Gemeente
Amsterdam

Smart Mobility Programme 2019-2025

Preface

An accessible, liveable and less polluted city: this is what we'd like to achieve for residents, visitors and businesses in Amsterdam today and for future generations.

Smarter and cleaner mobility can help us realise these aims. As a city, we want to offer Amsterdammers, commuters and visitors alternatives to the present forms of mobility, providing a door-to-door solution and contributing to our aims. This includes shared electric transport, from cars to bikes, in 'Neighbourhood eHubs' (eBuurthubs) established in cooperation with local residents. That way, we can use clean modes of transport and create more space in the city by sharing. We can then use this extra space to improve liveability.

Not only is Amsterdam changing quickly, but the technology around us is also rapidly developing. Digitalisation is playing a major role in this and various sharing platforms are seeing opportunities for their services in Amsterdam. This creates opportunities, but also presents challenges and raises issues. What should we do about all the data collected by different organisations with new technologies? How can we prevent violations of citizens' privacy? We have to be alert to these matters and ensure that new initiatives are a good fit for the city we want to be.

In order to ensure the City of Amsterdam is able to control new developments, we will set requirements for businesses that are or that want to be active in our public space. Only those who are prepared to share their data are welcome. We need to anticipate and regulate these developments in order to keep the city liveable, accessible and safe. This will enable us to make smart use of new technology. For example, it can help us to develop better services in the field of mobility or to improve law enforcement.

I therefore see the new Smart Mobility programme 2019-2025 that is presented here as an opportunity to contribute to being the city we want to be, both now and in the future. We can do this by anticipating and regulating on new developments and steering them by making firm choices. As a municipal government, we can't do this on our own; we need support from the people who live and work here. Both the municipal government and the people of Amsterdam need to contribute and, above all, cooperate. We can only bring about the necessary changes in behaviour successfully if we develop reliable and flexible mobility solutions for everyone, and if various target groups, such as families and the elderly, feel comfortable in making different choices from those they have made up to now.

I came to Amsterdam to work together with you on making the city accessible, liveable and less polluted. To realise these ambitions, let's work together to develop cleaner, smarter and better mobility for all!

Sharon Dijksma

Alderperson for Traffic and Transport, Water, and Air Quality

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Introduction

Summary

Why a Smart Mobility programme?

Through this programme, Amsterdam is developing the mobility system of the future in cooperation with residents, visitors, and the public and private sector. To achieve this, we are developing requirements with which mobility solutions and providers must comply. We will thus maintain control over mobility streams in public space, to keep Amsterdam liveable, unpolluted, accessible and safe.

Ambitions

The Smart Mobility programme 2019-2015 focuses on three ambitions:

1. Amsterdam is smart mobility city number one

We will define our own Amsterdam approach to shared mobility as a fully-fledged alternative for private car use by setting Amsterdam requirements for sharing or other mobility platforms and providers. We want to ensure shared mobility that is affordable, reliable and accessible to all. We will work to achieve inclusive, clean and healthy transport, with particular attention for vulnerable groups (for example through innovation in Target Group Transport) and areas that are very busy or where accessibility is poor.

2. Transport for all Amsterdammers, visitors and goods is cleaner and smarter

We will incentivise people to change their travel behaviour by providing appealing choices and affordable and clean alternatives. We will translate this into revised policies and conditions.

3. Amsterdam controls the digital mobility system

We will work to develop our traffic control centre in order to manage, analyse, predict and direct in real time.

Amsterdamse Approach

We are developing the mobility system according to the 'Amsterdam approach'.

This approach comprises three aspects:

1. From small-scale testing to citywide scale-up

   - We test new concepts on a small scale in the city
   - We monitor the results and their lessons carefully
   - We scale up successful concepts to the entire city, applying the results and learnt lessons

2. Proactive planning and application of tools

   - We will develop Amsterdam requirements for the application of new mobility concepts in the city.
   - In implementing the programme, we will use a broad palette of tools
     i. Financial/economic instruments
     ii. Frameworks and policy
     iii. Information and communication
     iv. Smart enforcement

3. Strengthening partnerships at three levels

   - Regional level: with organisations including Amsterdam universities and research institutes, Amsterdam Smart City and the Smart Mobility programme of the Amsterdam Metropolitan Area (AMA)

- National level: with organisations including the G4 and G5 partnerships of major cities, the Ministry of Infrastructure and Water Management (I&W), its executive agency, the Directorate-General for Public Works and Water Management (Rijkswaterstaat, RWS), and the Netherlands Vehicle Authority (RDW)
- International level: through organisations including the European Institute of Innovation & Technology (EIT) MOBiLus consortium and via the Future of Mobility working group of the World Economic Forum

What are we going to do?

To realise the ambitions, we will work along two lines within the programme:

1. Data and digitalisation

This programme line will help the municipal organisation to improve its digital tools and skills so it will be able to maintain sufficient control on mobility in the city and improve the quality of public space. We are working to create the mobility control centre of the future. To this effect, this programme includes the following steps:

- A shared basis: develop a strong data position
- A level playing field: frameworks to exert control
- Learning by doing: from traffic management to mobility management
- Prepared for the future: be aware of the consequences of the digitalisation of mobility

2. Innovative mobility solutions

In this programme line we will work together to develop smart and clean alternative forms of transport, so Amsterdammers and visitors to the city are less dependent on their own cars. We will do so by setting up projects in certain areas of the city and for specific target groups. We will also work to develop smart city logistics and explore the possibilities of water and air transport. Special attention will be paid to vulnerable groups, and Amsterdammers on a low income. By both improving the supply of new affordable mobility concepts and increasing the demand for them, we will grow to become smart mobility city number one, with a more accessible mobility system for everyone.

To achieve this, in this programme we will take the following steps:

- Smart organisation of mobility in the city: working with travellers on alternatives to ownership and initiating behaviour change
- Smart integration and efficient application of new mobility solutions: creating space for new concepts in the city and scaling up their usage if the concepts yield a qualitative benefit to public space
- Anticipation of technological innovation: insight into new opportunities and partnerships

previous programme and which are still continuing, newly launched activities, and initiatives that may be launched in future.

Photo: Norali Emilio

Introduction

Every Amsterdammer is affected on a daily basis by the way mobility in the city is organised. Many residents, businesses, transport providers and employers are also consciously engaged in improving mobility in the city. We want to work with them to design the mobility system of the future.

We need new solutions in a rapidly growing city where space is scarce. The municipal government is therefore working on an attractive, accessible, liveable and unpolluted city for everyone with less private vehicle ownership and use.

To foster cleaner and smarter mobility, the municipal government is opting for a proactive approach by creating conditions that accelerate innovation. This will enable us to pursue large-scale solutions and more swiftly anticipate innovations generated by the market.

In the Smart Mobility 2016-2018 action programme, we gained insight into the mobility concepts that are coming onto the market, and what Amsterdammers need in order to make use of these alternatives. In the new programme it is necessary to take a clearer position in relation to platform operators and to offer large-scale, door-to-door alternatives to traditional forms of transport, so Amsterdammers can become less dependent on their own cars.

The challenge is how we can seize the opportunities offered by innovation to benefit every Amsterdammer, visitor and business. We will build on the lessons and activities in the Smart Mobility 2016-2018 action programme, and continue this programme with partners.

Photo: Hello Bike NL

Example:
New mobility solutions for commuting teachers and nurses

This year, in collaboration with teachers, nursery staff and nurses, we are testing what forms of mobility offer a good alternative to commuting by car. In consultation with a panel of commuting teachers, we are organising pilots for car pooling, improved sharing services and electric bikes. Based on these discussions, we are working on a new travel allowance scheme and new services such as lease offers for electric bikes.

Example:
MaaS Zuidas tender

In cooperation with major employers at the Zuidas business district, we are running a tender for a Mobility as a Service application that combines planning, booking and payment for alternative transport. This will make mobility services more accessible for employees in the area as well as residents and visitors, and make a sustainable contribution to the accessibility of Zuidas during the construction of Zuidasdok. The service will be scalable to other users and target groups in and around Amsterdam and the region.

About this programme plan

This programme plan starts with the prospects for the future of mobility. A smart mobility programme is needed to make a connection between developments in the mobility sector and the major issues facing Amsterdam.

In the second part we describe the 'Amsterdam approach': an ambition, a strategy and a method to design the mobility of the future.

We then explain the two lines in the programme.

The plan concludes with information on the organisation of the programme and the projects.

Photo: MaaS Zuidas

Prospects for the future of mobility

'Amsterdam expects 23 million visitors a year by 2030.'
City in Balance, progress report 2017, City of Amsterdam


Photo: Hochbahn

Amsterdam is a city with great appeal. A growing number of people want to live here, the number of visitors is still rising, and more and more talent, start-ups and companies are choosing Amsterdam as a base. This growth is predicted to continue in the coming years. Amsterdam is changing, as is the technology around us. We therefore need to respond to the challenges that lie ahead, anticipating and regulating developments, and working to become the city we want to be, while looking ahead to the future of mobility.

Challenges

According to the Province of Noord-Holland's most recent prognosis for population growth, by 2040 the City of Amsterdam will have a population of over a million. The number of homes in the city will increase by more than 100,000 between 2019 and 2040. Tourism is also expected to increase rapidly, from 18 million tourists in 2018 to 23 million in 2023.

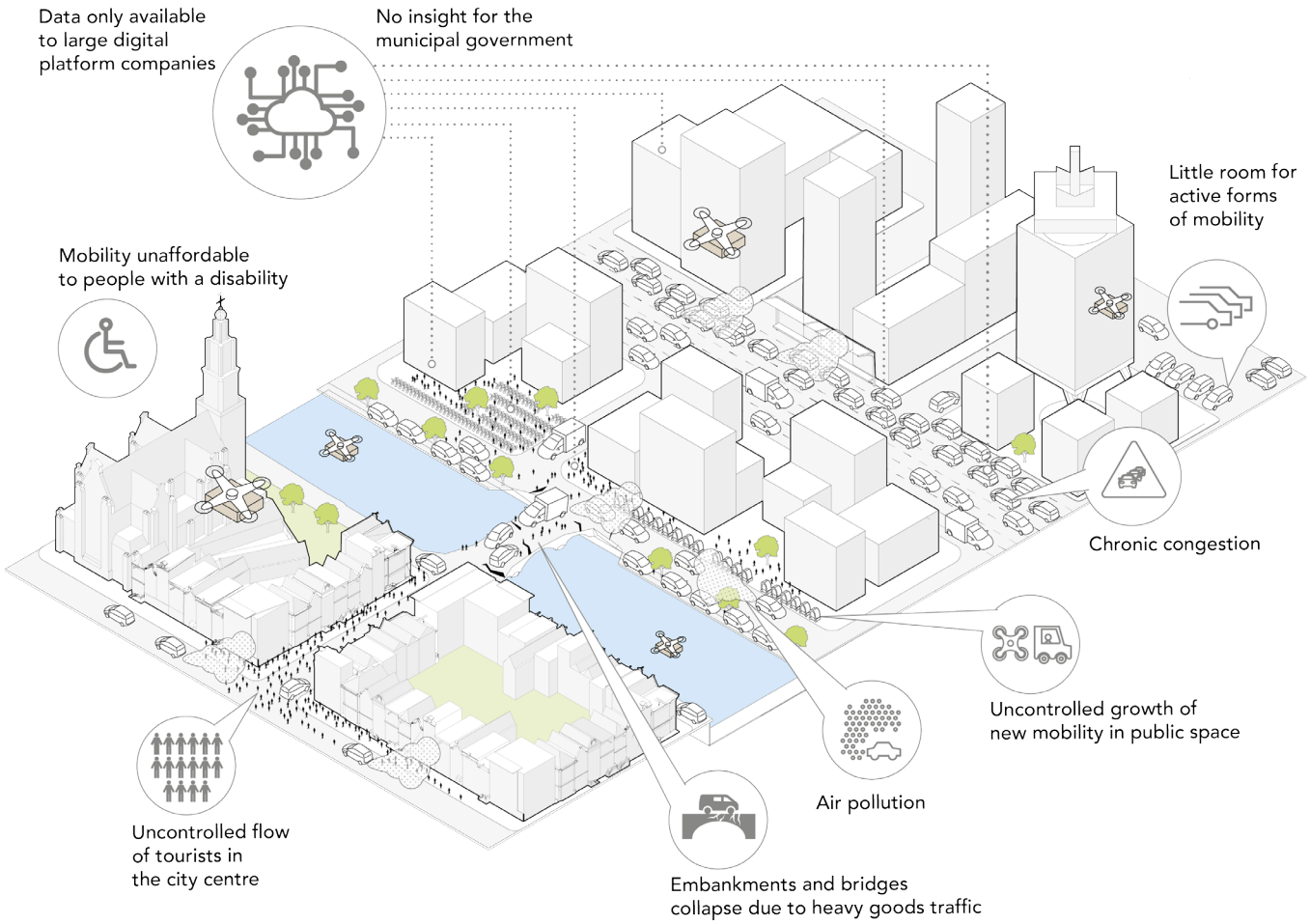
The growing number of people in the city will be accompanied by a vast increase in the number of journeys made from, to and within the city. By 2030, the daily number of journeys will have increased by between 20 and 39 per cent in comparison to 2015. If no action is taken, accessibility, road safety and equal opportunities to make use of accessible and affordable mobility will come under pressure. This will result in congestion, overcrowded public transport, and a city that is no longer accessible to all.

