



Ministry of Infrastructure and the
Environment

Work Programme 2017

KiM Netherlands Institute for Transport Policy Analysis

Contents

0 About KiM and this Work Programme 5

- 0.1 Introduction 5
- 0.2 Products, services and working methods 6
- 0.3 Positioning 7
- 0.4 Core themes 8
- 0.5 About the Work Programme 2017 9
- 0.6 Explanatory remarks on Chapters 1 to 6 10

1 Mobility, Accessibility and Spatial Planning 11

- 1.1 Explanation of the core theme 11
- 1.2 The internal linkages within the transport and traffic system and how the system interacts with the surrounding environment 11
- 1.3 Accessibility 14
- 1.4 Project overview table 16

2 Mobility of Groups 17

- 2.1 Explanation of the core theme 17
- 2.2 Project overview table 22

3 Sustainable Mobility, Safety and Transition 23

- 3.1 Explanation of the core theme 23
- 3.2 Sustainability and safety of the mobility system 23
- 3.3 Project overview table 24

4 Models and Data 25

- 4.1 Explanation of the core theme 25
- 4.2 Basic information about mobility and accessibility 25
- 4.3 Transport and traffic models 27
- 4.4 Project overview table 29

5 Social Importance, the Role of Government and Market Organisation 30

- 5.1 Explanation of the core theme 30
- 5.2 The social importance of mobility and transport, and especially of the mainports 31
- 5.3 The role of government and market organisation 32
- 5.4 Project overview table 33

6 Policy Evaluations and Assessment Frameworks 34

- 6.1 Explanation of the core theme 34
- 6.2 Developing and broadening methodology for ex ante evaluations 34
- 6.3 Improving the uptake of insights from assessment frameworks 35
- 6.4 Implementing and reviewing evaluations 37
- 6.5 Project overview table 38

List of abbreviations 40

Colophon 42

0

About KiM and this Work Programme

0.1 Introduction

This is the 2017 Work Programme of the Netherlands Institute for Transport Policy Analysis (KiM). KiM provides knowledge for the development of policy by the Ministry of Infrastructure and the Environment (IenM) on mobility and accessibility, including the relationships between liveability and spatial planning. KiM makes this knowledge freely available to third parties.

The IenM policy agenda for 2017, which is part of the 2017 budget, provides the context within which KiM works. This policy agenda contains various topics on which KiM provides expert advice, including trends in mobility and accessibility, expanding urbanisation, technological developments and climate change.

KiM's expert input to these issues draws on its up-to-date, evidence-based knowledge base. As stated in the *Koers IenM 2016–2020* strategy document presented in 2015, the knowledge institutes within and affiliated to IenM (including KiM) will be more closely involved with policy. The knowledge institutes will be more closely involved in:

- carrying out exploratory studies and analyses at the start of the policy process;
- monitoring and evaluating policy during or after the implementation of policies;
- giving advice during the development of policy options by carrying out analyses and providing existing knowledge (called 'knowledge at the table').

KiM has been a key provider of these services to the ministry ever since it was established.

As a new government will be formed following the parliamentary election to be held March 2017, the IenM policy directorates cannot anticipate which research questions they will be asked to answer in 2017 with as much confidence as in previous years. This means that the KiM Work Programme has a more dynamic nature than in other years: interim adjustments and additions to the Work Programme may lead to a reprioritising of projects, other forms of implementation and/or to the cancellation of projects.

Demand-driven and evidence-based

KiM's Work Programme is demand-driven, but the demand for research is not a case of one-way traffic from the policy directorates to KiM in the sense of placing an order for a product. The articulation of research questions is based on an active dialogue in which KiM regularly alerts the policy directorates to strategic developments, social trends and other issues affecting mobility that may require a policy response. If KiM considers a study to be of considerable importance for the development of future policy, but it has not been requested by one of the policy directorates, KiM can take the decision to carry out the study itself. However, such studies are infrequent. In summary, KiM's stated objective is to strengthen and broaden the strategic knowledge base for mobility policy and thus enhance the quality of mobility policy. The term used for this is 'evidence-based policy': basing policy choices on relevant facts, sound analyses and reliable estimates of risks based on nationally and internationally available knowledge.

0.2 Products, services and working methods

Products and services

KiM delivers three types of products and services to strengthen and broaden the strategic knowledge base for mobility policy:

- **Research projects:** exploratory studies and policy analyses based on factual information and reviews of scientific and other literature, which are then translated into a form that is applicable to policy and practice. The resulting publications are publicly available.
- **Knowledge at the table:** introducing knowledge into policy processes in the following ways:
 - discussions, presentations and short reports on the available knowledge and empirical evidence;
 - answering ad hoc questions;
 - giving IenM access to national and international knowledge networks (what knowledge can be obtained from which sources?);
 - giving assistance to the IenM policy directorates in formulating research questions and methods for research to be contracted out to third parties;
 - participating in steering committees;
 - advising on and assisting with the planning of knowledge development programmes for research institutes outside IenM.
- **Notification memorandum:** drawing attention within and outside the ministry to various topics in response to current policy, recent research and reports by third parties. This may be in the form of a memorandum, or even an email, a telephone call, meeting or presentation. Some of the blogs written by KiM staff members also fulfil this role. These activities are not included in the Work Programme, although capacity is available within KiM for this purpose.

KiM's working methods

KiM works in the following way:

- KiM carries out projects in close cooperation with the policymakers in IenM. The short line of communication between the policymakers and KiM helps to strengthen the knowledge base for the ministry's policies. KiM remains fully responsible for the products.
- All research projects are published in the public domain within three months of completion of the study. In some cases an exception is made, for example if the research forms an input to the development of a major policy document, in which case the relevant research reports are published simultaneously with the policy document.
- For knowledge-at-the-table projects a decision can be made, in consultation with the relevant policy directorate, to publish the information (for example, in the form of a memorandum, paper or presentation).
- The type of policy input given by KiM depends on the phase of policy development concerned:
 - Agenda setting: KiM outlines substantive developments and identifies *leverage points for policy intervention*.
 - Policymaking: KiM provides ex ante assessments of the effects of *policy levers* or *policy instruments* proposed by the policy directorates; where necessary KiM indicates that the pallet of potential *policy levers* is wider than initially proposed by the policy directorates and, in consultation with policymakers, evaluates this broader range of *policy levers*.
 - Policy evaluation: KiM provides ex durante or ex post assessments of the impacts of implemented *policy instruments*.

KiM's policy analyses are used as inputs to political and policy decisions.

- KiM examines issues from different angles and from several disciplines, which makes KiM's analyses more robust. Even in studies in which a single perspective is dominant, the results are evaluated from a range of different perspectives to increase their robustness. This is also reflected in the wide range of disciplines represented within KiM (which include economics, social geography, regional planning, sociology, psychology, traffic engineering and public administration).
- KiM produces not only descriptive studies (which trends can be observed – the 'what' question), but also explanatory analyses (what are the underlying factors – the 'how' question).
- KiM aims to strengthen and broaden the ministry's knowledge base across the full range of the ministry's policy responsibilities, including the relationships between mobility and spatial development and between mobility and sustainability and safety.

0.3 Positioning

KiM is positioned within IenM to facilitate the uptake of KiM's products and enable direct interaction with the policy directorates. KiM's work is almost entirely demand-led and much of its output is in the form of knowledge at the table.

Cooperation with partners

KiM works with a number of external knowledge institutes, universities and Rijkswaterstaat Water, Traffic and Environment (RWS WVL). KiM does this mainly on the basis of knowledge developed elsewhere (in the Netherlands and abroad), which it then integrates and makes applicable to policy and practice. KiM sometimes subcontracts parts of research projects to private organisations (or universities) and then integrates the results into a KiM product.

KiM has made multi-year agreements with the policy assessment agencies on cooperation in areas of common interest and an effective and efficient division of tasks. These include making optimal shared use of the available expertise, participating in each other's feedback groups, holding joint brainstorming sessions and critiquing each other's products.

Contacts with the scientific community

KiM is associated with 10 academics in different disciplines from the Netherlands and abroad: the KiM fellows. These fellows provide the academic underpinning for KiM's work. A core task of the fellows is to comment on project plans and draft publications. In addition they are invited to give lectures and presentations and to take part in brainstorming sessions to give extra impetus to new research projects.

