semi-structured interview protocol for Task Force establishment

Goals:	Gather detailed information and perspectives on the first phase of the Task Force, to inform the creation of the ICCP. Outcomes intended to inform the Living Labs establishment report (Deliverable 6.5).
Interview respondents:	Task Force members (involved in the first year of the project)
Interviews conducted by:	TNO
Estimated time commitment:	1 hour per interview, 4-5 interviews per task force
Frequency:	Once

1. What is your professional background?
    a. *Training*
    b. *Length of time at current organization and/or in current role*
2. Can you briefly describe the organization (if any) you work for?
    a. *Size*
    b. *Substantive focus/responsibilities*
    c. *Types of expertise*
3. Can you describe your role in the development of the MOVE21 Task Force?
    a. *Municipal official*
    b. *Research Organization*
    c. *Business*
    d. *Community representative*
    e. *Other,..*
4. Can you describe the process of creating the Task Force for this project, to the best of your knowledge?
    a. *Recruitment,*
    b. *Selection, selection criteria*
    c. *Facilitation,*
    d. *Definition of tasks/responsibilities*
    e. *Translation of outcomes into action*
5. Can you describe the frequency and dynamics of the Task Force meeting(s)?
    a. *Key topics*
    b. *Challenges and opportunities*
    c. *Recurring dynamics*
    d. *Decision-making procedures*
6. How would you describe the relationship between the Task Force and the broader innovation community in your city?
    a. *Testing ideas to receive focused feedback*
    b. *Negotiating potentially controversial issues*
    c. *Gathering local knowledge*
    d. *Gathering expert knowledge*
    e. *Generating enthusiasm and interest in overall planning process*
    f. *…*
7. Would you describe the process and function(s) of Task Force formation and utilization in this case typical, based on your experience?
8. How would you describe the future of innovation and collaboration related to mobility and logistics in this city, beyond the MOVE21 project? Do you expect (some of) the potential partners will continue to collaborate? If so, on what kind(s) of projects? Where are the resources for that collaboration likely come from?
9. Are there specific Task Force members or other relevant actors in this process that you'd recommend we speak with as part of this research project?
10. Which municipal (or national) policies and ambitions are most relevant for your Living Lab?
    a. *E.g. SUMPs/SULPs/SECAPs*
    b. *Mobility specific policies and ambitions*
    c. *Non-mobility related policy and plans*

11. Is there anything we forgot to ask? In other words, is there anything specific about the Task Force or the MOVE21 project that you believe we should be aware of, given the conversation we just had?

Appendix 4B – Semi-structured interview protocol for Innovation Capacity baseline

Goals:	Gather detailed information and perspectives on existing innovation capacity within relevant municipal agencies, to inform the creation of the innovation capacity survey (self-assessment tool). Together with the self-assessment tool and its outcomes, these interviews will contribute to deliverable 6.7, the MOVE21 guide on improving city's capabilities for promoting sustainable mobility and logistics innovations.
Interview respondents:	Municipal staff relevant to innovation in mobility and logistics
Interviews conducted by:	TNO
Estimated time commitment:	1 hour per interview, 4-5 interviews per city
Frequency:	Once

Introduction:

For Reflective Monitoring purposes, as part of the activities of WP6, Innovation Capacity is 'measured' in the project. The measuring of Innovation Capacity is done in three different ways: a baseline interview, a self-assessment tool and an exit interview. These three ways of monitoring are developed to determine the present state of innovation capacity at different moments during the project. These snapshots allow an insight in the innovation capacity of the cities and the specific elements the cities need to adjust and improve. To start off, a baseline interview is done, of which the semi-structured interview protocol can be found below.

Interview Protocol for Baseline Interview:

In order to evaluate the present state innovation capacity in each city – and to establish a baseline – an interview protocol is developed. This interview takes place in the first year of the project.

Leadership

1. Can you tell us something about the innovation strategy? Is there a clear vision/ambition?
2. Can you tell us about the connection with public leaders (administrative management) within the city?
3. To what extent do public leaders (mayor/aldermen) engage in/support urban logistics and mobility innovation?
4. Is there, in your opinion, sufficient political support for innovation in the municipality/city/project? How is that reflected?

