Interreg North Sea

Co-funded by the European Union

ShareDiMobiHub

Digitalisation plan – Vervoerregio Amsterdam

Output indicator

16-09-2025

Bram Nieuwstraten (Vervoerregio Amsterdam)

Summary sheet

Project Name	**ShareDiMobiHub**
Title of the document	Output indicator: Digitalisation Plan
Deliverable	-
Work Package	2
Programme	Interreg NSR
Coordinator	Vervoerregio Amsterdam
Website	https://www.interregnorthsea.eu/sharedimobihub
Author	Bram Nieuwstraten
Status	Final
Dissemination level	Public
Reviewed by	
Submission date	September 2025
Starting date project	September 2022
Number of months	36

Project partners

Organisation	Abbreviation	Country
Province of Utrecht	ProvU	Netherlands
Capital Region of Denmark	CRD	Denmark
Vestfold county	VTFK	Norway
Subpartner: Statens vegvesen	SVV	Norway
Subpartner: Tønsberg kommune	TK	Norway
Promotion of Operation Links with Integrated Services	POLIS	Belgium
City of Amsterdam	AMS	Netherlands
City of Leuven	LEU	Belgium
University of Antwerp	UAntw	Belgium
Transport Authority for the Amsterdam Region	VRA	Netherlands
Mpact	Mpact	Belgium
Autodelen.net	Auto	Belgium
City of Rotterdam	ROT	Netherlands
Hamburg University of Applied Sciences	HAW	Germany
University of Applied Sciences Utrecht	HU	Netherlands

Document history

Version	Date	Organisation	Main area of changes	Comments
1.0	16-09-2025	Vervoerregio Amsterdam	First concept	

Table of Contents

1. Introduction

The ShareDiMobiHub project is a European collaboration of cities, regions and scientific offices on the topics of Shared Mobility and digitalization of Mobility, focusing on hubs. Hence the abbreviated name. It is part of the Interreg North Sea Region program. This deliverable describes the efforts taken and ambitions still-present by Vervoerregio Amsterdam Transport Authority. Vervoerregio is one of the partners within ShareDiMobiHub that indicated efforts on digitalization. Other partners made similar reports, if relevant. These can be accessed through https://www.interregnorthsea.eu/sharedimobihub.

Vervoerregio Amsterdam is the Transport Authority for the Amsterdam region. A collaboration of 14 municipalities, separately funded by the Dutch national government, we have to ensure connectivity within Amsterdam and its surroundings. We strongly believe in a more digital future of mobility services. Our goal is to enrich public transport and its use, to encourage more sustainable mobility choices.

Currently, sustainable mobility choices are not really being made attractive, at least from a digital perspective. The following outcomes will contribute to this:

1. **A new Mobility as a Service concept:**
   The Amsterdam region currently lacks a neutral, combined payment structure for mobility tickets, and promoting for certain groups trail offerings, reductions, savings are hard to organize. This is unwanted, because usage of PT and Shared Mobility needs to be stimulated if we want to provide a reasonable alternative to car usage. During covid-times we had a bad experience with MaaS, stalling this idea for a while.

   Process:
   December 2022: emergence of *new* idea. A structure with which *we* can provide better tariffs and offering for specific challenges
   October 2024: formulation of specific challenges
   July 2025: agreement between regional partners on scope
   November 2025: tendering

2. **Integrated tariffs/rates for both PT and Shared Mobility:**
   A big advantage of Public Transportation is its understandable -but not necessarily encouraging- tariffs. Interoperability of tariffs exist within the regional PT-domain but has not been organized between modes. This also provides data insights in usage and a wish for mobility in general.