The increase in mobility will put pressure on liveability in the city. Traffic will increase the emissions of CO2, nitrogen dioxide and particulates, resulting in deteriorating air quality. At present, air quality is one of the greatest risks to health in Amsterdam. The current level of air pollution shortens the lifespan of an average Amsterdammer by a little over a year. If no action is taken, this will only get worse.

The increase of mobility in the city is also putting increasing pressure on the existing infrastructure. Many of the city's bridges and around 10 kilometres of the canal embankments are in poor condition and are in need of repair. The necessary repairs and maintenance work will require an investment of hundreds of millions of euros over the coming years and will also hinder the flow of traffic even further.

While mobility is predicted to increase rapidly, the city is currently working on an ambitious low car use and climate neutral agenda. This includes work to improve air quality by restricting access to certain areas of the city for polluting vehicles and stimulating the use of zero-emission vehicles. Parking spaces are also being removed to reduce the spatial impact of motor vehicles. To ensure that transport is able to reach destinations efficiently, affordably and comfortable, the supply of alternatives must be improved and made accessible to everyone.

Threats if we do nothing



'Without a mobility transition, compared to 2015 the number of car journeys in, from and to Amsterdam will increase by 20% in the case of 70,000 homes and 39% in the case of 150,000 homes.'

Mobility study for a growing Amsterdam (Mobiliteitsverkenning voor een groeiend Amsterdam), 2017


Photo: Laenen - V.l.nr: Bird Director Jonatan De Boer

Changes in mobility

The digitalisation of mobility means new providers, new users and a changing position for the municipal government with regard to information and possibilities for control. The mobility sector is in transition from an industrial system, based on the sale of private motor vehicles, to a digital system, based on platform services, digital traffic management and autonomous and shared vehicles.

The quantity of mobility data is rapidly increasing because connected vehicles, infrastructure and platforms are all generating data. Mobility is thus an important area of attention for the implementation of our Digital City Agenda.

In recent years, we have seen the first effects of the mobility transition in Amsterdam, and sometimes it has been a cause of friction. Because of the sharing platform economy, mobility is becoming cheaper and available on demand, and is therefore competing with existing public transport services. This has resulted in disputes with sharing platform companies and car, bike and scooter sharing providers.

Travelling via shared mobility platforms is expected to become even more accessible through Mobility as a Service providers, which offer access to all available services. MaaS providers offer advice based on real-time information on congestion and demand, and the prices for different options to travel from A to B. For the consumer, planning, booking and payment are combined. Platforms optimise the use of available vehicles, making alternatives cheaper and more accessible to all. Because platforms act as an intermediary between supply and demand, and often also make a connection with existing public transport, they have a major influence on travellers' choice of modality and route.

'The shared mobility market will grow from 105 billion dollars in 2017 to 620 billion dollars in 2025.'
Grand View Research, Inc

'Uber has a special deal for Manhattanites this summer: Unlimited UberPool rides during commuting hours, at rates cheaper than the New York City subway.'
Time Out magazine juli 2016.

Digitalisation also makes new vehicle technology possible. The sector is signalling new transport concepts by land, sea and air. Sharing platforms can enable a large user group to access new concepts such as electric kick scooters and microcars such as the Birò and Canta. AMS Institute is developing a self-driving boat, the Roboat, and in the past year we have been testing a passenger drone at the Johan Cruijff ArenA.

Just as the municipal government has facilitated the industrial mobility system by constructing roads, parking spaces and traffic management in the form of signs and traffic lights, the digital mobility system will be facilitated by data. Traffic management will become mobility management, with a better overview of all mobility streams and digital enforcement.

Amsterdam needs a radical expansion of new mobility solutions. The digitalisation of mobility offers new opportunities, but also new threats. In designing the mobility of the future we need to adopt a clear position, set requirements for mobility platforms and assign tasks where we offer space to new mobility concepts.

What are the effects on the city of new mobility concepts originating from the market?

!

Threads

Platform operators take control of mobility in the city, determining price and access.

Breaches of residents' privacy and autonomy: data surveillance, buying and selling data, and influencing algorithms.

New competition for the bicycle and new demands placed on public space.

Poorer working conditions for employees on platforms.

Formation of monopolies in the market, exclusion of local businesses due to global tech giants' advantages of scale

Opportunities

Alternatives to ownership. Fairer and more efficient distribution of public space and traffic infrastructure: more room for public life, recreation and play in public space.

More robust networks. Networks of modalities can replace each other in the case of calamities.

More affordable and easily accessible mobility services for consumers: more options and more service.

New growth-based economy in Amsterdam.

New tools for managing crowds, congestion and sustainability.

'Bird opent kantoor in Amsterdam. 415 miljoen dollar startkapitaal voor introductie deelsteps.'

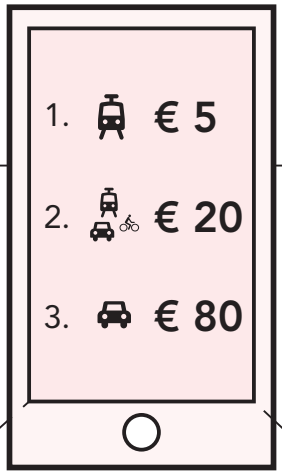
Crunchbase.com

What travelling is like in 2025

Amsterdam Nieuw West

It's 26 October 2025. Tomorrow is Amsterdam's 750th anniversary and there will be big celebrations in the city. Sanne lives in Weesp, and would like to spend the day with her parents, who live in the Amsterdam district of Nieuw-West.

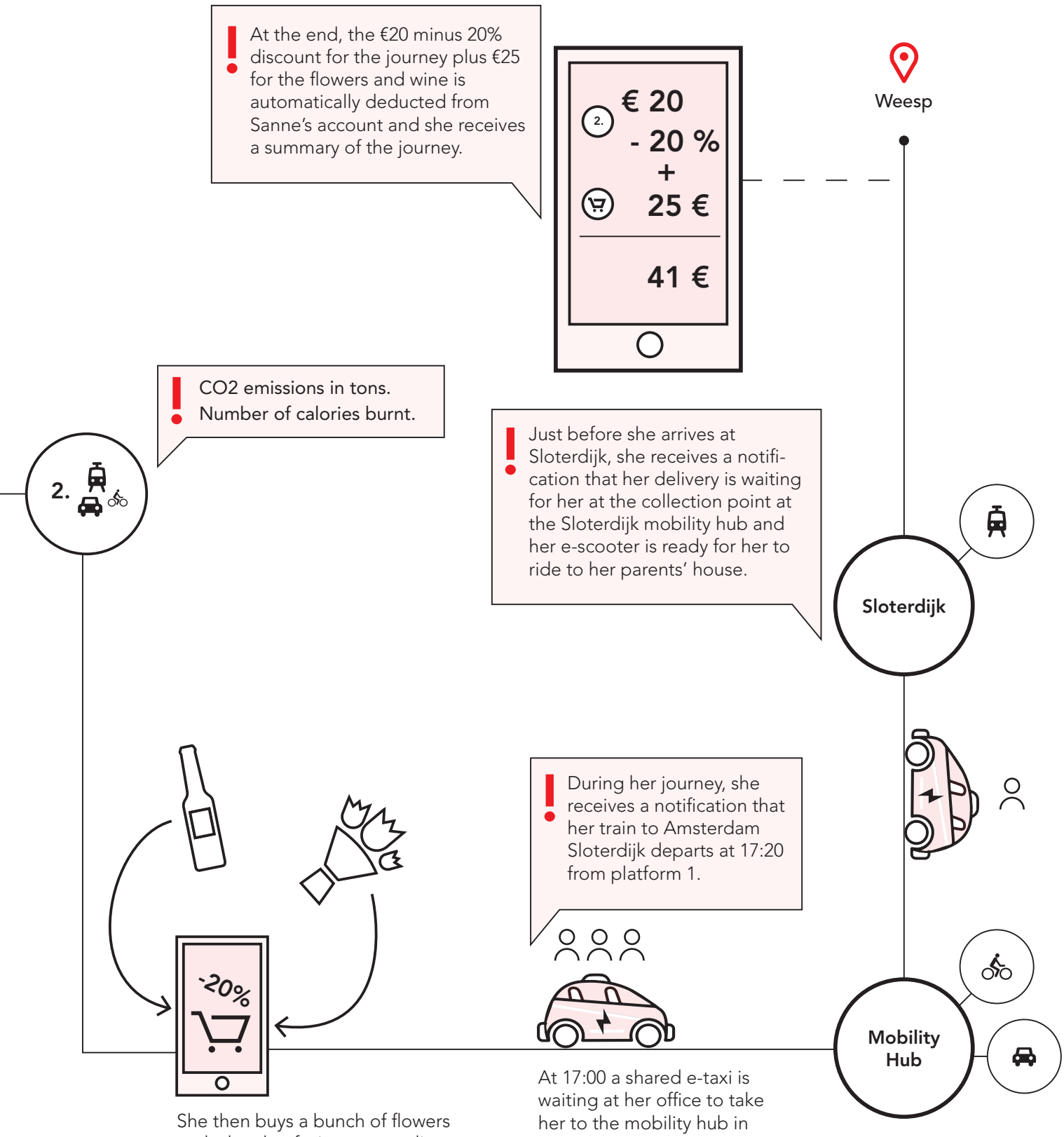
She opens her app and clicks on the address to plan and book a journey. She is offered 3 options:



1. With the €5 option, she only uses public transport, walks 15 minutes to the station, and shares her data with the platform to receive real-time travel advice and updates on any delays.

2. With the €20 option, she can make use of all available mobility services, and she also shares her data as with option 1.

3. The €80 version guarantees Sanne a journey in a private vehicle. She doesn't have to share her data for travel advice, but she can expect a longer travel time due to the festivities in Amsterdam.



She then buys a bunch of flowers and a bottle of wine at an online shop. If she picks them up from a mobility hub at the end of the day instead of having them delivered to her office, she'll get a 20% discount on the price of her journey.

At 17:00 a shared e-taxi is waiting at her office to take her to the mobility hub in Weesp. She shares her e-taxi with three other passengers, who continue their journey from the hub by bike, on foot or by train. One of them was very noisy. Sanne indicates in the app that she doesn't want to share a taxi with this person again in future.