Organisation

5. What does the collaboration between different departments and levels within the municipality look like? Is there mutual trust?
6. Is there room and flexibility to experiment with innovative practices/materials/technologies? Are there dedicated teams that know how to co-create and support innovations?
7. Is risk-taking encouraged? How is that expressed? Are people generally allowed to find and act on opportunities?
8. Are there any (Human Resource Management (HRM)) policies or incentive schemes that reward activities and behaviour that will generate and support innovations?
9. How do employees and their superiors react to failure? How are potential failures addressed?
10. Are there sufficient resources for innovation? What resources do you think are needed?

Knowledge management

11. Can you elaborate on the networks in which knowledge is (developed and) shared?
12. Are there mechanisms to collect and disseminate knowledge within the municipality/project organisation?
13. How do you embed new knowledge in the existing structure of the municipality/project organisation?
14. Is the municipality/project organisation able to mobilise the appropriate technology for urban logistics and mobility innovation? Can you elaborate?

15. Is the municipality/project organisation able to identify potential risk/side-effects of urban logistics and mobility innovation?

Network

16. What kind of actors are involved in the project? And to what extent are they engaged?
17. What networks related to urban logistics and mobility innovation are you engaged in? Both internal (within the municipality or project organisation) and external (with other parties in the cities).
18. To what extent is networking encouraged within your organisation? Is there time and budget allocated to networking?

Learning

19. How are innovations and their implementation evaluated? What are the strategies for this?
20. How do you ensure that lessons learned from a project are retained in your own organisation?
21. How do projects like MOVE21 relate to your daily work?
22. How would you describe the employees' attitude towards innovation and change? Within the municipality and within the project.

Appendix 4C + 4D – Semi-structured interview protocol Project progress in year 3 and year 4

Goals:	Gather detailed information and perspectives on the ICCP, to inform the maturing of the ICCP. Outcomes intended to inform the Reflective Monitoring interim report (Deliverable 6.5, year 3 interviews) and the Practitioners' guide for setting up self-sustaining innovation co-creation partnerships (Deliverable 6.8, year 4 interviews).
Interview respondents:	ICCP members
Interviews conducted by:	TNO
Estimated time commitment:	1 hour per interview, 4-5 interviews per ICCP
Frequency:	Once (once 4C in Q4 2023, once 4D in Q4 2024)

1. What is your professional background?
    a. *Training*
    b. *Length of time at current organization and/or in current role*

2. Can you briefly describe the organization (if any) you work for?
    a. *Size*
    b. *Substantive focus/responsibilities*
    c. *Types of expertise*

3. Can you describe your role in the development of the MOVE21 project?
    a. *Municipal official*
    b. *Research Organization*
    c. *Business*
    d. *Community representative*
    e. *Other,..*

4. Can you describe the process of MOVE21, to the best of your knowledge?
    a. *Recruitment,*
    b. *Selection, selection criteria*
    c. *Facilitation,*
    d. *Definition of tasks/responsibilities*
    e. *Translation of outcomes into action*

5. Can you describe the frequency and dynamics of MOVE21 meeting(s)?
    a. *Key topics*
    b. *Challenges and opportunities*
    c. *Recurring dynamics*
    d. *Decision-making procedures*

6. How would you describe the relationship between MOVE21 and the broader innovation community in your city?
    a. *Testing ideas to receive focused feedback*
    b. *Negotiating potentially controversial issues*
    c. *Gathering local knowledge*
    d. *Gathering expert knowledge*
    e. *Generating enthusiasm and interest in overall planning process*
    f. *…*

7. Would you describe the process and function(s) of MOVE21 typical, based on your experience?

8. How would you describe the impact(s) of the MOVE21 project in your city?
    a. Physical interventions

b. Societal/community changes
c. Policy and/or governance changes
d. New actors
e. New relationships/dynamics
f. …

9. What are your observations about the range of policies that affect and are affected by the MOVE21 project? How do these policies (existing or new) work together or operate in divergent ways?

10. How would you describe the future of the ICCP, beyond the MOVE21 project? Will these partners continue to collaborate? If so, on what kind(s) of projects? Where are the resources for that collaboration coming from?