The current fellows are:

Name	Discipline	University
Professor Luca Bertolini	Planning	University of Amsterdam
Professor Caspar Chorus	Choice Behaviour Modelling	Delft University of Technology
Professor Martin Dijst	Urban Development and Spatial Mobility	Utrecht University
Professor Jonas Eliasson	Transport Systems Analysis	KTH (Royal Institute of Technology) Stockholm
Professor Serge Hoogendoorn	Operations and Management of Transport Systems	Delft University of Technology
Professor Vincent Marchau	Uncertainty and Adaptivity of Societal Systems	Radboud University Nijmegen
Dr Tim Schwanen	Transport and Social Geography	University of Oxford
Professor Erik Verhoef	Spatial Economics	VU University Amsterdam
Professor Eddy Van de Voorde	Transport and Regional Economics	University of Antwerp
Professor Bert van Wee	Transport Policy	Delft University of Technology

KiM aims to be a pivotal link between the ministry and the universities on issues relating to transport and mobility. To this end KiM plays an active role in research networks such as the TRAIL Research School.

Researchers in civil aviation cooperate in the Airneth international scientific network for aviation research and policy. As Airneth and KiM both aim to support aviation policy with insights from research, KiM took over the management of Airneth in mid-2012 following periodic coordination with the ministry's Civil Aviation Department. KiM's role in steering Airneth activities enhances their demand-driven character and makes the research input to aviation policy more effective. Airneth activities are geared to providing evidence to support KiM's responses to the questions from the policy directorates. Airneth's objectives

are otherwise unchanged: to further expand, maintain and make use of the scientific network in aviation. KiM commissions Airneth to organise workshops, seminars and lectures and prepare position papers to make the results of external scientific research more accessible to aviation policymakers.

International orientation

As many research questions involve the acquisition of knowledge through international academic cooperation, or have a strong international context, KiM has established special relationships with several relevant international research institutes. KiM staff members also participate in conferences and symposia where they present research results. KiM also works to a limited extent in international projects and participates in several international forums, such as the Joint Transport Research Committee (JTRC), and in committees of the US Transportation Research Board (part of the National Research Council).

0.4 Core themes

The research projects carried out by KiM fall within several core themes. These core themes are designed in the first instance to clarify what knowledge and expertise is available. Because they consist of complementary clusters of projects and other activities, the core themes also provide the basis for structuring KiM's activities.

Core themes:

- define the type of information and expertise KiM can be called upon to deliver;
- logically integrate the 'individual' studies and knowledge-at-the-table questions, which are an inevitable consequence of demand-driven research;
- provide a multi-year, agenda-setting framework for concrete projects.

The core themes in 2017 are listed below.

1. Mobility, accessibility and spatial planning. In this core theme we describe and explain national and international trends in mobility and transport and their consequences for accessibility. We review past developments and describe the trends in mobility and accessibility in the light of developments in society and policy effects.

We also look forward in medium and long term outlooks and assess the potential accessibility effects of specific policy options, paying specific attention to the interactions with spatial development and urban planning.

2. Mobility of groups. This core theme is about the mobility of different groups in society. The mobility behaviours of these groups differ. For example, differences can be seen between old and young and between residents of highly urbanised and less urbanised areas. Describing and explaining these differences provides important information for the development of policy because we can use it to determine whether policy instruments targeted at certain groups are effective or not.

3. Sustainable mobility, safety and transition. In this core theme we investigate sustainable mobility and mobility-related safety aspects. It includes the consequences for liveability and the safety of the current mobility system as well as scenarios for a more sustainable and safer mobility system in future. We devote considerable attention to the transition process: what will a sustainable and safe mobility system look like, what are the obstacles to achieving this, and what points of policy leverage exist to facilitate these transitions?

4. Models and data. Central to core theme 4 are models and data on personal mobility and freight transport. We collect and manage data ourselves and help others to upgrade their data collection systems where these are relevant to the ministry's policy areas. We advise on modelling needs and requirements and to a limited extent we develop models ourselves. We also develop policy indicators for monitoring the ministry's policy objectives. An example is the accessibility indicator.

5. Social importance, the role of government and market organisation. In this core theme we focus on the part played by mobility, transport and infrastructure in the spatial and economic development of the Netherlands, with an emphasis on the significance of the mainports (Port of Rotterdam and Schiphol Airport) and other transport hubs. We analyse the options available to the government to maintain and develop this national interest. We explore the effectiveness and efficiency of government-market relations in the various sectors (road, regional public transport, rail, inland shipping, maritime shipping, aviation). We also examine how to make the administrative relations between the various tiers of government more effective and efficient.

6. Policy evaluations and assessment frameworks. Core theme 6 is concerned with evaluating the effectiveness and efficiency of policy instruments, both before and after they have been introduced. An important element is refining and expanding the scope of the methodology for social cost-benefit analysis, paying particular attention to the economic and administrative aspects. KiM advises the policy directorates on performing evaluations, carries out evaluations itself and reviews third party evaluations.

Management team

The KiM management team consists of the director, the deputy director, two core theme managers and a high-level expert. The KiM director is George Gelauff. Arjen 't Hoen is deputy director and a core theme manager. Sascha Hoogendoorn-Lanser and Pauline Wortelboer-Van Donselaar are core theme managers. The KiM high-level expert is Jan van der Waard.

Responsibility for the core themes is divided between the core theme managers as listed in the table below.

Core Theme	Core Theme Manager
1. Mobility, accessibility and spatial planning	Arjen 't Hoen
2. Mobility of groups	Sascha Hoogendoorn-Lanser
3. Sustainable mobility, safety and transition	Arjen 't Hoen
4. Models and data	Sascha Hoogendoorn-Lanser
5. Social importance, the role of government and market organisation	Pauline Wortelboer-Van Donselaar
6. Policy evaluations and assessment frameworks	Pauline Wortelboer-Van Donselaar

0.5 About the Work Programme 2017

Preparation

Ideas for new projects come from the policy directorates and from KiM itself. These are critically assessed and prioritised in consultation with the commissioning departments, primarily on the basis of the urgency of projects to the commissioning departments, and secondarily on the match between the research questions and the pool of knowledge and expertise within KiM and KiM's working methods described in section 0.2. This requires agreement with the ministerial departments at various levels. Moreover, the Work Programme is discussed with PBL Netherlands Environmental Assessment Agency, the Netherlands Bureau for Economic Policy Analysis (CPB) and the Netherlands Institute for Social Research (SCP). The Work Programme has been formally adopted by the secretary-general of IenM.

Defining topics in 2017

Many research projects and other activities (knowledge at the table) are conducted within the core themes. Some projects and activities focus on a specific policy area and a specific policy directorate, while others are of wider significance for the ministry's policies. The core themes described in section 0.4 give an overall structure to KiM's work.

In addition, for 2017 a number of more specific and defining topic areas have been identified that give more focus to studies within and across the core themes. These topics are listed in the table below, with some projects by way of illustration.

Defining topics	Examples of projects in 2017	Page	Link to KiM core themes
1. Congestion	• Investigation and explanation of recent trends in traffic congestion	14	1
	• Effects of flexible working on congestion – 2nd phase	14	
2. Public transport and transport chains	• The first and last mile in passenger road transport	13	1, 2, 5
	• Bicycle plus public transport	18	
	• Increasing the market responsiveness of public transport	19	
	• Stimulating and facilitating bicycle use	19	
	• The social costs of unreliable rail services	31	
• Supervision of rail market organisation study	32		
3. Innovative transport systems	• Impact on society of the autonomous car	12	1, 2, 3, 5
	• Mobility aspects of unmanned aircraft systems	13	
	• Acceptance of technology in relation to awareness	19	
	• Mobility as a Service	20	
	• Carsharing in the Netherlands	20	
	• International comparison of sustainable mobility policy	24	
• The economic dimension of smart (innovative) mobility	31		
4. New times, new impact measurement	• Policy interventions and indicators for urban accessibility	15	1, 6
	• Overview of evaluation methods and monitoring agreements for all types of mobility measures	36	
	• Follow-up questions on interministerial policy review on flexibility in infrastructure planning	36	

0.6 Explanatory remarks on Chapters 1 to 6

Chapters 1 to 6 of this Work Programme contain descriptions of the projects and activities by core theme.

For each core theme we first describe the subject matter covered and then the topics under investigation. For each topic we describe the projects (research projects and knowledge at the table), including the ongoing projects from 2016 and the new projects starting in 2017. The following information is given for each project: title, project type (research or knowledge at the table), commissioning department, project number, expected capacity requirements (large, medium, small¹) and the year quarter in which it is expected to start. This is followed by a brief description of other, small knowledge-at-the-table projects that fall within a core theme topic.

The estimated capacity requirements for the projects stated in this Work Programme are the total capacity requirements, which for some projects means the capacity requirements spread over more than one year. As the programme is dynamic and rolls over from year to year, a considerable number of projects, especially those starting in the last quarter of 2017, will continue into 2018. This also makes it possible to respond to new questions and changing issues.