Vision: the city we want to be

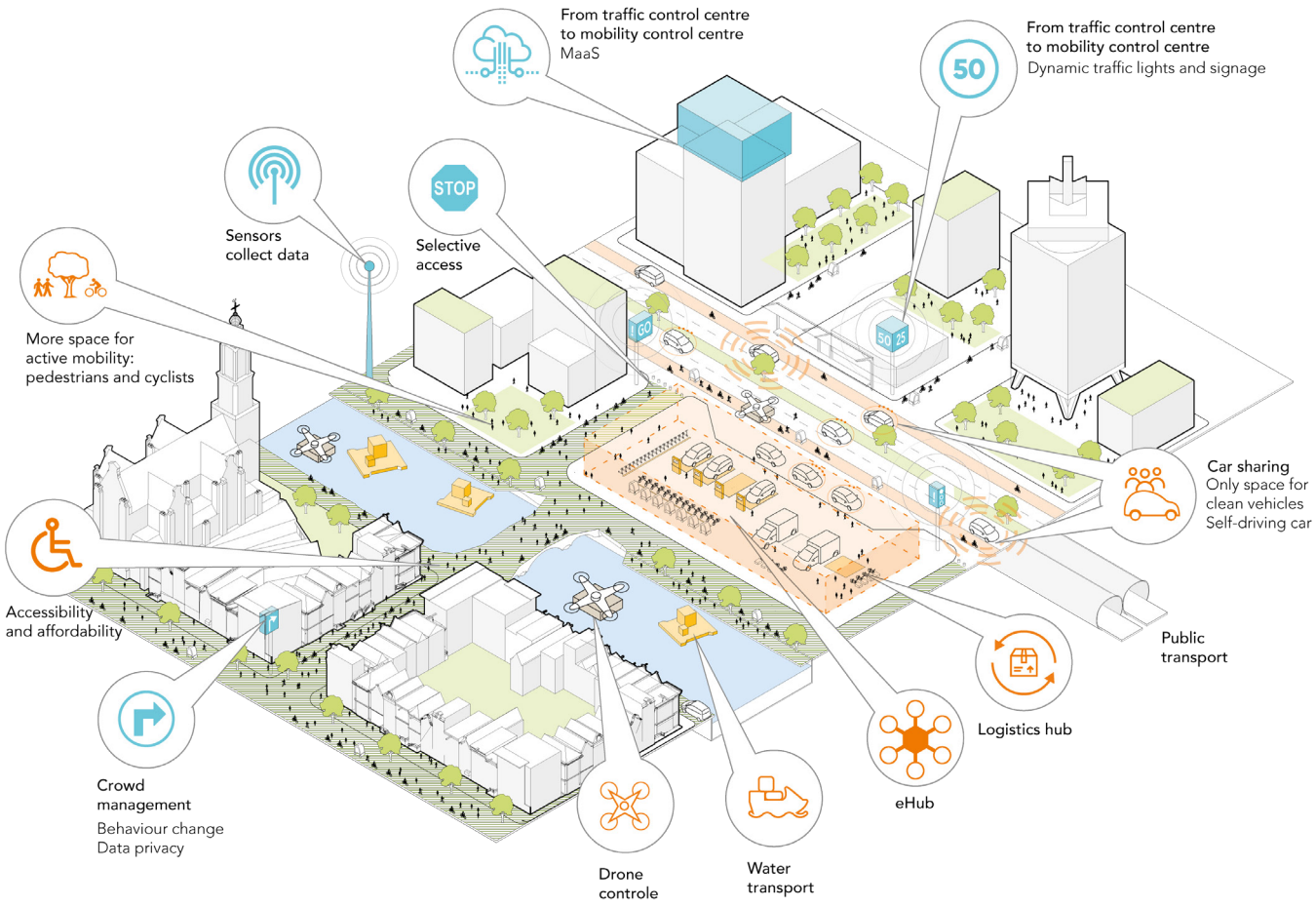
We are using the opportunities offered by the digitalisation of mobility to help provide solutions to the issues the city faces. Amsterdam now has the chance to redesign mobility by land, water and air, for the city we want to be: a city whose residents have control over their own living environment. The municipal government is cooperating with residents and partners to shape a city that is accessible and a pleasant place to live. A city in which there is a better balance of the use of public space, including all the functions for which it is necessary, and 'living' space, green space and clean air for everyone.

We want to be a city with a good climate for innovation, plentiful employment and good working conditions for employees.

We want to be a city with a high level of road safety, with more space for pedestrians and bicycles. We want mobility to be accessible and affordable for everyone. We want privacy to be safeguarded and data to be handled responsibly.

If we are to provide a solution for the huge challenges Amsterdam is facing in the future, we need to scale up fast now.

The city we want to be



- Innovative mobility solutions
- Data and digitalisation

Ambition and strategy

The Smart Mobility Programme 2019-2025 focuses on three ambitions

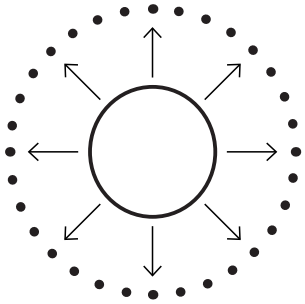
1. **Amsterdam is smart mobility city number one**

2. **Transport for all Amsterdammers, visitors and goods is cleaner and smarter**

3. **Amsterdam is able to control the digital mobility system**

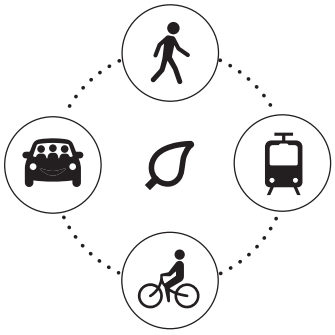
Amsterdam is smart mobility city number one

- We will develop smart mobility in Amsterdam, offering an improved supply of mobility that is affordable, reliable and accessible to all. We will work to realise inclusive, clean and healthy transport, with special attention for vulnerable groups (for example, innovation in target group transport) and areas with poor accessibility or where public transport and traffic are under pressure.
- We will accelerate an improved supply of mobility for everyone by scaling up the present supply of shared or other forms of mobility and making connections with existing public transport to arrive at a fully-fledged alternative to private car use in the city.
- We will translate this into Amsterdam requirements for commercial transport providers in public space: data will belong to the user, and relevant data needed to promote accessibility and liveability must be shared with the City of Amsterdam.
- Amsterdam will be an international frontrunner in smart mobility, because we will offer a platform for innovations that have societal impact and experiments that centre on the user and can be rapidly scaled.



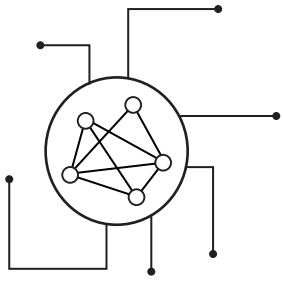
Transport for all Amsterdammers, visitors and goods is cleaner and smarter

- We aim to bring about behaviour change and to incentivise people to travel differently by offering attractive choices and sufficient affordable alternatives, for example by creating bottom-up Neighbourhood eHubs or facilitating Mobility as a Service for residents or public sector professionals.
- We will scale up successful experiments and translate this into new policy (regarding commercial transport, taxis etc.) and requirements for smarter and cleaner travel.
- For the mobility use of the future, we will transform existing areas and develop new ones.



Amsterdam is able to control the digital mobility system

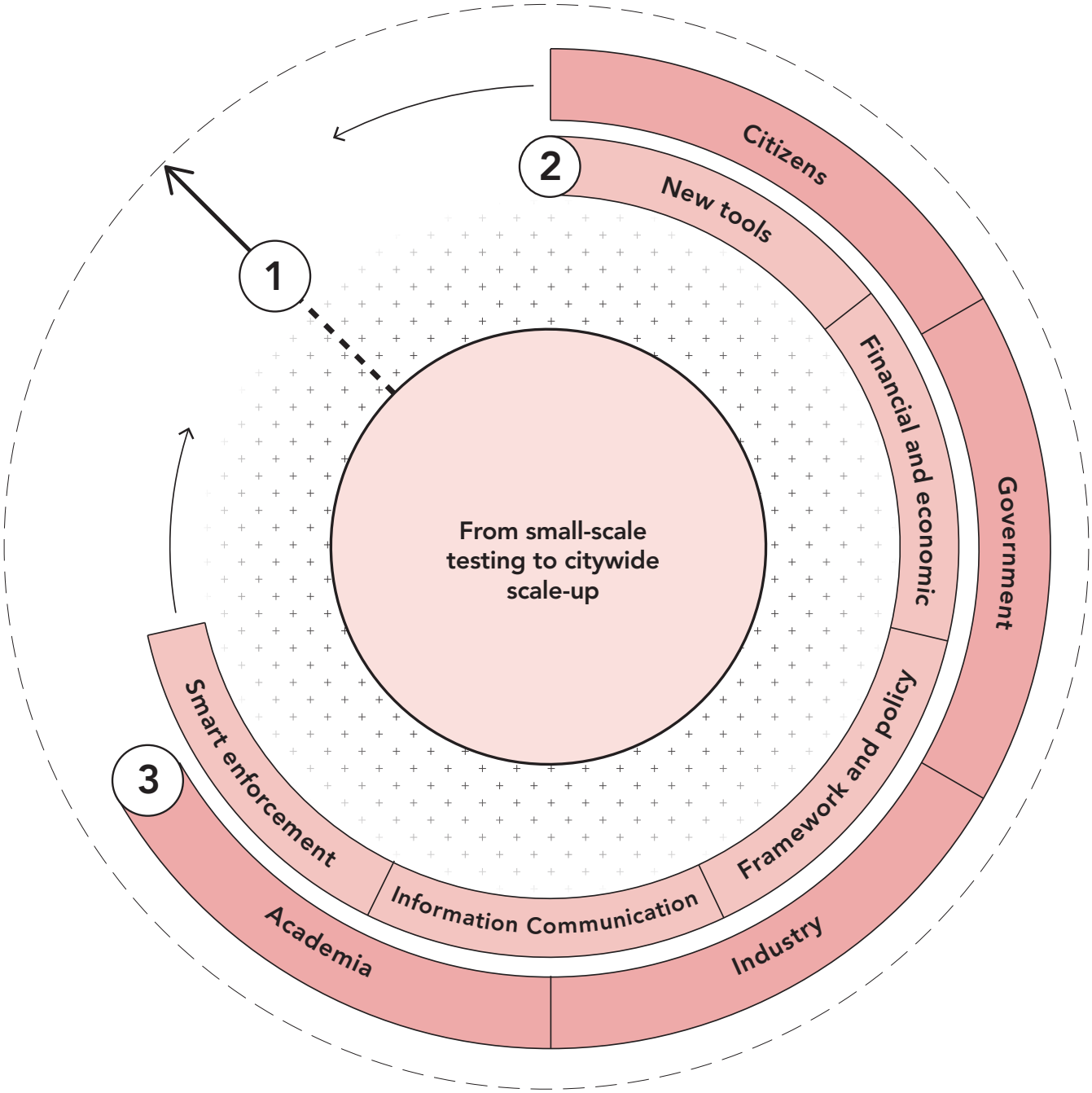
- We will influence and manage capacity and mobility (digitally or otherwise) to promote road safety, accessibility, liveability and clean air.
- We will invest in our competencies, skills and tools and develop a mobility data platform as a basis to achieve this. We will give shape to shared mobility in Amsterdam, ensuring it is space efficient, affordable, reliable, accessible to all, inclusive, clean and healthy.
- We will develop our traffic control centre and crowd management methods into the mobility control centre of the future, for various forms of land, water and air transport. We will move from reacting and anticipating to predicting and preventing congestion, thus improving liveability and the use of public space.



Amsterdam approach

Through this programme, we will apply an Amsterdam approach to developing the mobility system of the future for all Amsterdammers. Amsterdam owes its success to its core values of creativity, innovation and the spirit of enterprise. Based on these values, on the one hand, we will create room for experiment, research and innovative projects to anticipate and shape the future. On the other hand, we will set a clear course and establish renewed requirements in order to maintain awareness of and control over the services offered in public space by platform operators (including those of sharing platforms) and transport and telecom providers.

The Amsterdam approach comprises three aspects:



1. From small-scale testing to citywide scale-up
2. Proactive planning, application and modification of instruments
3. Strengthening partnerships

From small-scale testing to citywide scale-up

We will start by cooperating on a small scale and conducting tests with different users in demarcated areas of the city. We will monitor the effects of the tests and evaluate what has been learnt from the experiences. In cooperation with partners, we will then use the results of the pilots and the lessons learned to scale to the entire city and region. Experiments will only be started if they are scalable, and where there is the prospect of an investment multiplier so they will be able to operate independently.

Target groups with which we will cooperate in testing new mobility solutions include: residents with a parking permit, residents' collectives, commuting public sector professionals (teachers, nurses etc), and vulnerable groups. Districts in which we will test new mobility concepts include Zuidas, Sloterdijk and newly developed areas such as Strandeiland and Amstel III.

Mobility control centre: designing an innovation centre for digital mobility management

As yet, there is no blueprint for the traffic management of the future. Innovative new applications are rapidly appearing. In cooperation with AMS Institute we are establishing a test centre at the Marineterrein, where we will access the available regional mobility data and make it suitable for use in research and applications.

Tests may be new versions of the municipal government's existing applications (such as CMSA and OMC 2.0), research by universities or research institutes (such as the Urban Mobility Observatory), showcases by companies that want to offer their business (such as the Mobility Portal) or applications in response to challenges which the municipal government has actively presented to universities and research institutes or industry (for example in the Amsterdam Metropolitan Area programme Scale-up in Residence).

Photo: Franki Chamaki

Proactive planning, application and modification of instruments

We aim to develop our organisation to maintain oversight and control of the mobility system of the future. We are therefore developing Amsterdam requirements for new mobility concepts: we are working on frameworks in new policy products and regulations and applying them in enforcement, permits, purchasing, principles for area development, financial stimuli etc. We are also renewing the instruments at our disposal by applying new methods such as Automatic Number Plate Recognition (ANPR) vehicles and intelligent access.

- Instruments: financial/economic instruments such as the intelligent pricing of services can encourage citizens and private parties to use smarter and cleaner transport. In addition, price stimuli can discourage behaviour that has a negative impact. The municipal government also encourages other parties to participate actively in projects and is therefore looking for a private multiplier of its investments.
- Frameworks and policy: by establishing a framework and making policy, Amsterdam will make clear that there are requirements which parties must meet if they wish to operate in the city, and that cooperation is important.
- Information and communication: by enticing Amsterdammers and offering them choices to travel in a different way by offering a better supply of shared mobility, via MaaS or a platform for services, we will make shared mobility in Amsterdam a fully-fledged alternative to the privately-owned car.
- Smart enforcement: the municipal government will introduce innovative approaches in the framework and policy, such as geofencing, ANPR, artificial intelligence and dynamic access.