11. Are there specific MOVE 21 stakeholders or other relevant actors in this process that you'd recommend we speak with as part of this research project?

12. Is there anything we forgot to ask? In other words, is there anything specific about MOVE21 or this broader process that you believe we should be aware of, given the conversation we just had?

Appendix 4E – Semi-structured interview protocol for Innovation Capacity Exit Interview

Goals:	Gather detailed information and perspectives on innovation capacity within relevant municipal agencies at the end of the project, to assess the extent (if any) of the creation of the innovation capacity during the MOVE21 project. The outcome will contribute to D6.8, the Practitioners' guide for setting up self-sustaining Innovation Co-Creation Partnerships.
Interview respondents:	municipal staff relevant to innovation in mobility and logistics
Interviews conducted by:	TNO
Estimated time commitment:	1 hour per interview, 4-5 interviews per city
Frequency:	Once

Introduction:

For Reflective Monitoring purposes, as part of the activities of WP6, Innovation Capacity is 'measured' in the project. The measuring of Innovation Capacity is done in three different ways: a baseline interview, a self-assessment tool and an exit interview. These three ways of monitoring are developed to determine the present state of innovation capacity at different moments during the project. These snapshots allow an insight in the innovation capacity of the cities and the specific elements the cities need to adjust and improve. To close off, this interview protocol will be used as a final exit interview on Innovation Capacity in MOVE21.

Interview Protocol for Exit Interview* - DRAFT*:

In order to evaluate the state innovation capacity in each city at the end of the project an interview protocol is developed. This interview takes place in the last year of the project. Since the actual interview is far into the future, the questions that are asked in year 4 of the project might be slightly different from the questions presented below. This protocol provides an initial draft based on what is expected to be relevant information in year 4 on the topic of Innovation Capacity.

Leadership

1. To what extent did you manage to fulfil the projects ambitions?
2. In hindsight, what would you change in the strategic approach?
3. Can you tell us about the connection with public leaders (administrative level) within the city? Were they able to find and connect the right actors?
4. To what extent did public leaders engage in/support urban logistics and mobility innovation?
5. Was there, in your opinion, sufficient political support for innovation in the municipality/city/project? How is that reflected?

Organisation

6. What does the collaboration between different departments and levels within the municipality look like? Was there enough trust? Where do you see room for improvement?
7. Was there room and flexibility to experiment with innovative practices/materials/technologies?
8. Was risk-taking encouraged? How was that expressed? Were people generally allowed to find and act on opportunities?
9. Were there sufficient resources (financial/human/time) allocated for innovation? What resources do you think are further needed/missing?

Knowledge management

10. Can you elaborate on the networks in which knowledge is (developed and) shared?
11. Were there mechanisms to collect and disseminate knowledge within the municipality/project organisation?
12. How do you embed new knowledge in the existing structure of the municipality/project organisation?
13. Was the municipality/project organisation able to mobilise the appropriate technology for urban logistics and mobility innovation? Can you elaborate?
14. Was the municipality/project organisation able to identify potential risk/side-effects of urban logistics and mobility innovation? Can you give an example?

Network

15. What kind of actors were involved in the project? How did they collaborate?
16. What networks related to urban logistics and mobility innovation were you engaged in? Both internal (within the municipality or project organisation) and external (with other parties in the cities).
17. Did you join any new networks or are new networks formed? And if so, how do you plan on keeping these networks stable?

Learning

18. How are innovations and their implementation evaluated in this project?
19. How did you experience setting up experiments (such as the zero emission logistics hubs) in this project? Where do you see points of improvement?
20. How did you experience scaling up experiments? Where do you see points of improvement?
21. How do you ensure that lessons learned from this project are retained in your own organisation?
22. How would you reflect on the experimental collaboration with governments, companies and societal organizations? And how do you shape them to become more structural forms of collaboration?