   Process:
   January 2022: Start tendering process new regional PT-contract (existing legal & financial requirement)
   December 2022: Regional PT-contract awarded, with more provisions for collaboration.
   December 2022: Projectstart Regional Shared Mobility (RSM): no scope, requirement and finance (yet)
   December 2023: First phase RSM concluded: Political will secured, scope: shared cars, mopeds and bikes
   December 2023: Start of new regional PT-contract with more provisions for collaboration.
   February 2024: Start tendering process new city PT-contract (existing legal & financial requirement)
   December 2024: Second phase RSM concluded: A contract for mopeds and bikes.
   August 2025: New city PT-contract awarded, with more provisions for collaboration.

December 2025: Third phase RSM to be concluded: Get municipalities to join the tender.
July 2026: Tendering contracts for bikes and mopeds, including payment structures
November 2026: Awarding contracts for bikes and mopeds
January 2027 and onwards: Start of contracts for bikes and mopeds

3. A hub location model: There was a need to calculate regional potential of mobility hubs, where should they be located to provide value given budget restraints. This can be calculated by enhancing the regional transport model.

   Process:
   May 2024: Start collaboration with national scientific office TNO
   Octobre 2024: Report and digital structure with 5 scenario's, differing in number of hubs, number of vehicles and customer price.
   July 2025: Refinement of report and digital structure, with a non-city scenario and more insights into interaction effects of Shared Mobility with Public Transport

By working on these three challenges we try to induce demand of **Shared** Mobility services, reaping benefits of **digital** payments, providing data to offer **mobility** based on its actual demand, clustering offers and usability into **hubs**.

2. New Mobility as a Service concept

The livability and accessibility of the Amsterdam Metropolitan Region (MRA) are under increasing pressure. Both on a short-term basis and on a long-term basis we recognize urgent challenges:

- **Short-term:** Large scale road works, events, and other hindrances ask for smart, alternatives to car usage. Therefore, we need to stimulate usage of (electric) two-wheel vehicles and combine shared mobility options with traditional public transportation.
- **Long-term:** The need to build more homes puts additional pressure on mobility, and already scarce space in the region. Current PT alone does not cut it to serve all target groups -especially in more rural areas.

Therefore, Vervoerregio and its partners in the wider metropolitan region actively search for additional instruments to speed up a mobility transition. Municipalities, provinces and transport authorities face the following challenges:

- Lack of space, and growing car usage in cities;
- Lack of mobility options and decreased accessibility of rural areas;
- Limited governmental direction of shared mobility services, and limited added value to public goals within a fully private market
- The need to direct sustainable travel behavior through digital mobility platforms

Past experience: Mobility as a Service tendered for a narrow target audience
When Mobility as a Service came to be, the first thought in the Netherlands was it would be easy for

integrators/resellers to make a margin, and that both mobility operators and customers would embrace the concept easily. Soon, it turned out that some involvement of government was needed, as operators did not move as quickly (especially those operating under governmental contracts, e.g. PT), and customers did not see the advantages. The national governmental divided up 7 pilot-challenges. For our region a MaaS-solution for the Zuidas Business District was needed, to reduce car traffic. The timing was unfortunate, as the accessibility of the CBD improved greatly when COVID-19 essentially meant no or scarce traffic. Especially Zuidas work-offices were deserted for 1,5 years. This meant we bought a functioning app, but there was still no interest or opportunity. We also learnt that while we only tendered for the small customer base of the Zuidas, it was impossible to use the MaaS-app otherwise, without retendering. The left a bad taste for a while. The pilot failed but was MaaS dead?

The challenges remained.

The Solution: MaaS 2.0 as a Strategic Public Instrument

With MaaS 2.0 the Amsterdam Metropolitan governments build a new digital mobility platform with which governments become able to influence travel behaviour of inhabitants and visitors. By providing smart combinations of PT, Shared Mobility Services, Park-and-Ride and other mobility services, an attractive, sustainable and inclusive travel experience comes to be.

Key point: **easier use *and* financial stimulants** make it more attractive to choose for smart and sustainable mobility options.

What will we do? The Approach

The MRA Smart Mobility platform -and its five partners- takes the lead in a perennial market cooperation project.