Strengthening partnerships

Amsterdam will build on the strategic partnerships that were initiated in the previous Smart Mobility programme in order to strengthen the ecosystem and make greater impact by collaborating and by means of the multiplier effect. We are cooperating with universities and research institutes within the framework of the 'Oval Table' (Ovale Tafel); we are working with residents and shared mobility providers in a variety of projects to develop Neighbourhood eHubs, and we have made partnership agreements with Google, the Johan Cruijff ArenA and TomTom in accordance with Amsterdam requirements. The collaboration takes a concrete form at three levels of scale:

1. At regional level, in existing partnerships, for example within the Amsterdam Metropolitan Area Smart Mobility programme, the Building Accessibility Together (Samen Bouwen aan Bereikbaarheid) programme, and via the Oval Table with universities and research institutes in Amsterdam.
2. At national level, in the G4 Smart Cities partnership, the G5 Smart Mobility partnership, the Electric Shared Mobility City Deal in Urban Area Development, and with the Ministry of Infrastructure and Water Management through the Mobility as a Service pilots.
3. At international level, Amsterdam chairs the City Club within the European Institute of Innovation & Technology (EIT). In addition, we participate in the Future Mobility working group of the World Economic Forum (WEF).

We are jointly investing with partners in projects to give shape to smart mobility. We are also experimenting with our partners with new forms of mobility management, applying the method of testing on a small scale, measuring results, and then scaling up successes.

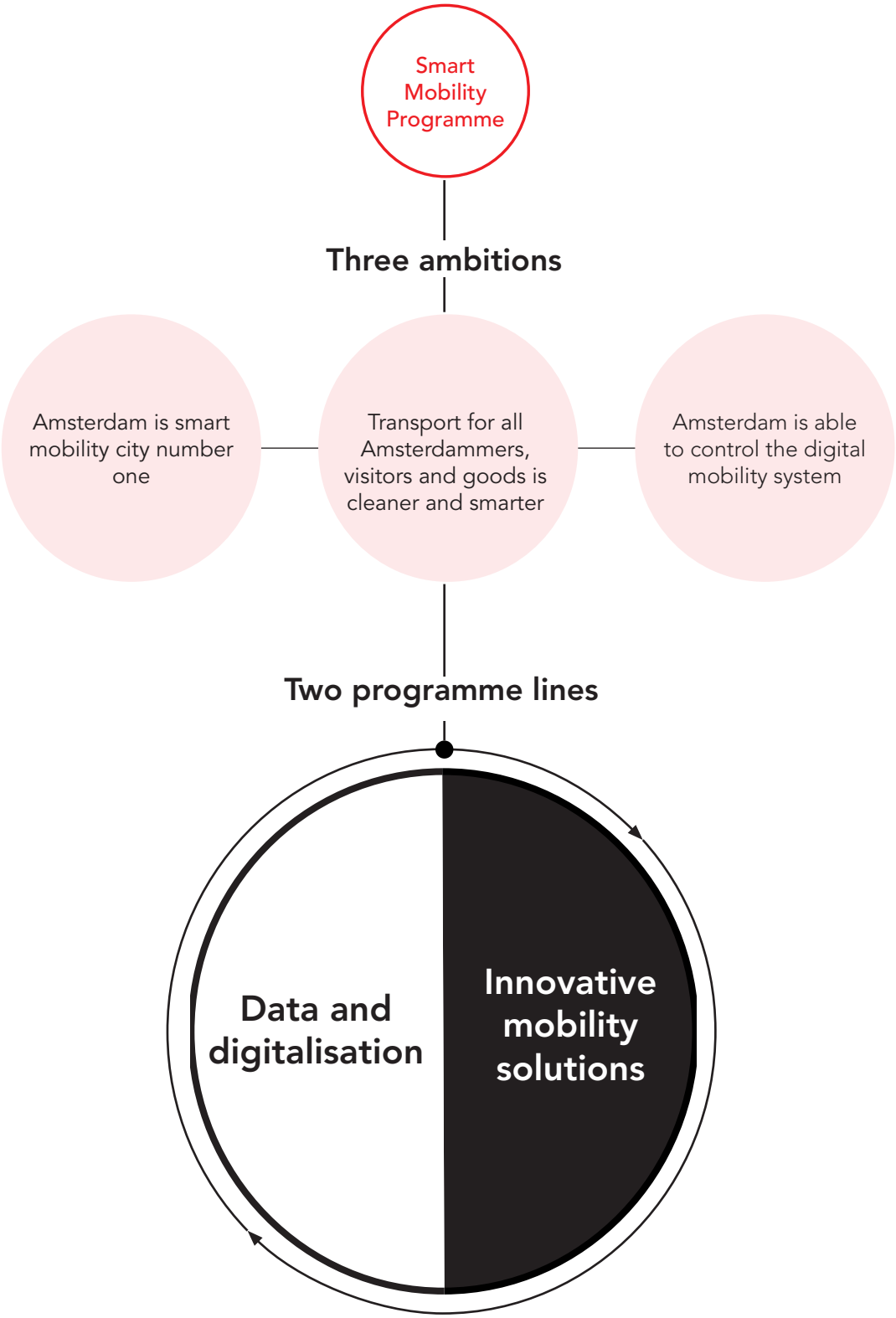
What are we going to do?

To realise the ambitions, we will work along two lines within the programme:

We will work to strengthen our data position and move with the developments of digitalisation to create a mobility system for everyone

We will work to achieve an increase in scale that will lead to a fully-fledged shared transport alternative by boosting supply and demand for different transport for everyone.

The two programme lines are closely interconnected. Developments relating to data and digitalisation are crucial to scaling up new mobility solutions in the city and increasing their impact. Furthermore, new mobility solutions such as MaaS can also yield large quantities of data which can provide the municipal government with insight in innovative ways into real-time mobility flows in the city. It is therefore important to take a coherent approach, intelligently combining the application of various instruments.


Smart Mobility Programme
Three ambitions
Amsterdam is smart mobility city number one
Transport for all Amsterdammers, visitors and goods is cleaner and smarter
Amsterdam is able to control the digital mobility system
Two programme lines
Data and digitalisation
Innovative mobility solutions

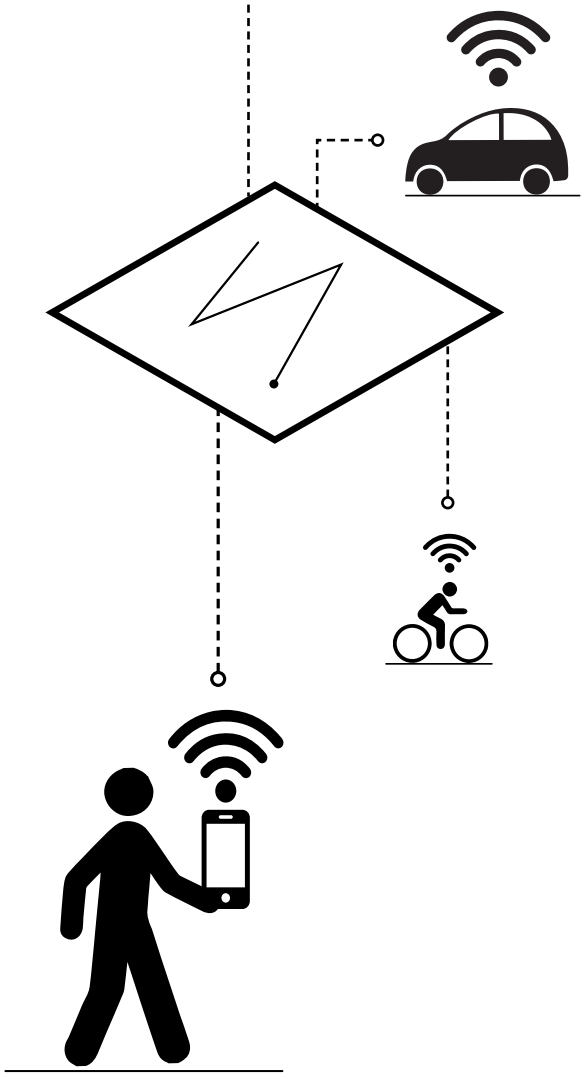
Data and digitalisation

What we are working towards: Amsterdam is able to control the digital mobility system

The digital mobility system requires digital management tools. New mobility solutions will offer Amsterdammers and visitors advantages in both ease of travel and price. Public interests such as access to the city, allocation of public space, accessibility for all and air quality are not safeguarded by the market and may even be negatively affected. This is a role for government.

We are therefore making a transition from traffic management, which focuses on the flow and safety of car traffic, to mobility management, aimed at managing all modalities in the mobility chain and taking into consideration wider liveability effects such as congestion and air quality.

The data and digitalisation programme line helps the municipal organisation to improve its digital instruments and skills so it maintains the ability to sufficiently steer mobility.



In this programme line we aim to take the following steps:

A

A shared basis: building a strong data position

B

A level playing field: a framework to exert control

C

Learning by doing: from traffic management to mobility management

D

Ready for the future: be aware of the consequences of the digitalisation of mobility

A

A shared basis: building a strong data position

Why

The availability of mobility data is rapidly increasing in vehicles, through platforms such as Uber, ViaVan and MaaS providers, and assets such as traffic lights, traffic cameras and charging stations.

How

Mobility data controlled by the municipality puts the municipal government in a strong data position and enables it to steer mobility in accordance with common interests. In this way we will prevent large commercial platforms and companies from taking control of mobility in the city.

To achieve a strong data position, the municipality needs high quality data, with an architecture to make it applicable for mobility management.

What

In the programme, we will begin strengthening our data position by accessing new sources of data and coordinating the centralised collation of available mobility data in the municipality.

In the process, we will develop standards for the quality and reliability of data and protocols regarding the way data is to be delivered both externally and internally. We will develop a roadmap for the architecture that is necessary to make mobility data suitable for monitoring and mobility management.

The architecture will also make it possible to monitor the effects of experiments with innovative mobility concepts.

B

A level playing field: a framework to exert control

Why

As a city, we face the task of assessing and facilitating the mobility transition with the aim of making Amsterdam as clean and safe as possible. This calls for the right balance between the protection of privacy and individual autonomy, societal values such as liveability, sustainability, and the improvement of the supply of mobility from the perspective of providers and individual travellers. Renewed requirements set by the municipal government are necessary to exert control over platform operators offering digital mobility services in Amsterdam's public space.

How

The municipal government will develop a framework so that in the age of digital mobility, companies that wish to operate in Amsterdam's public space are required to participate in the Amsterdam digital environment.

We will therefore run a development period in cooperation with mobility providers and users in order to work on standards and agreements that are acceptable to everyone. Parties will be free to contribute ideas and participate in pilots. Those who actively participate will have greater influence than those who do not. After a development period that's yet to be decided, the agreements will be established in policy.

What

We will create an assessment framework on the basis of which we will be able to assess new mobility solutions with a digital component. We will develop this from the perspective of the negative consequences of digitalisation and the desired societal effects of new mobility solutions. We will incorporate Amsterdam requirements into our policy and tools. These requirements will be based on our values: accessibility to all, efficient use of space, improved road safety, good working conditions, transparency and democratic oversight.

The framework we develop will focus on:

- Agreements on data sharing and accountability. We want transport providers to share their data with the city in a standardised way, which we will establish in consultation with legal specialists and transport providers.
- Guidelines for privacy, cybersecurity and responsible data use according to the Tada principles (Tada is a movement promoting a responsible digital city, belonging to and serving all its inhabitants). We will make agreements with economic operators on how their activities in public space will function. Nationally we are taking a pioneering role in this field. A policy framework will be established for crowding in each area to establish regulation scenarios for digital traffic management. We will begin by introducing dynamic access for taxis and then scale up to other platforms.

In addition we will prepare frameworks and working methods to proactively encourage the market to develop new applications for Amsterdam's mobility issues. Allowing access to mobility data where possible will strengthen the city's climate for innovation. Where possible, the municipality will apply the open source and open data model so that everyone will have equal opportunities in the development of digital services. We will investigate how we can provide access to municipal mobility data according to Amsterdam Data Exchange (AMDEX) principles and develop an approach to proactively calling for tenders for mobility solutions. The relationship between concepts such as data commons, data sovereignty and open data will thus be given substance in practice.

C

Learning by doing: from traffic management to mobility management

Why

As yet, there is no blueprint for mobility management. However, innovative new mobility management applications are rapidly appearing. Due to the increasing pressure on the city, there is a growing societal demand for mobility to be managed from the perspective of liveability. To maintain control of mobility on the street, digital mobility management is necessary for all modalities in public space in Amsterdam.

How

In cooperation with universities and research institutes, civil society organisations, residents and economic operators, we will increase our insight into choices of architecture and possible applications of mobility management.