¹ In general, the expected capacity requirement for a small project is 0.1 FTE, for a medium project is 0.3 FTE and for a large project is 0.6 FTE. Projects that take just a few days to complete are not included in this Work Programme.

1

Mobility, Accessibility and Spatial Planning

1.1 Explanation of the core theme

In core theme 1 we describe and explain national and international trends in mobility and transport and their consequences for accessibility. This involves reviewing past developments and describing the trends in mobility and accessibility in the light of developments in society and implemented policy measures. We also look forward in medium and long term outlooks and assess the potential effects on mobility and accessibility of specific policy options, paying specific attention to the relation between developments in mobility and accessibility and spatial development trends.

In all these studies KiM takes a broad approach to the concept of mobility that encompasses both passenger and freight transport (both unimodal and multimodal), all transport modes (including cycling and walking), transport chains and hubs, and the interaction with spatial development and urban planning.

This core theme consists of two topics:

- The internal linkages within the transport and traffic system and how the system interacts with the surrounding environment
- Accessibility

The following sections describe for each topic which concrete activities (research projects and knowledge at the table) KiM will be working on in 2017 to provide answers to the research questions formulated in dialogue with the policy directorates.

1.2 The internal linkages within the transport and traffic system and how the system interacts with the surrounding environment

The knowledge activities in this topic involve describing the transport system and the factors that influence it, explaining actual developments in mobility and assessing future developments in mobility and the above-mentioned factors. Early recognition of possible developments allows the policy directorates to anticipate potential consequences and develop adaptive strategies. There is also a relation with core themes 4 (model development) and 6 (policy instruments and assessment frameworks).

Projects	
<p>DGB Strategy Unit Research project, BR1701, large, starting first quarter</p>	<p>Mobility Report 2017 The aim of the annual Mobility Report is to provide objective information to policymakers, researchers, politicians and organisations active in the field of transport and traffic. The publication reviews the current state of mobility in the Netherlands. In addition to a description of the trends in mobility, the Mobility Report offers explanations for the trends in passenger and freight transport and in accessibility. It therefore provides input to the development of policy and can be used in the public debate about mobility and accessibility. In 2017 further improvements will be made in identifying the reasons behind trends in traffic congestion and the trends in the use of public transport will be explored and explained in greater depth. Any topics that require particular attention in the Mobility Report 2017 will be identified in consultation with the policy directorates.</p>
<p>DGB Roads and Traffic Safety (also involved: DGB Strategy Unit) Research project, BR1406, large, ongoing</p>	<p>Impact on society of the autonomous car The autonomous or driverless car, which is in various stages of development towards full automation, is the hottest topic in the transport community today. Research into these systems, particularly the technological and legal aspects, has focused heavily on the implementation of the technology over the coming years, with little attention to the long-term prospects of full automation, and especially the social implications. In 2015, at the request of DGB, KiM made an initial contribution to our understanding of the social implications of the driverless car in the form of four scenarios. Early in 2017 KiM will present transition pathways towards possible futures with driverless cars and carry out further research during the course of the year. Possible subjects include:</p> <ul style="list-style-type: none"> - the consequences of the driverless car for the functioning of the mobility system in the medium to long term, including lifestyles and travel patterns; - the role of government in developing an appropriate infrastructure for the driverless car; - the consequences of the different driverless car scenarios for the environment and climate change.
<p>DGB Strategy Unit Research project, BR1602, medium, ongoing</p>	<p>The role of parking in the mobility system Further urbanisation in future is expected to lead to heavier road traffic in urban areas and to greater demand for parking places, with negative consequences for the quality of life in the central areas of our towns and cities. Parking policy offers possibilities for effectively influencing this demand that are currently not being exploited, for example due to rigid rules on the numbers of parking places that may be provided in new housing and office developments. Drawing on interviews and a meta-analysis of the literature, KiM is investigating the effectiveness of parking policy in regulating traffic volumes and the opportunities for using parking policy to manage the mobility consequences of new urban development. The study will also provide insight into any constraints on using parking policies. The project is revealing opportunities to develop parking policies and the possibilities for central government to influence parking policies, which is a municipal government responsibility.</p>
<p>DGB Public Transport and Rail Knowledge at the table, BR1420, medium, ongoing</p>	<p>Supporting research questions for the Future of Public Transport The Long Term Rail Agenda Part II (LTSA-II) sets out IenM's aim of establishing an integrated approach to public transport provision, in cooperation with rail network operator ProRail and Dutch Railways (NS) and in close dialogue with decentralised concession providers and concessionaires (train operators). This approach should deliver a concrete step-by-step plan, which will include a description of the ideal public transport product of the future in spatial terms: which hubs, what type of ticket gates (for touching in and out), and what frequency of services and proportion of direct connections will this involve? And what will be the optimal connectivity with regional and urban transport? The Directorate for Public Transport and Rail has asked KiM to provide knowledge at the table to support its input to the working groups established by the partners (rail platforms).</p>
<p>DGB Public Transport and Rail Research project, BR1404, medium, ongoing</p>	<p>Explanatory analysis of sluggish growth in rail freight transport In the aftermath of the credit crisis, the growth in rail freight transport in the Netherlands has not been able to keep pace with other transport modes and the seaports. To obtain insights into possible points of leverage for supporting policies, it will be necessary first to obtain a clear picture of the causes of this fall-off in competitiveness. An initial analysis based on cost comparisons was made by the Royal Dutch Transport Federation (KNV) in its 'rail offensive plan' (<i>Aanvalsplan Spoor</i>). Building on this, KiM is assessing the possible causes of the poor competitive position of rail freight, based on a literature study of developments abroad and an empirical analysis.</p>
<p>DGB Civil Aviation Department Research project, BR1605, medium, ongoing</p>	<p>Follow-up study on propensity to fly among the Dutch A basic premise of Dutch aviation policy is that the Dutch demand for air travel must be accommodated as far as possible by Dutch airports. Research by KiM in 2013 shows that many Dutch people living in the border regions travel from airports in the neighbouring countries and that increasing use of these airports points to a possible structural shift towards the use of foreign airports. In this project KiM is investigating any changes in the propensity to fly among the Dutch population, using the results of the previous study as a baseline measurement.</p>

Projects	
<p>DGB Civil Aviation Department Research project, BR1617, medium, ongoing</p>	<p>Mobility aspects of unmanned aircraft systems Unmanned aircraft have a range of different uses. These include commercial and private drones for use in journalism (e.g. for photography) and agriculture and by environmental and infrastructure inspectorates. The prime function of these drones is observation. Rarely mentioned so far are drones for use in the transport sector for services such as parcel delivery, as well as unmanned freight aircraft and drones for passenger transport.</p> <p>KiM is surveying existing and future possibilities for using unmanned aircraft for passenger and freight transport. The study covers a wide range of aspects, such as capacity, development risks, sustainability and safety, as well as potential roles for government. Moreover, KiM will look at how drones could benefit smart mobility. The research is based on a literature review of studies and ongoing initiatives. A roundtable discussion will also be held with international experts. An Airneth seminar on this topic was held at the end of 2016.</p>
<p>DGB Roads and Traffic Safety (also involved: DGRW Policy analysis) Research project, BR1609, medium, starting third quarter</p>	<p>The first and last mile in passenger road transport This project is about the parts of passenger trips referred to as ‘the first mile’ and ‘the last mile’, which often involve travel into and out of towns and cities. The project will focus on the relation between the car and public transport and between the different public transport modes. The use of bicycles for travel to and from public transport is being investigated in a separate project: ‘Bicycle plus public transport’ (MG1507). The role of parking in the mobility system is analysed in project BR1602.</p>
<p>DGB Maritime Affairs (also involved: DGMI International Affairs) Knowledge at the table, BR1518, small, ongoing</p>	<p>Effects of the North Pole route and the New Silk Road on the strategic position of seaports, maritime shipping and inland connections The North Pole route and China’s plans for a New Silk Road between Asia and Europe could affect the position of the Dutch seaports, maritime shipping and the inland connections. Ecorys is carrying out studies into these topics for the Ministry of Foreign Affairs and the Ministry of Infrastructure and the Environment. KiM is involved in the supervision of these studies. The Maritime Affairs and International Affairs directorates will determine whether the finished studies provide suitable answers to the research questions or whether further research is needed.</p>
<p>DGMI International Affairs Knowledge at the table, OG1208, small, ongoing</p>	<p>Contribution to IenM policy team Horizon 2020 Horizon 2020 is the EU Research and Innovation Programme. The transport related part of Horizon 2020 is the Strategic Transport Technology Plan. An IenM policy team is working to influence the content of the part of the research programme that is of relevance to the ministry. KiM is providing knowledge-at-the-table input to this policy team.</p>
<p>DGB Civil Aviation Department Knowledge at the table, BR1702, small, starting first quarter</p>	<p>Spatial policy around airports The minister of infrastructure and the environment asked the chair of Schiphol Environment Council (<i>Omgevingsraad Schiphol</i>) to advise on how the government’s medium term objectives for the growth of Schiphol Airport can be combined with the development of new housing in the region. This is a similar process to the Spatial Strategy for Mainport Amsterdam Schiphol Haarlemmermeer (SMASH), which has recently been completed and proposes a set of development decisions for the short term. Various studies on methods for reconciling housing development with aircraft movements have already been prepared as inputs to the SMASH process. KiM is supporting the Civil Aviation Department by preparing an overview of the existing relevant research material. An Airneth seminar may be organised on the subject of this research.</p>

Global description of other small knowledge-at-the-table activities

KiM regularly carries out small knowledge-at-the-table activities for this topic within the core theme. The emphasis in these activities is on answering questions about national and international trends in mobility and about social trends associated with mobility. KiM also participates in the supervision of contract studies on behalf of the ministry. An example is Panteia’s annual analysis of the short-term forecast of freight transport.