Appendix 5 – Innovation Capacity Survey (self-assessment tool)

Goals:	Gather information from range of municipal staff-members about the way(s) in which innovations are dealt in their respective agencies/ units. The outcomes will contribute to deliverable 6.7, the MOVE21 guide on improving city's capabilities for promoting sustainable mobility and logistics innovations.
Respondents:	municipal staff relevant to innovation in mobility and logistics
Survey translated by:	local monitors
Survey distributed by:	TNO
Estimated time commitment:	1 hour for translation, 15 minutes to complete survey, 1 hour to distribute and collect
Frequency:	Twice, Q2 of 2023 and Q2 of 2024

Introduction:
For Reflective Monitoring purposes, as part of the activities of WP6, Innovation Capacity is 'measured' in the project. The measuring of Innovation Capacity is done in three different ways: a baseline interview, a self-assessment tool and an exit interview. These three ways of monitoring are developed to determine the present state of innovation capacity at different moments during the project. These snapshots allow an insight in the innovation capacity of the cities and the specific elements the cities need to adjust and improve. The self-assessment tool is a survey that could be filled out by relevant stakeholders in the municipality to assess the current state of Innovation Capacity in the city.

***Self-assessment tool* – DRAFT:**
To further assess the innovation capacity of cities during the project, a self-assessment tool will be developed. A set of proposed statements is shown below. These statements give an overview of the elements that will be monitored. Based on the collected data from the baseline interviews, the statements and scales will be further specified. The self-assessments will take place in 2023 and 2024. The output from the first self-assessment will also be used to scope second the knowledge exchange session (training) on Innovation Capacity, where the Living Lab partners as well as the Replicator Cities will take part in. Both self-assessments will contribute to writing D6.7.

According to Meijer (2019), for each element of innovation capacity a number of statements about the status quo in city X are presented. Respondents use a Likert scale to indicate to what extent they agree or disagree with the statement. On the basis of these statements, a scale is made for each element. This will provide cities with an overview of their current innovation capacity and indicates areas of improvement. A number of statements are similar to statements as used by Meijer (2019, p. 623), the remaining statements have been added on the basis of literature research.

City X in the questionnaire below is either Oslo, Gothenburg or Hamburg. The questions are about: urban logistics and mobility innovation. This list presents the topics of interests while filling out the self-assessment tool however the statements itself and the scale need to be defined and finalized *and* tested before application in MOVE21.

Leadership

- City X has a **clear vision** on urban logistics and mobility innovation.
- Public leaders (administrative management) in City X succeed in **stimulating the development** of **new ideas** on urban logistics and mobility innovation among colleagues in the city.
- Political leaders (mayor and aldermen) in City X strongly **encourage efforts** on urban logistics and mobility innovation.
- Public leaders in City X know how to **find and connect the actors** involved in urban logistics and mobility innovation.

Organisation

- Employees in city X with ideas about urban logistics and mobility innovation easily **find the right people to jointly realize these ideas**.
- City X allocates **sufficient time, resources and personnel** to innovate and experiment with urban logistics and mobility.
- City X has an **organisational culture** that stimulates urban logistics and mobility innovation.
- Employees in City X feel comfortable to **take risks, experiment and make mistakes** in their work.
- There is **mutual trust** between the employees in different departments and levels in City X.

Knowledge management

- There is a good **exchange of knowledge** on urban logistics and mobility innovation between all actors in City X.
- City X has well established **structures through which knowledge about urban logistics and mobility innovation becomes embedded** in documents, processes and routines.
- City X knows how to **mobilise the right technology** for urban logistics and mobility innovation.
- Knowledge and ideas about urban logistics and mobility innovation are also **shared with external parties** within City X.
- There is budget available for **knowledge build-up and exchange.**

Network

- The people involved in urban logistics and mobility innovation in City X have enough time and budget to **engage companies, research institutes and citizens** in the development of new ideas.
- A company, research institute or citizen with good ideas for urban logistics and mobility innovation **easily finds the right person within City X** to develop these ideas further.
- City X has a **strong structural network** of companies, research institutes and citizens connected to urban logistics and mobility innovation.
- City X has a **strong internal network** of employees with an interest in urban logistics and mobility innovation.
- City X succeeds in forming meaningful relationships between actors in **informal networks**, based on trust and intrinsic motivation.

Learning

- City X successfully **embeds lessons learned** from projects such as MOVE21 in its formal structures.
- Employees of City X are open to change and **a new way of doing and thinking**.
- City X succeeds in turning experimental collaboration with governments, companies and societal organizations such as in MOVE21 into **structural forms of collaboration**.
- City X is successful in **setting up experiments** such as zero emission logistics and mobility hubs.
- City X is successful in **scaling up experiments** such as zero emission logistics and mobility hubs.
- City X **evaluates** experiments with urban logistics and mobility innovation.