What

We are working towards the mobility control centre of the future, in a physical location, where a range of new applications can be tested. This will provide room to develop the municipality's present applications (such as CMSA), a vehicle for companies that want to showcase their business or applications in response to challenges that the municipality has actively presented to universities, research institutes and industry (for example in the Amsterdam Metropolitan Area's Scale-up in Residence programme). At the mobility control centre we will test and develop new tools to promote access, speed and sustainability. Aspects to explore include the desirability and applicability of geofencing and smart pricing.

Through this approach we will strengthen cooperation within the smart mobility ecosystem. If new mobility management methods prove to be successful and meet the Amsterdam requirements, we will scale them up to create the mobility control centre of the future of Amsterdam.

D

Ready for the future: aware of the consequences of the digitalisation of mobility

Why

As yet there is insufficient awareness of the implications of the digitalisation of mobility, both in society and within the various sections of the municipal organisation. A lot of attention is now being devoted to finding solutions for current problems and optimising the present solutions (and rightly so). However, the impending system change calls for a fresh perspective and approach.

How

Both among the public and within the municipal organisation, we wish to raise awareness of changing mobility.

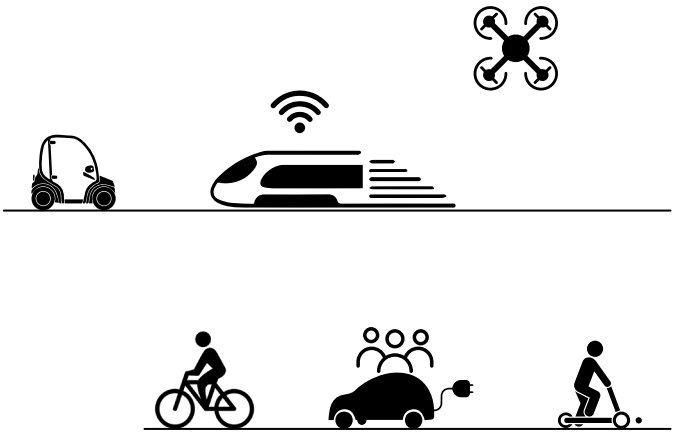
What

We will initiate a public debate on the value and necessity of the digital control of mobility on the part of government, and investigate how the municipal government can communicate generically and transparently regarding adaptive and personalised applications in public space. To do so, we will collaborate with partners such as Waag, Pakhuis de Zwijger and AMS Institute.

We will increase awareness within the municipal organisation and among our partners. We will explore the impact of the mobility transition on the societal issues on which we are working. On this basis, we will work jointly to achieve the necessary change, placing the focus on the citizens of Amsterdam and the inclusivity of the measures to be taken.

Innovative mobility solutions

The goal we are working towards: Amsterdam is smart mobility city number one, and transport for all Amsterdammers, visitors and goods is cleaner and smarter



The aim of this programme line is to test innovative solutions in cooperation with the public, universities and research institutes, and economic operators, and where they are successful, scale them up in the city, region and beyond. In different fields and with different target groups, we are working on concrete alternatives from door to door, so Amsterdammers and visitors will be less dependent on their own cars. By both improving the supply of new mobility concepts and increasing the demand for them, we can grow to become city number one for shared mobility.

A proactive approach to dealing with new mobility concepts coming onto the market will enable us to avoid being taken by surprise by the unexpected introduction of new mobility services in the street. By taking an area-based approach in existing and new areas, we will develop tools and guidelines to design the city of the future for the mobility of the future.

In this programme line we will work on innovative mobility solutions at three levels:

E

Smart organisation of mobility: working with transport users on alternatives to ownership

F

Smart incorporation of new mobility solutions: creating space in existing and new areas of the city

G

Anticipating technological innovations: insight into new opportunities

E

Smart organisation of mobility: working with transport users on alternatives to ownership

Why

Although residents of Amsterdam own fewer cars per household compared to the rest of the Netherlands, the number of cars per square kilometre in the city is still high. We want to reduce the number of cars in order to gain space and improve liveability. At the same time, there is a growing demand for custom-made mobility, and new modalities and sharing concepts are rapidly appearing on the market. Some innovations have already been launched in Amsterdam, while other concepts are only available in other cities, or are still in a research phase.

In this programme we will monitor the impact of new concepts on the city, and under what conditions and for whom they can offer a solution.

A transition from ownership to use will bring many advantages. It will contribute to improving the efficiency of transport organisation, make personal mobility available to everyone and improve the travel experience. One specific concept is 'Mobility as a Service', which combines the planning, reservation, usage and payment of mobility on a single platform. It is expected that in future, Mobility as a Service providers will supply the backbone for the use of shared services and public transport.

How

In cooperation with users we will test solution-oriented and small-scale new mobility concepts, in line with the cornerstones of the Low Car Use Agenda. We will monitor the effects and work to develop inclusive alternatives.

We aim to bring about behavioural change by conducting experiments and making life events such as moving to a new home or starting a new job central to our communication strategy.

What

We have established collaborations with a variety of end users in order to test mobility solutions.

We have launched a trial for parking permit holders to enable them to experience what it is like to use different modalities other than their privately-owned car for a period of two months. We will apply this approach to awareness-raising, incentives and behaviour change in other pilots, and scale up to other target groups. In addition we will cooperate with neighbourhood collectives on alternatives to car ownership.

For new commuting concepts we will collaborate with governing bodies in care and education, and with major employers in the Zuidas district.

When Amsterdam residents apply for a parking permit, we will offer them alternatives. We will collaborate with employers on travel allowance schemes to encourage travel without using privately-owned cars, and train human resource personnel to provide travel advice as part of their intake for new employees.

We will work with the Johan Cruiff ArenA to develop new concepts for event traffic.

We will expand this approach by cooperating with Amsterdammers who have transport problems, such as people on a minimum income, City Card holders and users of target-group transport, to be able to offer choices for mobility in different areas.

G

Anticipating technological innovations: insight into new opportunities

Why

We are at the start of a mobility transition. The market is constantly developing new mobility services and new vehicle technology in view of the economic and societal opportunities the new mobility offers. The dominant role of the bicycle in Amsterdam draws admiration from all over the world. We want to maintain and boost this strong point. For Amsterdam it is crucial to constantly and proactively anticipate new technologies and concepts from the perspective of societal challenges and opportunities.

How

Amsterdam will not allow itself to be taken by surprise by new technologies again in future. We will monitor the development of new mobility concepts and where we see potential value to society we will test them in living labs and within the scope of our partnerships.

New mobility concepts will be tested in practice to ascertain their potential positive and negative consequences, the combination of problems to which they contribute a solutions, and the conditions under which they can be applied throughout the city.

What

In the imminent future, there will be tests in the following areas:

- Urban Air Mobility: the airspace above the busy city is virtually empty. Technological, innovative developments now make it possible to use the lower airspace (50-150 metres height) for mobility and safety. But is this possible to implement responsibly? Uber has already announced plans to operate an aerial taxi drone commercially between urban hubs in three countries. For such services to be offered, various changes in infrastructure and legislation will be required.
- Self-driving boats: AMS Institute is developing the Roboat. In partnership with AMS we are exploring potential applications of the Roboat, ranging from ferries, to logistics, to temporary bridges, to the application of lidar technology to assess the state of canal embankments and bridges.
- Autonomous transport: we have conducted a scenario study on the possible impact of autonomous transport in the city. We are monitoring the development in the Autonomous Transport Knowledge Circle (Kenniskring Zelfrijdend Vervoer), and are investigating whether we can establish a test location for self-driving vehicles at the Marineterrein.
- Smart logistics: large companies such as Amazon have been testing delivery services using drones for several years. In addition, various companies, including FedEx, are experimenting with delivery robots.
- Light electric vehicles (electric kick scooters, microcars etc.): many economic operators wish to offer their services in Amsterdam. If the vehicles are nationally approved and meet the Amsterdam requirements, such as safeguarding the quality of public space, we will begin tests on a small scale in designated areas. The vehicles have the potential to become part of a fully-fledged, affordable and accessible alternative to the car in the city for everyone.
- We are also proactively encouraging the market to put forward solutions to our issues. We are starting a Scale-up in Residence programme, whereby mobility questions are presented to the market by means of a competition, thus strengthening the climate for innovation in the field of smart mobility in Amsterdam.

F

Smart incorporation of new mobility solutions: creating space in existing and new areas of the city

Why

Amsterdam will see a lot of building and renovation over the coming years: 7,500 new homes will be built per year, and the city will be made climate neutral. Mobility has a major role to play. We want new mobility solutions to contribute to the efficient use of space, an improved living environment and an efficient electricity network. The mobility of the future will partly determine what the streets of the future will be like and how the demand for energy will be met.

We want to learn from the effects of new applications, and design the city of the future for the mobility of the future.

How

In area developments, experiments will be launched with new ways of organising mobility. We will initiate strategic discussions on the way more efficient use of space by mobility can contribute to the planning and design of new and existing areas, and a better living environment. In collaboration with project developers, we will work on innovative service concepts and revenue models for mobility. Working in practice, we will develop a flexible method of dealing with innovation in the field of mobility in area development and guidelines for the construction of new neighbourhoods. In existing areas we will start work on clustering mobility and logistics streams at central points.

We will enter into a strategic debate on how electric mobility can contribute to making the city climate neutral. In addition, we will stimulate innovations that contribute to this aim, such as using cars as batteries, or combining hubs for mobility with energy and electricity.

What

We will use a number of areas as living labs to test new mobility concepts:

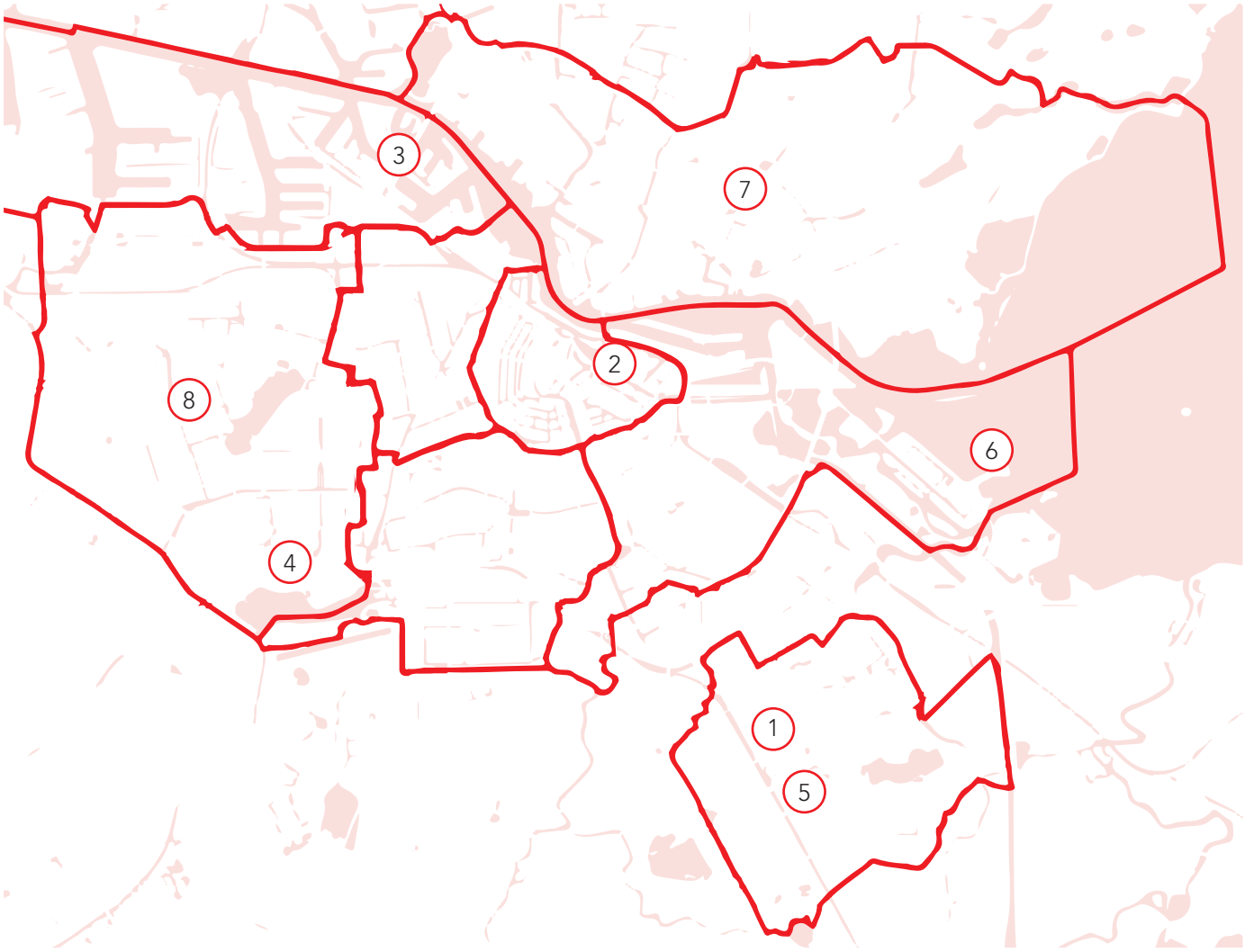
- ArenA area: because large events are held in this area almost every week, it is a venue where solutions can be tested and further developed. Mobility solutions that prove to be successful in the ArenA area will be scaled up to citywide level.
- Zuidoost: The district has always been planned for car use. As the district grows, this is not expected to be sustainable in the future. We want to make new mobility concepts available to residents of Zuidoost.
- Zuidas: over the coming years, accessibility in Zuidas will come under pressure. We will make alternatives available in cooperation with major employers and Zuidasdok.