1.3 Accessibility

A primary objective of national transport and traffic policy is to improve accessibility. This is the subject of this topic, which focuses on the operationalisation and application of the concept of accessibility. The core theme also involves the further translation of the concept of accessibility into viable and effective indicators for use in the policymaking process and for gaining a deeper understanding of specific aspects of accessibility, such as comfort and journey time reliability.

The core theme also addresses the issue of how accessibility can be improved through research to identify points of leverage for new policy and the effects of policy options on accessibility objectives.

Projects	
<p>DGB Roads and Traffic Safety Research project, BR1703, large, starting first quarter</p>	<p>Investigation and explanation of recent trends in traffic congestion After a peak in 2008, levels of traffic congestion fell quite sharply over a long period, but congestion on the trunk road network started to increase again from the second quarter of 2014. In 2015 that increase amounted to as much as 22% and at the end of August 2016 the level of congestion had risen a further 8.5% above the level at the end of 2015. This rate of growth has never been seen before.</p> <p>Last year KiM analysed the increase in 2015 using the best available methods. Of the 22% increase, 4 percentage points could be attributed to external factors (population, jobs, car ownership and business services), an additional 4 percentage points could be explained by local increases in traffic on the main roads that could not be attributed to these external factors, a further 4 percentage point increase was due to the lower fuel prices, and 1 percentage point was caused by an increase in the number of accidents. However, just under half of this sharp increase in loss of journey time could not be explained and further research is needed to identify the reasons for the increase in congestion. KiM will pursue four lines in inquiry:</p> <ul style="list-style-type: none"> - further detailed analysis (with RWS WVL) of congestion as a phenomenon (e.g. shifts between periods, shifts from the underlying road network to the trunk road network, changes in spatial distribution, causes of congestion); - analysis of recent developments in driving behaviour (speed, dynamics, use of smartphones, etc.) and the possible consequences for road capacity (with other organisations, such as TU Delft, Rijkswaterstaat, etc.); - analysis of structural changes in commuting (with PBL); - analysis of recent changes in the housing market and specific segments of the labour market, including the consequences for spatial patterns of commuter traffic.
<p>DGB Public Transport and Rail Research project, BR1328, medium, ongoing</p>	<p>Effects of flexible working on congestion – 2nd phase As yet, little is known about the extent of flexible working in the Netherlands and its effects on mobility and congestion. In 2013 KiM made an initial analysis based on the available data of one aspect of flexible working: teleworking rates. The goal of this multi-year project is to expand this analysis, through specific data collection, so that it will be possible to determine the future effects of all aspects of flexible working on mobility and congestion. This will enable the effects of flexible working, as one of the relevant factors influencing the development of congestion, to be described and quantified with greater accuracy.</p>
<p>DGB Public Transport and Rail Research project, BR1405, medium, ongoing</p>	<p>Estimating the effects of policy measures on public transport reliability The possibilities for estimating what effects policy measures have on the reliability of travel times remain limited. Work has recently be done on upgrading the LMS-BT (National Model System, Reliability module) in order to provide better information on such effects for road traffic. The benefits of improved reliability for all other modes cannot yet be quantified in the cost-benefit analysis. This project is a first step towards making a rough assessment of the effects of a few measures geared specifically to improving the reliability of public transport services. The project is being carried out in cooperation with other organisations, including ProRail, CPB and TU Delft.</p>

Projects	
<p>DGB Strategy Unit (also involved: DGB Infrastructure Efficiency Programme) Research project, BR1619, medium, ongoing</p>	<p>Policy interventions and indicators for urban accessibility Although widely used, the term ‘urban accessibility’ is a rather vague concept. In this project KiM outlines the possibilities for using indicators to make the concept more tangible and measurable. A distinction will be made between indicators for monitoring progress with improving urban accessibility and indicators for measuring the effects of specific measures. The indicators used are drawn from those used in the Infrastructure Efficiency Programme (ex post effects), in MIRT projects and in municipal transport plans and other local plans (expected to be primarily for ex ante effects). In addition, an overview will be given of measures for improving urban accessibility, where possible accompanied by an indication of the effects of these measures derived from these indicators.</p>
<p>DGB Strategy Unit Knowledge at the table, BR1611, small, ongoing</p>	<p>Knowledge input to the National Market and Capacity Analysis Following KiM’s knowledge input to the development of policy on the investment strategy, KiM was asked to reserve capacity in 2017 for knowledge input to the National Market and Capacity Analysis (NMCA). This does not involve additional research, but consists of providing knowledge at the table for various substudies, such as the sensitivity analyses.</p>
<p>DGB Roads and Traffic Safety Knowledge at the table, BB1112, small, ongoing</p>	<p>Review of the evaluation method for the Amsterdam Traffic Management Trial The goal of the Amsterdam Traffic Management Trial (<i>Praktijkproef Amsterdam</i>, PPA) is to investigate the degree to which network-wide coordinated traffic management measures can improve utilisation of the road network in the Amsterdam region. This is a joint project between central government and the regional and local authorities. The trial will run for about three years. KiM’s role is to review the ex ante and ex post evaluations of this trial for DGB Roads and Traffic Safety. Each review contains an independent scientific judgement on the evaluation methods to be used and on the results of the evaluations.</p>
<p>DGB Civil Aviation Department Knowledge at the table, BR1607, small, starting first quarter</p>	<p>Schiphol catchment area Airports can exploit advantages of scale if they have a big enough catchment area. It is said that in comparison with the other four major hub airports in Europe (London, Frankfurt, Paris and Istanbul) Schiphol has a relatively small catchment area. But is that really true? KiM is analysing existing information to identify which factors determine the catchment area of an airport and what this implies for the catchment area of Schiphol, also in relation to the NMCA.</p>

Global description of other small knowledge-at-the-table activities

KiM regularly carries out small knowledge-at-the-table activities for this topic within the core theme. The emphasis in these activities is on answering questions about the accessibility effects of policy interventions and supervising external research projects on the effects of policy options. Examples include preparation of the annual forecast for the National Cooperative Air Quality Programme (NSL) and the cooperative programme on implementing new noise policy (SWUNG), providing knowledge input to the preparation of the National Environmental Strategy, making an active contribution to the Improving Accessibility (Meer Bereiken) knowledge group, and providing knowledge for the ongoing MIRT studies (including freight corridors).