Phase 1 – Tendering and contracting

We set up a tendering process in which we select multiple digital mobility providers for a framework contract. Goal: perennial cooperation to influence travel behaviour -directly (travellers), and indirectly (trough employers and locally active parties).

Phase 2 -Executing use cases

Within this framework we set up concrete projects, aimed at:

- Specific target groups (for instance; reduced mobility and/or lower income);
- Temporary situations, like events or road works hindrances.
- Serving certain areas, and policy goals

Measures can range from **try-out credits and mobility budgets** to **inclusive digital access (wallets)** for certain groups.

Currently the project is acquiring finances and capacity for the coming years. It took quite a while as we wanted to look at better examples and needed to make a deal among four different governmental

offices, each with some initial scepticism - from the COVID-times. It is foreseen that tendering (phase 1) of MaaS 2.0 will be done in Q4 2025.

What do we want to learn?

Governments use MaaS 2.0 as a tool to learn. Important research questions are:

- **What helps which target group?** For instance: a wallet for lower incomes, or better integration of P+R and shared mobility?
- **How to divide roles and risks between government and market?** For example, when public goals (like inclusivity) do not match commercial interests. So when no, or not enough, money can be made.
- **Which scale is needed for success?** Regional cooperation is essential for effectivity – from inner cities to rural areas.

What does it provide?

- **Improved accessibility** for *all* target groups;
- **Smarter land usage** in urban environments;
- **Extra grip for governments** on the mobility system;

3. Integrated tariffs of PT and Shared Mobility

As a Public Transport Authority, we recognize the importance of using PT and Shared Mobility together. An opportunity is when integrated offers are available. We know that is hard to begin with among PT-operators themselves. Secondly PT-operators tend to 'dominate' over Shared Mobility operators. As it does not mean much to PT-operator to have one or more partnerships, in the total stream of revenues, it is just a nice to have. Conversely, it is a huge advantage for a Shared Mobility operator to cooperate with local PT.

This inequality is unwanted, but a reality as long as PT is 'protected' by contracts, and Shared Mobility is not (yet).

Within the PT-domain we once enforced a basic tariff integration, with one payment method that is universally accepted, and providing a 'cheaper second leg', even with another operator. We cannot change this banking scheme into one that does include 'non-PT'. The legal code (definition of PT) and governance of this banking scheme hinders this.

We are lobbying our national government to end the fragmentation in laws and governance in all transport (PT, shared mobility, on-demand, paratransit, etc. etc.) to provide for a cheaper and more reliable package for everyone. Payment structures are a part of this.

In 2023 and 2025 we respectively re-awarded our regional and city PT-contracts. In these contracts we provided more possibilities for reselling and cooperation with third parties, the so-called '*MaaS-waardige concessie-eisen*' (contract-standards ready for MaaS). Jointly developed, managed and enforced by all Dutch PT-agencies. New PT-contracts, awarded after 2023, all have these standards included. Currently, about 50% of the PT-contracts are MaaS-ready.

In our upcoming contracts for bikes and mopeds, we also incorporate a provision in which a ride is started or ended at a recognized PT-transfer point, customer price will be lower. We are also setting requirements on which payment products have to be (minimally) accepted.

We are currently writing our program of requirements, in which we seek to build in a provision. For a provision in PT-contracts, some extra focus is needed.

Next steps

Tendering the contracts of bikes and mopeds. Agreeing on wanted transfers and the amount of price deduction possible.

A new tariff structure for Public Transportation. Main point: diversification of tariffs to better suit societal needs. A new tariff structure also influences Shared Mobility.

Agreeing on combined PT and Shared Mobility propositions with operators from both sides involved.

Getting national politicians to know about the official study on ending fragmentation. This requires work from our lobbyists.