We have a role in a number of new areas:

- Amstel III is an urban development project in the district of Zuidoost. In the coming years, the area will transform from a location for business and recreation into a lively district that is also residential.
- Strandeiland: here we will test the extent to which we can plan a new neighbourhood with an emphasis on shared mobility. What will this mean for the physical living environment?

Here we can determine a framework in advance for efficient mobility planning and the requirements the municipality should set in tenders. We will also develop concepts for innovative area funds. Lessons learnt from projects in the above areas will be made available to other areas.

Area development



We will also work on making more efficient use of space in existing areas by exploring what spatial adaptations are desirable for new transport options, and by clustering shared mobility in hubs.

Mobility hubs are necessary to offer locations for shared transport, and to provide transfer points for people either arriving in or leaving the city to change from private to shared transport. We are working on plans for mobility hubs in Sloterdijk and at the Olympic Stadium.

We are working from the bottom up with neighbourhood collectives on the development of affordable and accessible Neighbourhood eHubs (see the Projects section). Offering these modalities in the neighbourhood and organising them in cooperation with residents creates public support and gears the supply of transport to local needs.

1. Zuidoost and Arena area
2. Marineterrein - mobility center and innovation district
3. Haven-Stad
4. Rieker Business Park
5. Amstel 3 (transformation)
6. Strandeiland
7. Noord (accesibility gaps)
8. Nieuw-West (accesibility gaps)

Program Organisation

Communication

Our communication strategy concentrates on putting the mobility transition on the public agenda, initiating a movement towards different ways of travelling, instigating dialogue with Amsterdammers and facilitating the sharing of knowledge and formation of coalitions in the smart mobility ecosystem.

In putting the mobility transition on the public agenda, we will collaborate with partners such as Amsterdam Smart City and the Amsterdam Economic Board.

We will initiate a movement towards a different way of travelling by taking an ambassador approach. We will share the stories of Amsterdammers and providers contributing to the mobility transition in the city. We will also target permit holders in communications.

We will instigate a dialogue with Amsterdammers by establishing user panels in our projects and holding meetings in cooperation with partners such as Pakhuis de Zwijger and Waag. It is important that we have the right kind of conversation with the city about the mobility of the future – because of the impact on Amsterdammers, to create public support for radical measures, and to prevent a polarised debate between car owners and non-owners.

We will facilitate the sharing of knowledge and formation of coalitions in the smart mobility ecosystem at the level of the Amsterdam Metropolitan Area.

Monitoring and evaluation

Monitoring and evaluation are vital to scaling and are thus a central activity in this programme.

We will make use of a monitoring cycle in order to accurately assess progress towards the ambitions and the contributions made by individual projects. At the beginning of projects we will establish the intended aims and results, and the form a scaled up version might take. We will evaluate the effects of experiments in user panels, at the Oval Table with universities and research institutes, and with regional partnerships.

Measurement, rather than speculation as to what may or may not be effective, is crucial to decision-making on scaling. To perform these measurements, we will use a variety of existing sources as well as the mobility data platform to be developed within this programme.

Annually we will produce a progress report on the programme. Evaluations will take place at the end of 2020 and 2022.

Programme funding

Central to the Smart Mobility programme are collaboration, incentives and scaling, achieved together with our partners. To propel and boost this process, the programme has a budget of around €3.5 million a year in the period 2019-2022, which is used for personnel, cooperation in projects, research, and strengthening networks with other organisations.

To achieve a rapid increase in scale and reach as many people as possible in the coming years, we are seeking to realise a multiplier for the programme budget. We will do this in a variety of ways. Firstly, we will cooperate with various government bodies at different levels. Regionally we will work with the Amsterdam Metropolitan Area's Smart Mobility programme, and the Transport Authority Amsterdam (Vervoerregio Amsterdam). At national level we will collaborate with other cities and the Ministry of Infrastructure and Water Management, and internationally we will contribute to the EIT Urban Mobility KIC. Secondly, the multiplier will be realised through in-kind investments by universities and research institutes and private parties in collaborative projects.

Team

The Smart Mobility programme is a collaboration between the City of Amsterdam's department of Mobility and Public Space, and the Chief Technology Office Innovation Team. We work closely with the Low Car Use and Clean Air Action Plan programmes.

To realise our ambitions, it is crucial that we collaborate with other government bodies and partners. This programme collaborates with the Amsterdam Metropolitan Area, the Transport Authority Amsterdam, the Province of Noord-Holland, the G5 cities Smart Mobility partnership, and the Ministry of Infrastructure and Water Management and its executive agency, the Directorate-General for Public Works and Water Management (Rijkswaterstaat, RWS). Important partners are the University of Amsterdam, Vrije Universiteit Amsterdam and Amsterdam University of Applied Sciences, and the research institutes AMS Institute and TNO. We thus jointly invest in knowledge and innovation, learn from one another and strengthen one another.

Commissioners of the Smart Mobility programme:

Rachel Tienkamp

Head of Traffic Management
Department of Mobility and Public Space

Tijs Roelofs

Head of Innovation Team
CTO Innovation Team

Lizann Tjon

Programme Manager
Smart Mobility

Projects

Below is an overview of projects. Some started as part of the previous Smart Mobility action programme 2016-2018, such as Mobility as a Service Zuidas, and are continuing into this period; some are now starting, such as the Neighbourhood eHubs; and others are expected to start in the coming period, and are currently being explored, such as the mobility control centre of the future.

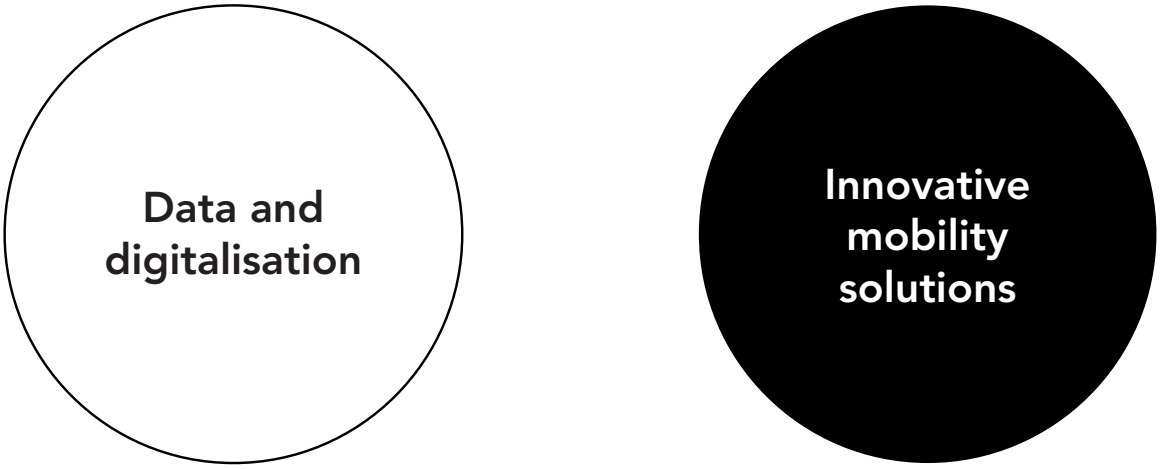


Photo: RoBoat LASERSCAPE

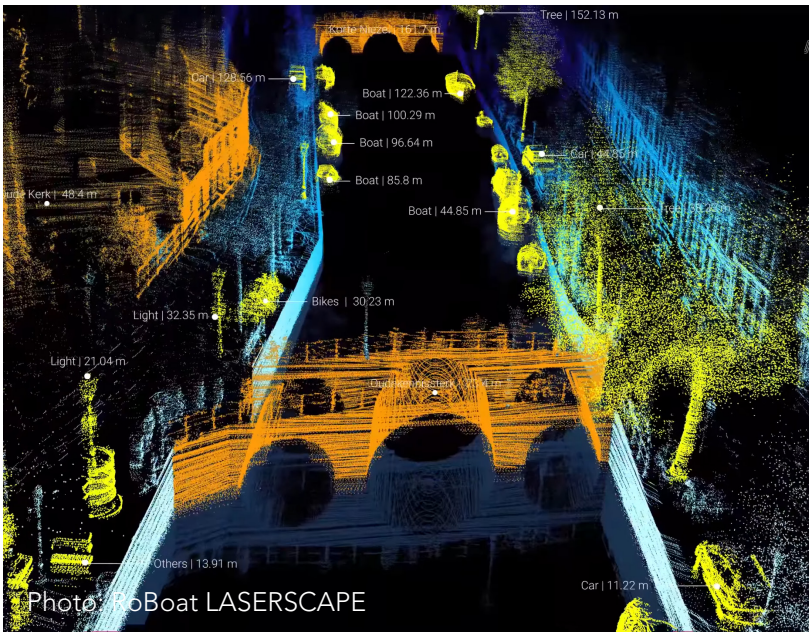


Photo: RoBoat LASERSCAPE

Projects: data & digitalisation programme line

A

A shared basis: building a strong data position

C

Learning by doing: from traffic management to mobility management

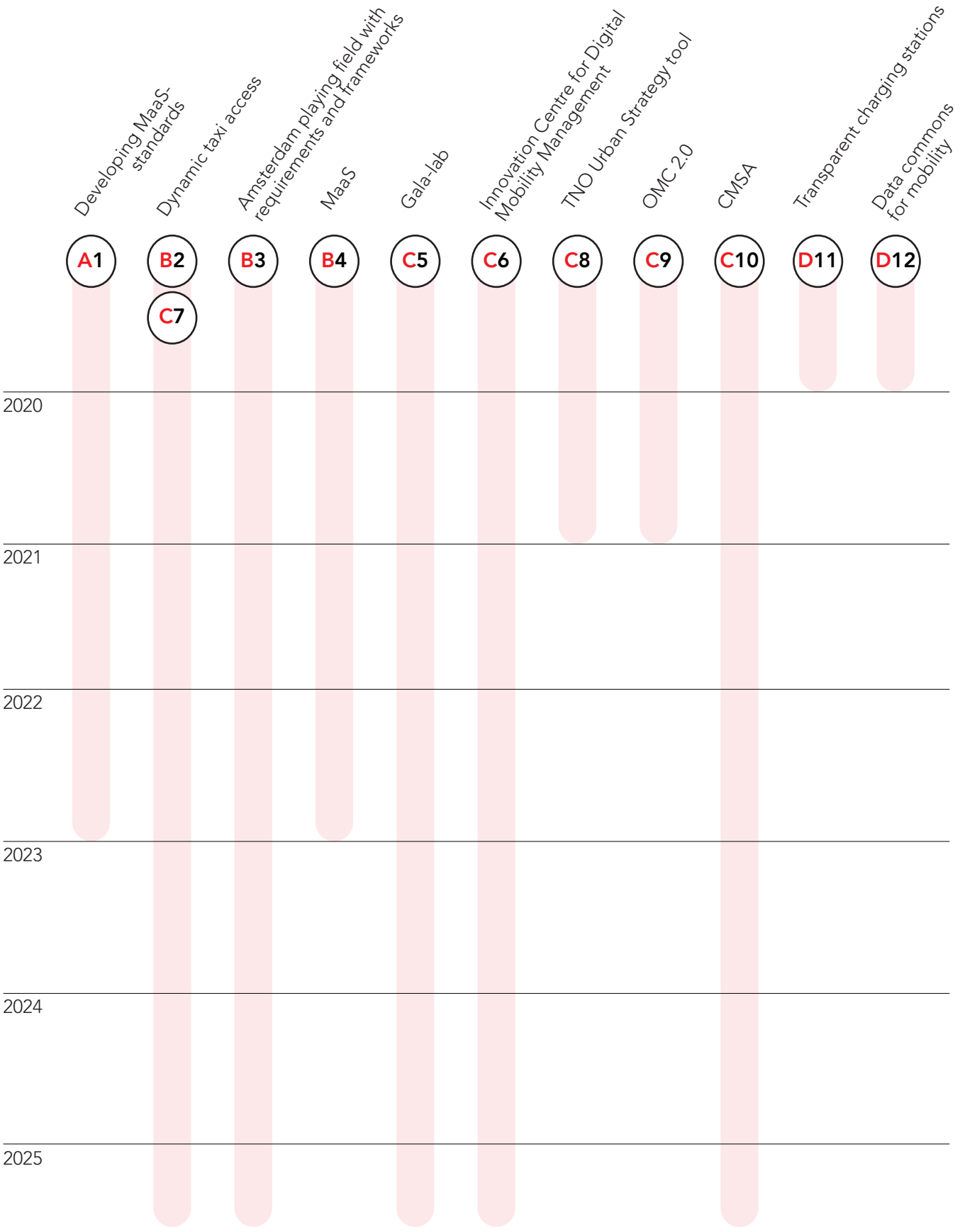
B

A level playing field: a framework to exert control

D

Ready for the future: aware of the consequences of the digitalisation of mobility

Project timeline



A1

Development of MaaS standards

We see it as desirable to enable the wide application of Mobility as a Service (MaaS) in Amsterdam. If travelling with the aid of MaaS providers becomes widely available, we want to be able to influence the travel advice given by mobility providers. To make this possible, we are developing standards for data sharing, and arranging for the communication of regulation scenarios.