1.4 Project overview table

Department	Title	Number	Project Type	Start	Size
DGB Strategy Unit	Mobility Report 2017	BR1701	Research project	1 st quarter	Large
DGB Roads and Traffic Safety	Impact on society of the autonomous car	BR1406	Research project	Ongoing	Large
DGB Strategy Unit	The role of parking in the mobility system	BR1602	Research project	Ongoing	Medium
DGB Public Transport and Rail	Supporting research questions for the Future of Public Transport	BR1420	Knowledge at the table	Ongoing	Medium
DGB Public Transport and Rail	Explanatory analysis of sluggish growth in rail freight transport	BR1404	Research project	Ongoing	Medium
DGB Civil Aviation Department	Follow-up study on propensity to fly among the Dutch	BR1605	Research project	Ongoing	Medium
DGB Civil Aviation Department	Mobility aspects of unmanned aircraft systems	BR1617	Research project	Ongoing	Medium
DGB Roads and Traffic Safety	The first and last mile in passenger road transport	BR1609	Research project	3 rd quarter	Medium
DGB Civil Aviation Department / DGMI International Affairs	Effects of the North Pole route and the New Silk Road on the strategic position of seaports, maritime shipping and inland connections	BR1518	Knowledge at the table	Ongoing	Small
DGMI International Affairs	Contribution to policy team Horizon 2020	OG1208	Knowledge at the table	Ongoing	Small
DGB Civil Aviation Department	Spatial policy around airports	BR1702	Knowledge at the table	1 st quarter	Small
DGB Roads and Traffic Safety	Investigation and explanation of recent trends in traffic congestion	BR1703	Research project	1 st quarter	Large
DGB Infrastructure Efficiency Programme	Effects of flexible working on congestion – 2nd phase	BR1328	Research project	Ongoing	Medium
DGB Public Transport and Rail	Estimating the effects of policy measures on public transport reliability	BR1405	Research project	Ongoing	Medium
DGB Strategy Unit	Policy interventions and indicators for urban accessibility	BR1619	Research project	Ongoing	Medium
DGB Strategy Unit	Knowledge input to the National Market and Capacity Analysis	BR1611	Knowledge at the table	Ongoing	Small
DGB Roads and Traffic Safety	Review of the evaluation method for the Amsterdam Traffic Management Trial	BB1112	Knowledge at the table	Ongoing	Small
DGB Civil Aviation Department	Schiphol catchment area	BR1607	Knowledge at the table	1 st quarter	Small

2

Mobility of Groups

2.1 Explanation of the core theme

People travel because they have to or because they want to do or see things in different places; goods are transported so that they can be used elsewhere. Personal mobility behaviour, goods transport and the choices behind travel behaviour differ between groups in society. Describing and explaining these differences in mobility behaviour reveals important insights for policymaking, which must increasingly differentiate between different groups in society in order to be effective.

The Mobility of Groups core theme is about the mobility of specific groups, the autonomous and induced trends in mobility behaviour of these groups, and the underlying factors that explain these trends. The underlying factors provide not only explanations, but also offer possible pointers for policy development.

Projects	
DGB Strategy Unit Research project, MG1501, medium, ongoing	Life stages, living conditions and lifestyles On several occasions in the past KiM has examined the mobility effects of sociodemographic and sociocultural changes, including studies of the ageing population, population decline, immigrants and residents with a foreign background, and (more recently) young adults. However, many questions remain unanswered, such as the implications of double ageing for mobility and the extent to which children today are less mobile than in the past. Based on data derived from the Netherlands Mobility Panel (MPN), it is possible not only to provide insights into the shifts in the size and composition of cohorts (life stages) but also to analyse the effects of changes in living conditions (activity patterns) and lifestyles (preferences and norms and values). KiM's research specifically examines the effects of moving house, having a child and starting a new job. These effects are analysed using MPN data and the results of a literature study and interviews.
DGB Roads and Traffic Safety Research project, MG1506, medium, ongoing	Behaviour and urban deliveries This project takes the behavioural change part of the 2015 KiM Urban Distribution project (BR1508) a step further. The behavioural interventions identified in that project need to be worked out in more detail. This is being done in three stages. The first is a more in-depth analysis of the identified best practices and a discussion of four to six cases in working sessions with behavioural experts. The second stage is a player and behaviour analysis of two cases in the Netherlands. The third stage involves the design of possible interventions to change people's behaviour and a discussion of other possible roles of government. In this last step new and existing interventions to change people's behaviour (such as those identified in the foreign best practices in Step 1) will be assessed for their suitability for use in the Netherlands (Step 2). A working session will be held to benefit from the insights of experts in the field.

Projects	
<p>DGB Strategy Unit Research project, MG1601, medium, ongoing</p>	<p>Experience and perceptions 10 years on One of the first KiM publications was 'Experience and perception of mobility' (<i>Beleving en beeldvorming van de mobiliteit</i>, KiM 2007). That study analysed a 2005 questionnaire by the Netherlands Institute for Social Research (SCP) and the Transport Research Centre (AVV) to obtain a picture of how the Dutch experience travel by car, bicycle and public transport, the preferences they have and the problems they encounter. Now, ten years on, there have been some visible shifts in the use of some modes of transport: car use is changing and differences in bicycle use are widening. The publication should therefore be updated by repeating the study. How do travellers evaluate use of the private car and public transport, and on what aspects do these modes score better – or worse – than ten years ago? Are these changes the same in all population groups (young and old, rural and urban)? Do young adults in 2015 view mobility differently than their peers in 2005? What influence has the increase in safety measures had on the experience and valuation of transport modes? And what do all these changes mean for travel behaviour?</p>
<p>DGB Strategy Unit Research project, MG1602, medium, ongoing</p>	<p>City, 'hinterland' and mobility: spatial and social divergence of patterns and trends Several recent studies have shown that the differences in mobility between urban areas and the surrounding rural areas are widening. In urban areas bicycle use is on the increase and car use is declining. In rural areas the trend appears to be in the opposite direction. Analyses of data from the Dutch Travel Survey (OVIN) and of sociodemographic and spatial data suggest that the use of transport modes in urban areas is determined to a great extent by the sociodemographic composition of the population (see Mobility Report 2015). There are indications that these sociodemographic differences (young versus old, high versus low educational level, higher versus lower income) are increasing as a result of population movements, both within urban areas (e.g. between central and peripheral areas) and between urban and rural areas (growth and shrinkage). The question is how these shifts have developed over time and what the consequences have been for mobility, both in the urban areas and in the rural 'hinterland'. This can be analysed using an explanatory model developed by KiM for the Mobility Report 2015. The information will help to explain the diverging mobility patterns among urban residents and between urban residents and residents of more rural areas. PBL Netherlands Environmental Assessment Agency has been approached to cooperate in the implementation of this project.</p>
<p>DGRW Regional and Project Development Research project, MG1508, medium, ongoing</p>	<p>Population decline and mobility with a focus on the Northern Netherlands and Zeeland In 2010 KiM carried out a study into the consequences of demographic changes for mobility by car and public transport ('Population decline and mobility'). Now, almost five years later, the 'general goal-oriented grant' for local and regional public transport services (<i>Brede Doeluitkering Verkeer en Vervoer</i>) has been reduced further and, despite the economic crisis, car use is rising, particularly among the working population in the Northern Netherlands. The reasons for this are the consolidation and amalgamation of services. The 2010 study covered the whole of the country and focused on the main areas of population decline. This update of the 2010 study deepens the analysis with specific attention to the areas in the Northern Netherlands and province of Zeeland where the population is already declining and where it is expected to decline.</p>
<p>DGB Public Transport and Rail Research project, MG1507, medium, ongoing</p>	<p>Bicycle plus public transport A large proportion of people who use public transport in the Netherlands also cycle to and from the departure point and/or destination. This combination of bicycle plus public transport plays a major part in optimising the door-to-door trip. The aim of this study is to obtain a more detailed picture and understanding of the combined use of the bicycle and public transport and develop further expertise in this area. The results will allow us to identify the measures that can be taken to optimise the bicycle plus public transport combination and so optimise the door-to-door trip. The research questions being investigated include the following:</p> <ul style="list-style-type: none"> • What proportion of travel to and from the train is by bicycle for different types of trip (by motive, type of bicycle use, type of origin and destination, etc.)? • What features of the system and the traveller explain the variation in choices travellers make for the combined bicycle/public transport trip? • On what factors and motives do travellers base their decisions on combined bicycle/public transport trips? <p>The study draws mostly on existing information (literature, available data). In addition, the behaviour of people who make use of the bicycle in combination with public transport, and the variables that influence their behaviour, are being examined in more depth in case studies in various cities. These case studies make use of the NS panel, the Dutch Railways customer panel.</p>