4. Locating mobility hubs

What is the most suitable location for a mobility hub in your city or region? This is a question that many mobility professionals are struggling with. As a part of the ShareDiMobiHub project, the Transport Authority for the Amsterdam Region and the Dutch research institute TNO used a data-driven approach to map potential hub locations for Amsterdam and the surrounding municipalities.

Vervoerregio pre-selected 466 potential hub locations in the Amsterdam region, based on an existing traffic model. For each hub, a minimum and maximum number of vehicles was set. The algorithm then determined which of these hubs can actually be realised in different scenarios. For doing so, TNO used a model developed before to assist the City of Amsterdam in the selection of its neighbourhood hubs networks during the Interreg e-HUBS project, hereby using local travel patterns as input.

To select the optimal hub locations in the wider Amsterdam transport region, the Transport Authority used its regional traffic model VENOM as input. In this traffic model, predictions are made about how many people make a trip on an average workday and which mode of transport they use: car, bicycle, or

public transport. For the analysis in context of the ShareDiMobiHub project, a fourth option was added: a shared mobility to travel between two hubs.

The algorithm then ran five different scenarios, which are discussed in more detail in the TNO-report. In order to run this analysis, the following data-inputs were required:

- Number of hubs needed - This was estimated through expert judgement and differed for the five scenarios. Some places have been pre-selected as non-car hubs, as their geography does not allow offering shared cars. An example is the medieval heart of Amsterdam, which is already largely carless.
- Vehicle capacity per hub - This was estimated through expert judgement and differed for the five scenarios.
- Customer price - This was estimated through expert judgement and was based on pre-existing TNO-modulations.
- Constraints on allowed trip lengths and allowed walking distances to hubs - This was estimated through expert judgement and was based on existing theories as well as the 'STOMP-principle'. For instance, Vervoerregio wants to discourage using (shared) cars for short trips. Therefore, a minimum length for car-sharing trips in kilometres was set in the model. Trips with a shorter distance are then being converted to other modes. Similarly, maximum trip durations in minutes were set for bikes and mopeds.

For each scenario, the algorithm defined the optimal locations for the shared mobility hubs in the Amsterdam Transport Region. The data outputs include:

Activated hubs – This shows the theoretical optimal distribution of the hubs in the Transport Region (i.e. fixed hubs, or just the presence of shared vehicles) given certain constraints, based on predicted demand and use. Depending on the scenario, there are 150 or 250 hubs. In one scenario, the theoretical maximum of 466 regional hubs were activated.

- Budget requirements – This is the required budget for annual exploitation and the (one-time) building budget.
- Modal split - These are the possible changes in travel behaviour. Data is available on shared mobility as such, as well as in combination with public transport.

How can all this modelling be used in the decision-making process?

The Transport Authority for the Amsterdam Region is current assessing how they can translate these theoretical insights into materialized hubs in the field. For every hub, this will be done in cooperation with local municipalities based on expert judgment and local terrain knowledge.