2019

Partners: Ministry of Infrastructure and Water Management, possibly EU

B2 C7

Dynamic access for taxis

The development of a digital management tool to flexibly regulate taxi access depending on time and area.

An important management mechanism is the ability to permit or deny access to specific zones by means of geofencing. The supply of taxis can be matched to dynamic demand, or to a target number of taxis, for example based on maximum CO2 and particulate emissions.

As part of this project we are working on scalable policy-based, legal and technical tools and mechanisms for the digital management of commercial transport as a whole.

2019-2025

Partners: partnerships to be established

B3

Amsterdam playing field with requirements and frameworks

New mobility services require a different use of space and different forms of management in policy and regulation.

The aim of this project is to develop requirements and frameworks for parties operating in public space and to secure this in the municipal government's instruments and approach. This means developing restrictive and stimulative frameworks in new policy products, and further developing regulations, enforcement, permits, purchasing, area development, etc.

2019-2025

Partners: partnerships to be established

B4

Development of MaaS standards

We see it as desirable to enable the wide application of Mobility as a Service (MaaS) in Amsterdam. If travelling with the aid of MaaS providers becomes widely available, we want to be able to influence the travel advice given by mobility providers. To make this possible, we are developing standards for data sharing, and arranging for the communication of regulation scenarios.

2019

Partners: partnerships to be established

C5

Green Amsterdam Logistics Area-lab (Gala-lab)

GALA-lab is a platform consisting of three living labs in Amsterdam, which seeks to contribute sustainable solutions to social challenges in the Amsterdam Metropolitan Area in the field of accessibility, mobility and logistics. The aim is to utilise data to gain greater control over goods and passenger transport and to provide for the integrated management of these flows by developing one or more control tower(s). An additional aim is to make transport flows 'greener', for example using electric and hydrogen fuel cell vehicles.

2019-2025

Partners: Transport Authority Amsterdam, Schiphol Area Development Company (SADC), Port of Amsterdam, JC Arena, RAI, Tata Steel, Vrije Universiteit Amsterdam, Centrum Wiskunde & Informatica (CWI), SURFsara, University of Twente, Amsterdam University of Applied Sciences and Pakhuis de Zwijger

C6

Innovation centre for digital mobility management

As a basis for the innovation strategy for digital mobility management, we will establish a physical space at the Marineterrein where mobility data will be made available and research and tests will be conducted on new applications for mobility management by the municipal government, universities and research institutes, and companies.

An innovation centre will help the municipal organisation to increase its digital tools and skills in order to be able to exert sufficient control over mobility in future. The centre will also be valuable to universities, research institutes and companies in order to conduct research and tests on new applications.

2019-2025

Partners: AMS Institute. At a later stage possibly also regional government, the Ministry of Infrastructure and Water Management and relevant economic operators such as TomTom, Google or Daimler.

C8

Urban Strategy Tool

The Urban Strategy Tool will accelerate and improve spatial planning in the urban environment by enabling access to information from connected, high-quality computer models. The models will simulate traffic, air quality, noise, sustainability and other aspects of the physical living environment. The City of Amsterdam will use the tool for substantiation and cost calculation regarding complex issues in the physical domain and their effects, particularly in the fields of traffic, area development, emissions and accessibility.

2019-2020

Partners: TNO, Accessible Amsterdam (Amsterdam Bereikbaar), DataLab, Zuidas

C9

OMC 2.0 – Operational mobility center

The aim of the Operational Mobility Centre is to keep Amsterdam-Zuidoost accessible and liveable during events in the area. In cooperation with stakeholders involved in mobility and the organisation of events, traffic flows into and within the area will be prepared, monitored and managed.

By sharing data and video, a holistic picture will be established. By making a real-time comparison with historical data, assumptions can be made regarding the development of the situation. This makes it possible to anticipate and prevent potential problems. The following steps will be taken in the second phase of the OMC: centralisation of data, addition of crucial stakeholders, simulation methodology for historical data, from protocol-driven to data-driven anticipation, implementation of social media teams, preparation for IoT integration (sensors), and parking management through dynamic pricing.

2019-2020

Partners: Johan Cruijff Arena, Ziggo Dome, AFAS Live, Transport Authority Amsterdam, GVB (municipal transport operator), NS (Dutch Railways), Province of Noord-Holland, Villa Arena (shopping centre).

C10

Crowd Monitoring System Amsterdam (CMSA)

CMSA makes it possible to facilitate data-driven pedestrian flows in busy areas of Amsterdam and to direct them where necessary. In 2019 we will complete the pilot phase, and the system and tools will gain a permanent status. We will also share the data from the CMSA via the Mobility Data Platform (Mobilab) so the whole of Amsterdam can benefit.

2019-2022

Partners: DrukteRadar, CMSA and Johan Cruijff ArenA

D11

Transparent charging stations

The growth in electric transport is putting increasing pressure on the charging infrastructure. Smart charging is one of the solutions to make more efficient use of the grid. Algorithms can be used to give priority to chargers depending on the time, availability of sustainable energy, or based on other variables. This project comprises practical research by monitoring smart charging stations to ascertain how we can communicate on the use of these algorithms in public space and use their capacity in a smart and efficient way – adaptive and personalised.

2019

Partners: AMS Institute, ElaadNL, Nuon, Delft University of Technology

D12

Mobility data commons

The municipality is currently working to combine data on a single platform developing a framework making it compulsory for all parties operating in public space to share data with the government.

In this project, using policy labs we are exploring what architecture is needed to enable residents to remain the owners of their mobility data. In the setting of a policy lab, we are studying the handling of mobility data based on the data commons concept. What does this imply for aspects such as governance, value creation and safety?

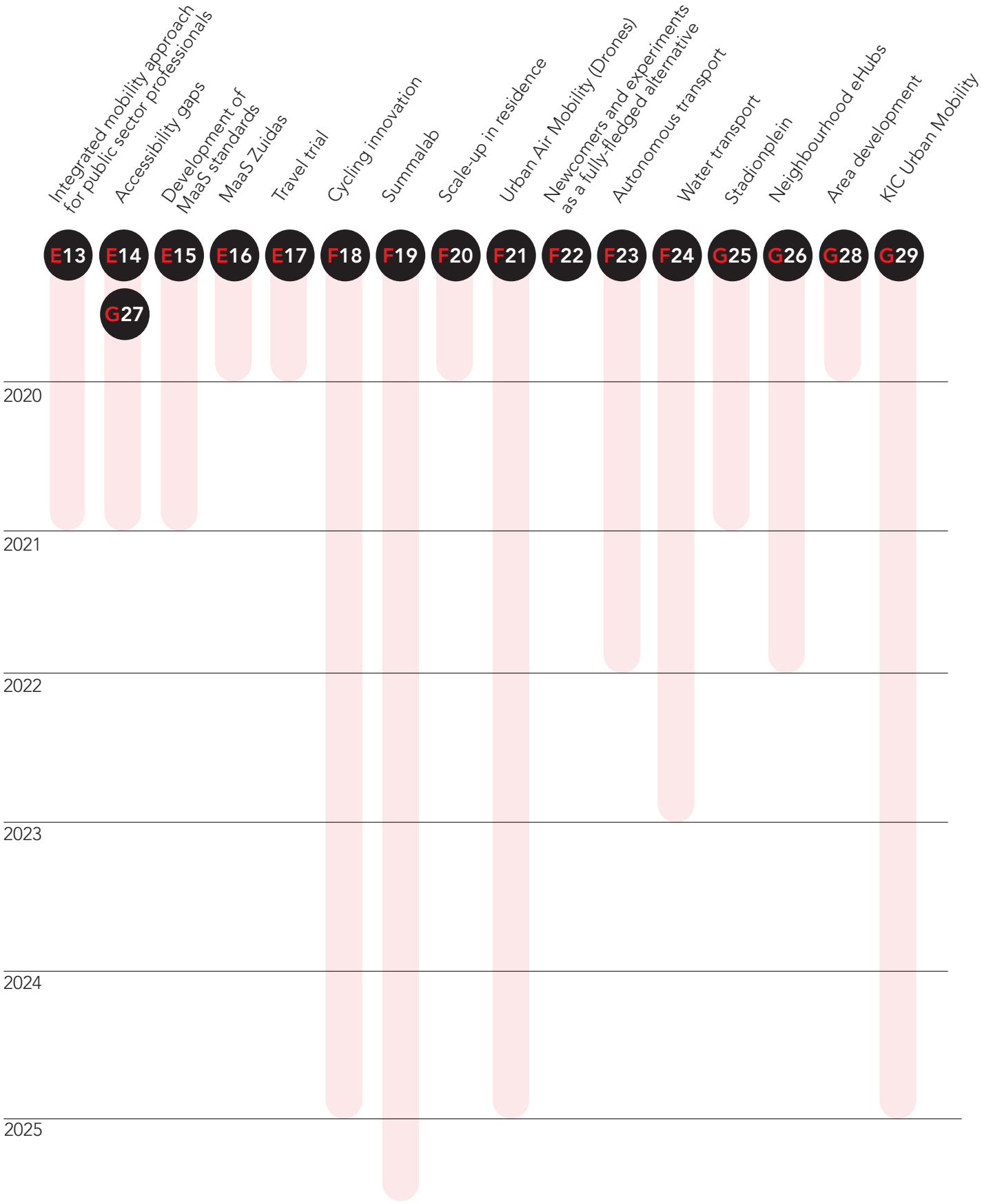
This project promotes public debate on the digitalisation of mobility and takes steps towards the prevention of data abuse.

2019

Partners: Waag, Transport Authority Amsterdam

Projects: innovative mobility solutions programme line

Project timeline



E13

Integrated mobility approach for public sector professionals

We are developing a number of new and sustainable mobility concepts as alternatives to private car ownership for commuting public sector professionals. We are starting with pilots to identify where the needs lie:

- 'Travel like a pro': personal travel advice and a trial offer with a mobility budget to travel to work for two months using an alternative form of transport to the car.
- Bike pilot: 'Cycle like a pro' – leave the car at home and take an e-bike
- Ride sharing: smart clustering of journeys to work

Successful experiments will be converted into a structural supply, such as a guide to choosing transport for commuting professionals and a plan of approach for the social sector to make structural changes in the use of transport budget.

2019-2020

Partners: De Mobiliteitsfabriek, transport companies, school boards, care institutions, panel of commuting teachers

E14 G27

Accessibility gaps – opportunities for smart mobility in poorly accessible areas

Smart mobility and technology offer solutions for everyone. In this project, smart solutions will be applied to improve accessibility for vulnerable groups of people who live in areas where mobility is adversely affected by the area's remoteness or by the low socio-economic status of the residents.

2019 - 2020

Partners: Transport Authority Amsterdam, GVB (municipal transport operator)

E15

Development of MaaS standards

We see it as desirable to enable the wide application of Mobility as a Service (MaaS) in Amsterdam. If travelling with the aid of MaaS providers becomes widely available, we want to be able to influence the travel advice given by mobility providers. To make this possible, we are developing standards for data sharing, and arranging for the communication of regulation scenarios.

2019

Partners: Ministry of Infrastructure and Water Management, possibly EU

E16

MaaS Zuidas

In the MaaS Zuidas project we have issued a request for tenders for a MaaS service that makes a sustainable contribution to the accessibility of the Zuidas district and the construction of Zuidasdok, and which can be scaled to include other users and target groups in and around Amsterdam.

Autumn 2019

Partners: Ministry of Infrastructure and Water Management, Transport Authority Amsterdam

E17

Travel trial (MaaS approach for residents)

In the travel trial, Amsterdammers are given a mobility budget in return for handing in their cars for two months. Aimed at stimulating behaviour change, the trial has a capacity for 100 participants, and will provide insight into the conditions under which Amsterdammers are prepared to travel using Mobility as a Service (MaaS). We will learn about Amsterdammers' travel behaviour and the appeal of alternative forms of transport.