Projects	
<p>DGB Public Transport and Rail Research project, MO1201, medium, ongoing</p>	<p>Increasing the market responsiveness of public transport Various regions are looking for different ways of providing transport services. As the traditional regular scheduled services with large buses are increasingly reserved only for the busier routes, a different approach is required for the finer network of routes with much lower passenger numbers (sometimes referred to as the 'lower end of the public transport market'). Trends such as the growth in the use of mobility scooters, electric bikes, app-driven shared taxis, community transport and, in the longer term, even driverless vehicles may provide good alternatives. The question is, who still makes use of the regular services at the quiet times of the day and in quiet places, and how will this change over the years? What do these users of public transport think of alternative types of services? Will such services offer them better mobility options, or do they already sometimes make use of them? Are the alternatives at a sufficiently advanced stage of development to be able to provide reliable services? At what level of bus occupancy does the introduction of alternatives become socially more cost-effective? And what proportion of bus hours does this represent?</p>
<p>DGB Strategy Unit (also involved: Fietsknooppunt) Knowledge at the table, MG1603, medium, ongoing</p>	<p>Stimulating and facilitating bicycle use The bicycle is an increasingly important mode of transport in the national mobility system. A broad coalition of government authorities, market players, civil society organisations, knowledge institutes and partnerships involved with policies on cycling in the Netherlands are working to stimulate and facilitate further growth in bicycle use. They are giving greater priority to policies on cycling as well as making use of opportunities and removing obstacles to the increasing use of bicycles. KiM is involved in various activities with the aim of providing knowledge inputs to enhance cycling policies. Current and planned activities so far are:</p> <ul style="list-style-type: none"> • participation in the monthly ministry-wide 'Bicycle and IenM' meetings (in anticipation of the IenM Fietsknooppunt ('Bicycle Hub') department currently being established); • providing support, including knowledge delivery, to the IenM Fietsknooppunt; • organisation and implementation of one or more workshops during the VeloCity conference in June 2017 (with IenM/BIT); • acting as a 'research coach' for the SURF project 'Smart Cycling Futures', with the aim of making the knowledge gained available to the policymaking process and keeping the scientific community up to date with developments in national policies on cycling; • active participation in the Tour de Force, Fietscommunity and Dutch Cycling Embassy initiatives.
<p>DGB Strategy Unit Research project, MG1503, medium, starting second quarter</p>	<p>Senior citizens and mobility Senior citizens have increasing access to physical, social, financial and technological means that enable them to continue to travel. They remain healthy for longer and a range of affordable aids allow them to move about independently in outdoor public spaces. What do these developments mean for mobility? To what extent is it socially responsible to use public money to facilitate this increased mobility among senior citizens? These issues are not just about the demographic cohort effect, which was the topic of the 'Grey Travelling' report (<i>Grijs op Reis</i>), but about this effect in combination with changes in the physical environment. A link may be made with the 'Population decline and mobility with a focus on the Northern Netherlands and Zeeland' project (MG1508) and the 'City, "hinterland" and mobility: spatial and social divergence of patterns and trends' project (MG1602).</p>
<p>DGB Strategy Unit Research project, MG1704, medium, starting second quarter</p>	<p>Acceptance of technology in relation to awareness Researchers and policymakers want to know which factors influence people's acceptance of technologies. One such technology is Intelligent Transport Systems (ITS, including driverless cars), which aims to improve mobility. In this study we will investigate the factors which influence the acceptance of technology from a historical perspective, with a specific focus on ITS. Which factors have led to acceptance in the past, for example by users of navigation systems, Adaptive Cruise Control, etc.? Will identification of these factors lead to identification of target groups that are particularly open to specific technological developments? Are these factors also important for future technological developments, such as the driverless car?</p>

Projects

DGB Strategy Unit (also involved: DGB Infrastructure Efficiency Programme) Research project, MG1701, medium, starting third quarter

The influence of weather on mobility

How much does the weather affect how people choose to travel? Are we less inclined to take the bike when it rains? Are we more likely to stay at home when the temperature drops below freezing, and do we prefer to take the car when the days get shorter in winter? KiM looked at the influence of the weather on mobility for the trend analyses in the Mobility Reports for 2015 and 2016, examining in particular the year-on-year fluctuations in the impacts of hours of sunshine, temperature and precipitation on people's propensity to go out and their choice of transport mode. Although some initial results were obtained, we still know little about how the weather influences mobility in general and on the use of bicycles in particular.

This study will explore several main lines of research. First, what are the impacts of the weather on travel demand and the use of bicycles? Are fewer trips made by bicycle during bad weather, are bicycle trips shorter in bad weather, and are such effects dependent on the journey purpose? Second, can the weather affect the choices people make for certain modes of transport? It will be interesting to see which types of weather lead to the choice of which modes of transport. Lastly, is the impact of the weather on congestion an important research topic, given the sometimes considerable loss of welfare involved? KiM will look for answers to these questions by reviewing and combining insights from the literature and by analysing existing mobility data (from the Dutch Travel Survey (OVIN) and the Netherlands Mobility Panel) enriched with weather data from the KNMI.

DGB Public Transport and Rail Research project, MG1705, medium, starting third quarter

Mobility as a Service

Mobility as a Service (MaaS) represents a transition in mobility in which the consumer buys mobility rather than investing in purchasing a vehicle – mobility as a service. This shift is being driven by innovative new mobility concepts such as carsharing and demand-driven public transport services. The key feature is the provision of door-to-door mobility. This can also be provided by a combination of traditional public transport, shared cars and bicycles, blurring the boundaries between transport modes and creating a more integrated transport system. Such systems could also be combined with parcel delivery services. The high expectations of MaaS are also prompted by the anticipated introduction of driverless vehicles, which could further boost demand-driven car and public transport services. Despite all the interest, there is no single clear definition of the MaaS concept. Neither is much known about the acceptance and implications of MaaS concepts, both in the cities and in the more peripheral regions.

The key questions this research seeks to answer are: what do we know about such concepts, what experiences have been gained elsewhere, what are the potential mobility impacts, and what will a largely 'carefree' transport system mean for the traveller's experience and ability to make good use of travel time? This aspect may also be of relevance to the more general field of research into the 'value of comfort'.

DGB Roads and Traffic Safety Research project, MG1707, medium, starting third quarter

Carsharing in the Netherlands

A research study by KiM (published in 2015) revealed that about one per cent of the Dutch population make use of one or more types of carsharing services. Carsharing has an impact on car ownership and use, the environment and the use of space in urban areas. Since then the number of available cars has increased (by 55% between 2015 and 2016), new operators have appeared on the market providing new types of carsharing schemes, and new initiatives have been developed. The government's Green Deal on carsharing is giving an additional impetus to the use of carsharing services in the Netherlands. The questions that arise are: have the increased offer and the new initiatives have led to greater use of carsharing schemes; has the use of such services become more widespread among different groups in society; and have the impacts on car ownership and use, the environment and the use of space increased? The TNS NIPO carsharing survey may give new information on trends in the use of carsharing services. In this study we will report on the developments since the 2015 study and analyse the use of the various services and schemes by different groups in society. We will also attempt to explain the identified trends. Cooperation with the PBL Netherlands Environmental Assessment Agency may be sought for this project.

Projects

DGB Strategy Unit (also involved: DGB Infrastructure Efficiency Programme) Research project, MG1702, medium, starting fourth quarter

Importance of health in mode shift to active modes

Bicycle and foot account for half of all trips, a tenth of all kilometres travelled and a third of the time the Dutch population spends travelling. However, a large proportion of short trips (less than 7.5 kilometres) are still made by car. One of the options for improving accessibility is to aim for a mode shift from the car to the bicycle. Stimulating such a mode shift would not only have an impact on accessibility, but bring health benefits as well. The World Health Organization says that from a public health perspective investing in such a mode shift is one of the better ways of getting people to be more physically active, because active transport is an easy way of incorporating physical activity into one's daily routine.

There are therefore a range of arguments for stimulating a mode shift. The question is, what are the main motives for people to take the bicycle rather than the car: better accessibility, health reasons, cost or some other reason? An important second question is whether or not motivation or attitude alone is a sufficient reason to stimulate a mode shift. For example, what influence do social or peer pressures have? And how important is an individual's personal confidence, the belief they have in their ability to actually make the mode shift (e.g. from car to bicycle)?

Data from the Netherlands Mobility Panel gives us an insight into the attitudes of respondents about travelling by car and by bicycle. At the same time, we have information on the trips made and the modes of transport used. An additional questionnaire will be used to obtain information about the general health of respondents, the influences they experience in their social environments and the social pressures they are under as well as their confidence in their ability to make a mode shift. Information about these attitudes, motivations, social pressures, personal confidence, health and the transport modes used will give more insight into the aspects influencing respondents' motives for choosing active transport. An understanding of these motives is essential for developing an effective policy to bring about this mode shift.

DGB Strategy Unit Research project, MG1703, medium, starting fourth quarter

Mobility of first, second and third generation people with an immigrant background

A large proportion of the population living in the big Dutch cities have a non-Western immigrant background and are of Turkish, Moroccan, Surinamese or Antillean origin. More than ten years ago the Netherlands Institute for Social Research (SCP) and KiM carried out an extensive research study into the propensity to go out and the mobility behaviour of these groups. An important outcome of the research was that non-Western people with an immigrant background go out less than people with a Dutch background and they travel fewer kilometres during roughly the same period of time. They also cycle much less often and make relatively more frequent use of public transport. The differences were not only attributable to socioeconomic aspects, but also to culture-specific factors, such as the low status afforded to cycling among people with an immigrant background and simply not being used to cycling.