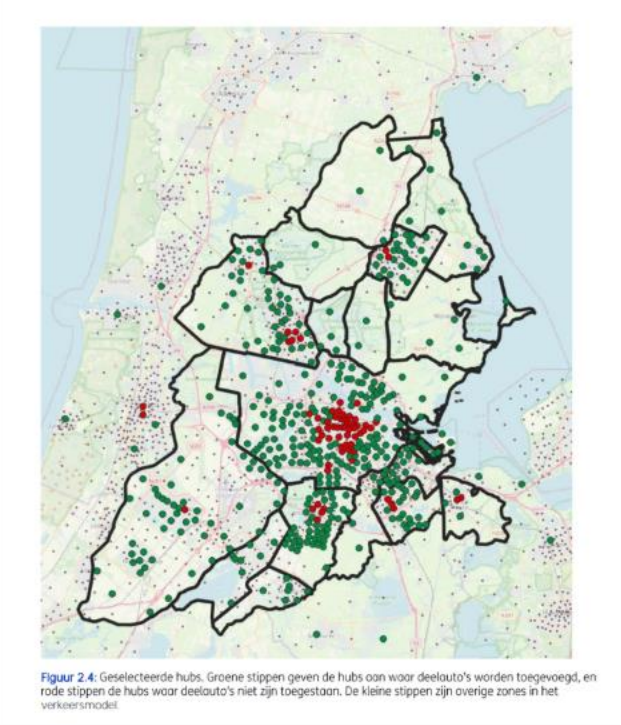

Figure 9: Potential hub locations in one of the models. Green dots are locations to which shared cars can be added. Red dots represent hubs where shared cars are not allowed.

Adding to that, the modelling exercise also looked at how the hubs, when implemented, would be used and how it would influence the modal shift. This exercise revealed that there are clearly different user patterns for car-sharing and shared micromobility. This strengthened the Transport Authority in their vision that shared cars and micromobility should be treated differently:

- Micromobility will, according to the modelling, be combined much more with public transport. Therefore, the Transport Region decided to propose a similar governance structure for micromobility as for public transport, namely a tendering model.
- For shared cars, given their different user patterns, the Transport Authority sees less of a role for itself as their core business is to organize public transport.

In 2025 TNO and the Transport Authority for the Amsterdam Region have deepened the research towards shared mobility and explored the relationship between shared mobility services and individual public transport connections.

Conclusion: In all scenarios usage of trains (not contracted by VRA), bus, tram and metro (contracted by VRA), bikes and mopeds (to be contracted by VRA) is seeing a small but pleasant growth. This modal shift mostly comes from car usage.

5. Conclusion

By working on digital efforts we enhance the business case of both Public Transportation and Shared Mobility. It poses a new challenge for Vervoerregio as how far we can go from an entrepreneurial perspective. Our tradition being that our contracted parties being the entrepreneurs. Currently the political tide seems to be shifting, requiring us to fulfill this role more.

In our Sustainable Urban Mobility Plan (Beleidskader Mobiliteit) we identified 5 main societal challenges -at least one- our efforts should benefit. These being: Wellness, Sustainability, Accessibility, Inclusivity and Traffic Safety. We can now say more confidently that digitalization in general and our shared mobility and hub strategy in particular contribute greatly to Sustainability, Accessibility and Inclusivity.

To describe our new role -developing from a PT-contractor and investor towards a regional *director*- we are about to establish a tactical plan, called 'Publieke Mobiliteit' (public mobility) in which we describe the benefits of treating PT, Shared Mobility and On Demand Services as equal brothers and a combined alternative to car usage. This tactical plan is in large part based on the challenges faced on the topics of tariffs, MaaS and hubs. A form of direction is needed when multiple commercial and NFP-parties in mobility have to rely on each other. This requires a new role on exploitational issues of all, more focused on providing attractive combined services than just providing decent separate ones. Furthermore, as the car industry is rapidly digitalizing and PT is lagging behind, the gap between them everymore increases. So we have to start digitalizing, not only to win market share, but also not to lose it.

For building infrastructure we have a new investment program, called the Uitvoeringsprogramma Mobiliteit. In most cases, we subsidize other parties' (for instance our municipalities) new infrastructure projects. In some cases, we are the contracting party for these investments. Usually just in case of bigger projects, that involve multiple agencies. The contents of its predecessors used to be largely physical infrastructure, as both we and our municipalities are more used to working on this side of mobility. In the last years we definitely recognized that there is also a lot of work to be done on the digital side, but we struggled to initiate specific projects. A clear tactic on who should do what was lacking. In the coming years we may see more investments on (partly) digital infrastructure to encourage a car-light lifestyle.

The ShareDiMobiHub Consortium

The consortium of ShareDiMobiHub consists of 13 partners and 4 subpartners with multidisciplinary and complementary competencies. This includes European cities and regions, universities, network partners and transport operators.

For further information please visit https://www.interregnorthsea.eu/sharedimobihub