Juni 2019

Partners: Amsterdam University of Applied Sciences, Bunq

F18

Cycling innovation

In cooperation with the cycling programme, innovations in the field of innovative mobility concepts and data are being sought to increase cyclist satisfaction in Amsterdam. In the coming years, a number of experiments will be launched.

- 'Cycle like a Pro' experiment (part of the approach for public sector professionals). The experiment explores how gaming via an app can increase bike use in this target group.
- Flo: a tool to let cyclists know whether they can make a green traffic light before it changes.
- Smart cycle parking: application of chips for cycle registration in bike parks, and innovations to bike use in the districts of Zuidoost, Nieuw-West and Noord, for example by means of digital applications such as apps.
- Technology at the bike depot: find your bike using an app.

2019-2025

Partners, possible external partners such as Waag and bike providers.

F19

Smart Urban Mobility MetA Lab (SUMMALab)

SUMMALab is aimed at keeping cities accessible in the most sustainable way possible, taking into consideration liveability and use of space. Its aim is to connect and advise different experiments, initiatives (including start-ups) and labs in this field in order to accelerate them, and to realise scaling and thus advantages of scale:

1. 'Last mile' solutions: self-driving shuttles and mobile robots for passengers and goods, bike sharing systems and micro-mobility.
2. Door-to-door solutions: car sharing, ride sharing, carpooling, Mobility/Transport as a Service.
3. Urban built infrastructure: parking facilities, loading and unloading locations, parking regulation and pricing, and access restriction for specific vehicle types.

2019 - 2025

Partners: Delft University of Technology, Maastricht University, TNO, The Hague University of Applied Sciences, Amsterdam Metropolitan Area, Province of Noord-Holland, City of Rotterdam, City of The Hague, City of Delft, AMS Institute, Future Mobility Network, We-all-wheel

F20

Scale-up in Residence for mobility

Via Scale-up in Residence, mobility questions in the metropolitan area are presented to the market by means of a competition, in order to find the most suitable and innovative solutions for challenges the city and region are facing. Amsterdam thus generates new solutions in cooperation with young companies and strengthens the business climate for smart mobility.

2019-2021

Partners: Amsterdam Metropolitan Area, Transport Authority Amsterdam

F21

Urban Air Mobility (Drones)

Urban Air Mobility: the airspace above the city is virtually empty. Technological and innovative developments now make it possible to use the lower airspace (50-150 metres) for mobility and safety. But is it possible to implement this responsibly?

In 2018, the European Commissioner for Transport, Violetta Bulc, launched the European Network of U-Space Demonstrators. Eighteen European cities will develop concepts whereby drone-based technology can be applied in Smart Cities. Alongside Maastricht, Heerlen and Enschede, Amsterdam is one of the cities which will work with partners within the domain of Smart Cities on a new form of transport modality within the smart mobility strategy. While unmanned aircraft may be used for management and maintenance of buildings, or inspections over land or water, manned aircrafts such as electric multicopters (often fitted with drone technology) may be used for Urban Air Mobility (UAM): the transport of goods and/or passengers in lower airspace over an urban area.

As a leading provider of mobility services, Uber has already announced plans to operate an aerial taxi drone commercially between urban hubs in three countries. For such services to be offered, various changes in infrastructure and legislation will be required.

UAM offers opportunities in the field of mobility, safety, security, space and economy. The challenges lie in public acceptance and physical space within the urban development of a city like Amsterdam.

2019-2024

Partners: EU (Directorate-General for Mobility & Transport), EIP-SCC (European Innovation Platform Smart Cities and Communities), SESAR, EASA, RAI Amsterdam, Schiphol Group, Airbus, Boeing, ANWB, Johan Cruijff ArenA, NLR, LVNL, Eurocontrol, Ministry of Infrastructure and Water Management, AirMap, KPN, Ministry of Defence, Delft University of Technology, Achmea, TNO, Volocopter, DJI, National Police Corps, Port of Amsterdam, PostNL, Eaton and the Amsterdam Drone Week.

F22

Newcomers and experiments as a fully-fledged alternative

It is vital for Amsterdam that we constantly anticipate new technologies and concepts so the city is prepared for them. Amsterdam will avoid being taken by surprise by new technologies and concepts in future by conducting small-scale, solution-oriented experiments. In the coming period, pilots can begin regarding:

- Light electric vehicles
- Smart logistics
- Roboat (water transport)

Partners: AMS institute, EIT Mobilus

F23

Autonomous transport

- Launch test location for autonomous transport in Amsterdam street
- Test autonomous fleet management at mobility control centre
- Initiate public dialogue on desirability and effects of autonomous transport
- Monitor speed of development of self-driving technology in Transport Knowledge Circle (Kenniskring Zelfrijdend Vervoer)
- Conduct research on effects on accessibility, area development, traffic safety etc

2019

Partners: Transport Authority Amsterdam, GVB (municipal transport operator), Netherlands Vehicle Authority (RDW), Province of Noord- Holland, AMS Institute

F24

Water transport

The 'digital canal' is a dashboard collating all the information that sensors and smart cameras gather on boat traffic in Amsterdam. Particularly in fine weather, the boat traffic on Amsterdam's canals is extremely busy, and this can lead to dangerous situations, as well as noise and other disturbances. The digital canal dashboard has been developed to take a targeted approach to preventing noise and danger. Using the information collected by sensors and smart cameras, artificial intelligence predicts the places where the canals will be very busy. Waternet, the water company for Amsterdam and the surrounding area, can then inform skippers, take traffic management measures and deal with nuisance, thus keeping Amsterdam's canals attractive and safe.

2019-2022

Partners: Waternet, Global Guide Systems (from Startup in Residence), Improvement IT, Province of Noord-Holland, the Directorate-General for Public Works and Water Management (Rijkswaterstaat, RWS, the executive agency of the Ministry of Infrastructure and Water Management) and the Port of Amsterdam.

G25

Stadionplein Smart Mobility Lab

At the beginning of 2020, via an innovation-oriented tendering procedure, an economic operator or consortium of economic operators will be selected to develop a Smart Mobility Lab at Stadionplein. The primary aims are:

- Facilitating the supply of electric shared mobility and rapid charging stations.
- Experimenting with innovative mobility concepts, with the aim of learning as a city and potentially scaling up.
- Taking a pioneering role in the field of the mobility of the future: how are mobility and innovative mobility concepts developing and how should Amsterdam deal with them, both now and in the future?

2020

Partners: Partnerships with universities and research institutes to be established

G26

Neighbourhood eHubs

Neighbourhood eHubs (eBuurtHubs) are places in the city where clustered shared mobility is available. The development and design of Neighbourhood eHubs is specific to Amsterdam, and takes place in cooperation with residents and economic operators. This new mobility concept helps to reduce car ownership and improve accessibility and liveability.

2019-2021

Partners: City of Nijmegen, City of Dreux, City of Kempten, City of Leuven, Transport for Greater Manchester, Transport Authority Amsterdam, Amsterdam Metropolitan Area, Bayern Innovativ, Taxistop, Autodelen.net, Amsterdam University of Applied Sciences, lectorate Psychology for a Sustainable City, University of Newcastle upon Tyne, Delft University of Technology, AMS Institute, Polis, Cargoroo, Urbee, University of Antwerp, Smart and Sustainable (Slim en Duurzaam; the Directorate-General for Public Works and Water Management (Rijkswaterstaat, RWS), the Ministry of Infrastructure and Water Management, Province of Noord-Holland)

G28

Area development

The planned growth in Amsterdam will lead to an increase in mobility. To design the city and the mobility of the future, we will generate smart mobility solutions to cope with this growth, by coupling experiments and new technology with area-based challenges. We will do so in both new and existing areas.

Existing areas
- Marineterrein: mobility centre and innovation district
- District of Noord: new mobility concepts in poorly accessible areas
- District of Nieuw-West: new mobility concepts in poorly accessible areas

Areas to be developed
- Haven-Stad and Sloterdijk: application of new mobility concepts to benefit increased density
- Strandeiland: research on mobility hubs
- Zuidoost – Amstel III

2019

Partners: Developers, mobility operators, Johan Cruijff ArenA, Amsterdam Smart City, Transport Authority Amsterdam, Amsterdam Metropolitan Area

G29

KIC Urban Mobility

Amsterdam is part of the EIT Urban Mobility KIC, the European knowledge and innovation platform in the field of urban mobility and chair of the City Club that sets the research agenda for Urban Mobility. This is a project in which leading cities, businesses, universities and research institutes will collaborate in order to promote innovation and knowledge in the field of mobility, and to improve the quality of public space in cities. This offers Amsterdam valuable opportunities to strengthen the Smart Mobility programme, acquire new knowledge and find solutions to our problems (such as accessibility, crowding and the quality of public space).

2019-2025

Partners: 48 partners

Appendix

Oval Table

The City of Amsterdam works closely with Amsterdam University of Applied Sciences, the University of Amsterdam and VU Amsterdam, and the research centres AMS Institute and CWI. There is a need for a greater depth of knowledge through research in order to identify developments and to gain insight into the effects and impact that innovations have on the city. Once every six weeks, there is a meeting to coordinate the supply and demand of knowledge and research, and to discuss matters such as joint projects and EU and national calls. This not only facilitates knowledge sharing but also produces concrete results. For the city, it yields new insights and knowledge of practical value, and for the universities and research institutes, more funding for research through joint calls. Amsterdam thus keeps up to date with international developments, gains access to knowledge, participates in leading consortiums of scholarship and practice, and learns from other cities. Last year, Amsterdam secured millions of euros in additional research funding from the Dutch Research Council (NWO) and European funds. Of course, there is healthy competition among the universities and research institutes, but above all their research competencies and areas of expertise are complementary, enabling Amsterdam to take on the competition at international level.

Hogeschool van Amsterdam

AMS Amsterdam Institute for Advanced Metropolitan Solutions

CWI Centrum Wiskunde & Informatica

Universiteit van Amsterdam

VU Vrije Universiteit Amsterdam

Smart Mobility Ecosystem

At the start of the Smart Mobility action programme 2016-2018, a variety of collaborations were explored and initiated. They contribute to the growing smart mobility ecosystem and will be developed further. Below is a brief description of the cooperation at different levels.

Regional cooperation

One of the partnerships in which we participate is the Amsterdam Metropolitan Area (AMA). Eighty percent of all journeys departing in the AMA are to a destination within the area's boundaries. It therefore makes sense to tackle mobility issues at the scale of the AMA, as a daily urban system.

To this end, an AMA Smart Mobility programme 2018-2022 has been established. This collaboration comprises powerful partners that are jointly able to exert a major influence on the accessibility of the region: the municipality and provinces as road maintenance authorities, Transport Authority Amsterdam as concession manager, the Amsterdam Economic Board for the strong network and crossovers, Schiphol Airport as a 'mainport' and innovative airport, the Johan Cruijff ArenA as a leader in innovation, sustainability and smart crowd management, and AMS Institute as a provider of knowledge and applied research on urban issues. The cooperation among these organisations in the AMA Smart Mobility programme benefits the entire region.

Within the AMA there is no transfer of responsibilities or competences from individual organisations to the region. Each organisation participates voluntarily on the basis of their ambitions and objectives.

The cooperation promotes knowledge sharing, offers efficiency advantages in the development of Smart Mobility tools and the exploration of what controlling role is appropriate, and provides a structure to scale up local innovations to regional solutions. Moreover, operating regionally puts us in a stronger position to set the agenda in relation to other government bodies and economic operators.

National cooperation

At national level, we cooperate closely with the Ministry of Infrastructure and Water Management, for example for the framework for regional pilots for Mobility as a Service. Other important partners are Transport Authority Amsterdam (for the possibilities of autonomous transport and new mobility concepts) and the Directorate-General for Public Works and Water Management (Rijkswaterstaat, RWS) through the Smart and Sustainable programme and for extra funding for Neighbourhood eHubs and MaaS Zuidas.

International cooperation

Since 2019 Amsterdam has been a member of EIT MOBiLus, a consortium of 48 international organisations collaborating on research over a period of seven years. Also at international level, various conferences are held, such as Smart City Expo, Intertraffic and ITS, at which Amsterdam is prominent on the agenda with its Smart Mobility programme. Finally, in 2019 Amsterdam joined the World Economic Forum's Future of Mobility working group, within which there is also collaboration with organisations in the private and public sectors.

Colofon

Download the Smart Mobility programme 2019-2025

Follow the link to the page on Smart Mobility 2019-2025, where you can download the full agenda.

www.amsterdam.nl/smartmobility

Gemeente Amsterdam

Royal HaskoningDHV
Enhancing Society Together

Contribution to process, strategy and text

UNS UNSTUDIO

Contribution to process, strategy and visualisations

17 juni 2019