Have these behavioural patterns regarding going out and mobility behaviour changed since 2005? Have the differences between these groups and urban residents with an ethnic Dutch background narrowed at all in the intervening years, or do people with an immigrant background still get around differently? Another question is, are there any visible differences in mobility behaviour between first, second and third generation non-Western people with an immigrant background? And how do Eastern Europeans and other groups resident in the Netherlands travel?

DGB Strategy Unit Research project, MG1706, medium, starting fourth quarter

Influence of future labour participation on mobility

This study is about the effects of future changes in the labour market on mobility, such as trends in the numbers of self-employed, flexible working, the increase in the numbers of mobile professionals, the displacement of jobs by robots and working longer hours. These trends will cause shifts between commuter and leisure traffic, shifts in the times when people travel, shifts in choice of routes and shifts in modal choice. Will flexibilisation of the labour market lead to the loss of 'fixed' patterns in commuter traffic? Another interesting question is whether there are spatial differences (e.g. city versus country) and social differences (e.g. men versus women) in the relation between the labour market and mobility.

Global description of other small knowledge-at-the-table activities

KiM regularly carries out small knowledge-at-the-table activities for this core theme. In these activities the emphasis is often on identifying and describing developments in the mobility behaviour of specific groups in relation to the characteristics of these groups. An example of this is the supervision of the ‘Driving under the Influence’ project by Rijkswaterstaat Water, Traffic and Environment (RWS WVL).

2.2 Project overview table

Department	Title	Number	Project Type	Start	Size
DGB Strategy Unit	Life stages, living conditions and lifestyles	MG1501	Research project	Ongoing	Medium
DGB Roads and Traffic Safety	Behaviour and urban deliveries	MG1506	Research project	Ongoing	Medium
DGB Strategy Unit	Experience and perceptions 10 years on	MG1601	Research project	Ongoing	Medium
DGB Strategy Unit	City, ‘hinterland’ and mobility: spatial and social divergence of patterns and trends	MG1602	Research project	Ongoing	Medium
DGRW Regional and Project Development	Population decline and mobility with a focus on the Northern Netherlands and Zeeland	MG1508	Research project	Ongoing	Medium
DGB Public Transport and Rail	Bicycle plus public transport	MG1507	Research project	Ongoing	Medium
DGB Public Transport and Rail	Increasing the market responsiveness of public transport	MO1201	Research project	Ongoing	Medium
DGB Infrastructure Efficiency Programme / Fietsknooppunt	Stimulating and facilitating bicycle use	MG1603	Knowledge at the table	Ongoing	Medium
DGB Strategy Unit	Senior citizens and mobility	MG1503	Research project	2 nd quarter	Medium
DGB Strategy Unit	Acceptance of technology in relation to awareness	MG1704	Research project	2 nd quarter	Medium
DGB Strategy Unit	The influence of weather on mobility	MG1701	Research project	3 rd quarter	Medium
DGB Public Transport and Rail	Mobility as a Service	MG1705	Research project	3 rd quarter	Medium
DGB Roads and Traffic Safety	Carsharing in the Netherlands	MG1707	Research project	3 rd quarter	Medium
DGB Strategy Unit	Importance of health in mode shift to active modes	MG1702	Research project	4 th quarter	Medium
DGB Strategy Unit	Mobility of first, second and third generation people with an immigrant background	MG1703	Research project	4 th quarter	Medium
DGB Strategy Unit	Influence of future labour participation on mobility	MG1706	Research project	4 th quarter	Medium

3

Sustainable Mobility, Safety and Transition

3.1 Explanation of the core theme

This core theme is about sustainable mobility and mobility-related safety aspects. It includes the consequences for the liveability and safety of the *current* mobility system (and the leverage points for policy intervention) as well as the development of a more sustainable and safer mobility system *in the future*.

The core theme examines important issues related to mobility, such as reducing dependence on oil, the introduction and use of sustainable fuels, reducing greenhouse gases and other polluting emissions, and promoting traffic safety. These issues are the subject of intense policymaking activity, both in the European Union and the Netherlands. A key driver of this research in the Netherlands is the SER Energy Agreement for Sustainable Growth. Attention is also given to the transition to a more sustainable and safer mobility system in the future: what are the problems and obstacles, what is the role of government and where can points of policy leverage be found to facilitate this transition?

In this core theme the concept of ‘sustainability’ is interpreted in a broad sense to cover all aspects of the natural and built environment and climate. This broad approach to sustainability also includes safety. This is explicitly mentioned in the title of the core theme – perhaps unnecessarily – because the term sustainability is often associated only with environmental issues.

3.2 Sustainability and safety of the mobility system

The recent dialogue between KiM and the IenM policy directorates has led to the formulation of a number of research questions on these topics. This section describes which concrete projects (research projects and knowledge at the table) KiM will be working on in 2017 to provide answers to these research questions.

Projects	
<p>DGB Strategy Unit Research project, DT1701, medium, starting third quarter</p>	<p>New times, new policy instruments – climate change targets Following a period of leaving as much as possible to the market and minimising government intervention, since the crisis there has been greater demand for central government intervention in some areas. At the same time, the way in which central government works with other government authorities and partners is also changing, the challenges facing society are considerable and numerous transport innovations are coming forward. Core theme 5 contains a project (MM1704) that will deliver a discussion document on whether this will require government to adopt a different role and/or different policy instruments.</p> <p>That discussion document will be elaborated upon in this project in the form of a case study on achieving climate targets. For example, what measures can government adopt to influence the electrification of transport? As there is already a considerable literature on this topic, the first step in the project will be to review this literature.</p>
<p>DGMI Climate, Air and Noise Knowledge at the table, DT1601, small, ongoing</p>	<p>International comparison of sustainable mobility policy (particulates, NO_x) KiM is compiling an overview of the policies being pursued in a number of surrounding countries for reducing traffic emissions of particulate matter and NO_x: what objectives do they have and what policies – such as fiscal policy, legislation, investment and innovation subsidies – are they pursuing? Developments are moving rapidly and how other countries shape their mobility policy can be a source of ideas for Dutch policy in this area. It may be necessary to call upon the expertise available at the National Institute for Public Health and the Environment (RIVM).</p>
<p>DGB Public Transport and Rail Research project, DT1602, small, ongoing</p>	<p>Knowledge infrastructure for rail safety The evaluation of the third framework policy document on rail safety identified a need to improve the knowledge infrastructure for public transport, and in particularly rail safety. KiM is drawing up an inventory of this knowledge infrastructure in the Netherlands and internationally. This can then be used to identify suitable models for the Dutch rail sector.</p>

Global description of other small knowledge-at-the-table activities

KiM regularly carries out small knowledge-at-the-table activities for this topic within the core theme. Examples include making suggestions on how to reduce noise disturbance around Eindhoven Airport, helping to set up an assessment framework for rail safety, and preparing a compendium of university courses on sustainable mobility.

3.3 Project overview table

Department	Title	Number	Project Type	Start	Size
DGB Strategy Unit	New times, new policy instruments – climate change targets	DT1701	Research project	3 rd quarter	Medium
DGMI Climate, Air and Noise	International comparison of sustainable mobility policy (particulates, NO _x)	DT1601	Knowledge at the table	Ongoing	Small
DGB Public Transport and Rail	Knowledge infrastructure for rail safety	DT1602	Research project	Ongoing	Small

4

Models and Data

4.1 Explanation of the core theme

The quality of answers to just about every research question about transport and traffic depends on the quality of the underlying data. For data on historical and current trends in transport and traffic, this depends on the quality of standard data collection procedures; for data on future developments this depends on the quality of the models used to generate those data.

KiM has extensive knowledge of the available pools of data, data collection methods, and transport and traffic models, and can use this knowledge to support the policy directorates by articulating the need for models and data collection relevant to mobility and transport policy. At the same time, KiM is able to assist the policy directorates, and on occasions the Human Environment and Transport Inspectorate (ILT), with the development and use of policy indicators for monitoring strategic policy objectives.

KiM does not itself develop or manage any large transport models. In recent years KiM has been more active in collecting its own data on mobility and accessibility. This is a standard part of the work of the Netherlands Mobility Panel (MPN) and is an integral part of certain specific projects. In addition, KiM is actively involved in the ongoing data collection activities of Statistics Netherlands (CBS) for the Dutch Travel Survey (OViN) and contributes to several projects in OViN's research into transport innovations. Nevertheless, to provide the policy directorates with new information and insights, KiM also relies on standard data collection and on model development and management by other organisations, such as Statistics Netherlands (mobility and freight transport), Rijkswaterstaat Water, Traffic and Environment (RWS WVL) (traffic data, models), the National Data Warehouse for Traffic Information (NDW) (traffic data), TNO (models), universities (ad hoc data collection and models) and private organisations (ad hoc data collection and models). Making such data available for processing and analysis is a key activity within the core theme.