Appendix 6 – Innovation Capacity introduction and operationalisation

One of the goals in WP6 is to ensure that the Living Labs apply the same methodology and principles when designing activities and proposed solutions. The cities will be in the lead for establishing Living Labs and each will experiment with mobility and logistics innovations through Innovation Co-creation Partnerships, improving innovation capacity, and developing policies to support the take up of innovations in each city:

1. Establish effective and self-sustaining MOVE21 Innovation Co-creation Partnerships in the cities of Oslo, Gothenburg and Hamburg.
2. Develop supportive policies for the Innovation Co-creation Partnerships and their urban mobility and logistics innovations and consolidate these.
3. Establish a dedicated knowledge brokerage process to support collaborating parties with relevant knowledge from WP3, WP4 and WP5.
4. Capture best practices and lessons learned from the operation of the Living Labs on partnership development and supportive policies.
5. Support efforts to maximise uptake, increase upscaling and replication.

In line with this, public organisations find it increasingly important to innovate and to enable themselves to develop new approaches to contemporary societal issues (Meijer, 2019). The ability to do so is called innovation capacity (Ibid). Innovation capacity refers to the human, financial and institutional resources and skills that can catalyse, implement and promote innovative, collaborative, long-term bottom-up solutions (OECD, 2019). Lewis et al. (2018) define innovation capacity as the set of conditions that support innovation or provide a supportive infrastructure; it is the set of factors that enable or actively encourage innovation. It refers to the competences that public sector organisations need to mobilise resources for the development and implementation of innovations (Timeus & Gascó, 2018). Thus, with the concept of innovation capacity, the focus shifts from 'how many innovations has the organisation pursued?' to 'Is the organisation capable of developing new solutions?' (Timeus & Gascó, 2018, p. 4).

The innovation capacity in each city is fostered through a) short evaluations of the present state on innovation capacity and outlooks for improvement; b) dedicated sessions and trainings on aspects that need improvement, for instance on how to deal with organizational issues or improving knowledge management; c) knowledge brokerage sessions in the Living Labs to deliver state of the art information and knowledge relevant for increasing innovation capacity.

MOVE21's Grant Agreement focuses on three interdependent pillars to improve Innovation Capacity in this project for the Living Lab cities. These pillars are: organisation; technology, data and knowledge management; and partnerships. Within these pillars relevant innovative capabilities for cities are highlighted. Based on these three pillars, an operationalisation of Innovation Capacity to support the reflective monitoring activities as well as innovation capacity building has been developed. This operationalisation contains five elements of innovation capacity, being: leadership, organisation, knowledge management, network and learning.

- **Leadership**
  Transformational, connective leadership plays an important role in the realisation and institutionalisation of innovations. Important aspects are: having an innovation vision and strategy, inspiring, motivating and supporting (administrative) leaders, having dedicated, cross-sectoral teams for innovation, and political support.
- **Organisation**
  An innovative organisational climate is important for developing innovation capacity. Public organization are often risk averse, while they should mobilize sufficient resources for innovation and experimentation. Important aspects are: culture, governance structures, access to funding, HRM policies and incentive schemes and attitudes towards risk. Furthermore, strong internal communication horizontally and vertically will increase the innovation capacity.
- **Knowledge management**

Municipalities with a free flow of knowledge and data are better able to increase their innovation capacity. They should be sharing knowledge across organisational boundaries and have structures in place to salvage the knowledge within the organization. Access to and the ability to share and deal with knowledge, data and technologies is important to support, uptake and upscale innovations.

- **Network**
  The presence of strong internal and external networks has a positive influence on innovation capacity. This includes cooperation with various actors outside the public sector and to gain trust within those networks, collaboration structures and partnership models as well as (quadruple helix) stakeholder representation and involvement.
- **Learning**
  Innovation cannot take place without learning. Organisations should strive to become a learning environment by continuously experimenting and embedding new ways of working into existing processes. This takes place in a continuous process of action and reflection.