Two topics are central to this core theme:

- Basic information about mobility and accessibility
- Transport and traffic models

The following sections describe for each topic which concrete activities KiM will be working on in 2017 to provide answers to the research questions identified by the policy directorates.

4.2 Basic information about mobility and accessibility

This topic within the core theme concerns standard data collection on mobility and accessibility, with the sharpest possible focus on the information needed for monitoring and evaluating mobility and transport policy. The information requirements for policymaking (and therefore for KiM) are determined directly by existing, and possibly future, indicators for monitoring strategic policy objectives. Interaction is clearly an issue here, because information demands are often limited by the availability of suitable data and the possibilities for and constraints on data collection. KiM's expertise in data collection and modelling

methods is used to translate policy information needs into the continuous and improved collection and processing of data. This collection of data is done by KiM and other organisations, including Statistics Netherlands and Rijkswaterstaat Central Information Services (RWS CIV) and Rijkswaterstaat Water, Traffic and Environment (RWS WVL). Conversely, KiM can play a role in translating the available data into policy-relevant information.

Projects	
<p>DGB Strategy Unit Research project, DM1102, large, ongoing</p>	<p>Netherlands Mobility Panel Transport and traffic policies are increasingly targeting the behaviour of specific groups in society. Accordingly, there is a growing demand for insights into the trends in the mobility of specific groups over time and into the effects of changing circumstances on the mobility behaviour of individuals and groups (changes in family composition, moving house, etc.). In 2012 KiM started a longitudinal mobility study to obtain this type of information and understanding. The project is being implemented in cooperation with Goudappel Coffeng and the University of Twente, and with the involvement of RWS WVL and PBL Netherlands Environmental Assessment Agency. In autumn 2016 the fourth wave survey was carried out and data from the second wave was made available to third parties. The fifth wave survey will be conducted in the autumn of 2017. A decision has been taken to continue the MPN for the period from 2018 to 2021 and the fieldwork for this period will be contracted out under EU rules in 2017. In preparation for this procurement, KiM is currently studying the importance of offering rewards for taking part in the survey, the effects of respondent attrition from year to year, and the use of smartphones and tablets for data collection. Data from the MPN are used in several KiM projects: 'Life stages, living conditions and lifestyles' (MG1501), 'Experience and perceptions 10 years on' (MG1601), 'The influence of weather on mobility' (MG1702), 'Importance of health in mode shift to active modes' (MG1702) and the Mobility Report (MG1701).</p>
<p>DGB Strategy Unit Research project / Knowledge at the table, DM1401, large, ongoing</p>	<p>Contribution by KiM to the OViN innovation research programme For the period 2015–2017 IenM and Statistics Netherlands have agreements in place for continuing the Dutch Travel Survey (OViN). The parties have also agreed that during this period they will look into possible innovative methods that will enable the information needed for the survey to be collected more efficiently. This study examines improvements to the existing data collection process (approaching respondents, questionnaires, data processing) and more innovative concepts like big data (including register data and data from the public transport smart card) and new collection methods (automatic tracking of people via smartphones, surveys via internet and apps, etc.). KiM is making an active contribution to this innovation research. In 2017 the emphasis will be on research into the practical value of register data for determining commuting and home to school distances, improving trend assessments and making an active contribution to various implementation tests by Statistics Netherlands.</p>
<p>DGB Strategy Unit Research project, DM1501, medium, ongoing</p>	<p>Validation of various congestion indices The media regularly publish lists of traffic queues and information about trends in congestion and accessibility in the major cities. The best known are the INRIX National Traffic Scorecard Annual Report and the TomTom Traffic Index. Before these can be compared with government figures on congestion levels and vehicle hours lost prepared by Rijkswaterstaat, the traffic information service VID, the Royal Dutch Touring Club (ANWB) and TNO, a clear picture is needed of how these other indices are compiled. In addition, studies will be made of the suitability of relevant data sources as indicators of accessibility for policy and for use in traffic analyses.</p>
<p>DGB Civil Aviation Department Research project, E928, small, ongoing</p>	<p>Factsheet on aviation data The aviation data factsheet provides an annual overview of trends in traffic at Amsterdam Airport Schiphol and other (competing) airports. The airports covered are the Dutch regional airports, the major European hubs (including Istanbul) and a number of Belgian and German airports that serve part of the Dutch market. The trends in global aviation are also presented for reference purposes.</p>
<p>DGB Public Transport and Rail Knowledge at the table, DM1404, small, ongoing</p>	<p>Considering the data needs of the national government Building on previous activities to make data on public transport available, KiM provides input to working sessions organised by the CROW Knowledge Platform on Mobility (CROW-KpVV) on behalf of the National Public Transport Council (NOVB). KiM is considering the data needs for managing national government concessions, monitoring for system accountability and the policy accountability process.</p>

Projects	
DGB Strategy Unit Knowledge at the table, DM1113, small, ongoing	Contribution to the Infrastructure and Spatial Planning Monitor In 2012 PBL Netherlands Environmental Assessment Agency started monitoring spatial planning and mobility policy in cooperation with KiM. This Infrastructure and Spatial Planning Monitor (MIR) covers the 13 national interests set out in the National Policy Strategy for Infrastructure and Spatial Planning (SVIR). The information is used to report to the House of Representatives once or twice a year on the progress being made with the policy. For DGB, KiM supplies knowledge-at-the-table information on mobility and accessibility to PBL for use in the MIR and ensures the information it contains is aligned with the Mobility Report (see Mobility Report 2016; BR1601). The MIR 2018 will include the accessibility indicator for road transport, which will be calculated using the most recent available data.
DGB Strategy Unit Knowledge at the table, DM1508, small, ongoing	Updating statistics on the use of delivery vans There is a growing demand for statistical information on delivery vans (for example from KiM, PBL, Rijkswaterstaat, industry carriers organisation EVO, the Dutch Association for Transport and Logistics (TLN) and the National and International Road Transport Organisation (NIWO)). What are the consequences of the internet economy? Where do the more than 800,000 delivery vans go and in what numbers, and what do they carry? How many people travel in the vans? These are just a few of the important questions underpinning the information needs. In previous years Statistics Netherlands did not have the capacity to describe this major part of national freight transport with any certainty (in tonnage larger than rail freight and in kilometres travelled twice as much as the large haulage vehicles). In response to the steep rise in demand for statistics on transport by delivery vans, from 2016 Statistics Netherlands has been holding the delivery van questionnaire survey with a larger sample size and higher sampling frequency (once every two years). KiM facilitates the survey work. The first datasets will be available in 2017. A number of research questions will be formulated in consultation with DGB and the stakeholders mentioned above, including questions on the efficient use of delivery vans.
DGB Public Transport and Rail Knowledge at the table, MM1512, small, ongoing	Dashboard sessions on door-to-door accessibility CROW leads a working group which is developing proposals for a 'dashboard' for monitoring the quality of door-to-door accessibility. KiM takes part in these sessions.

Global description of other small knowledge-at-the-table activities

KiM gives expert advice on the content and nature of existing statistical databases and data collections. Examples include participation in the supervision of contract studies on analysing freight flows in the Benelux and exchanging knowledge with the Analysis group at the Human Environment and Transport Inspectorate (ILT).

4.3 Transport and traffic models

Transport and traffic models make a significant input to the development of policy. In ex ante evaluations of policy measures the policy effects of interest are almost always revealed with the help of models. These models are continually being adjusted in the light of new information, understanding and advances in technology. Over the past few decades this innovation process has been driven largely by two, partly conflicting, objectives: on the one hand, the need for comprehensive information that meets the needs of current policy questions, and on the other hand the scientific desire to describe the world as accurately as possible.

Over the past decade these developments have led to problems with using models in the policy process because the information supplied is, in a certain sense, too complex. This has increased the chances of mistakes occurring, adding to the vulnerability of the policymaking process and in turn making it necessary to impose a rigorous quality control mechanism. In previous research, KiM has concluded that if the models are to remain workable in future, they will have to be improved and subjected to better quality assurance procedures, and the outcomes will have to be presented more effectively. The challenge for the future is to find better ways of interpreting model outcomes in the policy process.

This challenge has been taken up in the IenM ‘Integration and Governance Models’ project, in which KiM is involved. KiM does not intend to develop and manage models itself (except for simple models to be used in the production of the Mobility Report and the Mid to Long Term Outlooks (MLTs)). However, KiM does have extensive knowledge of the available models and modelling techniques as well as knowledge of the policy process, and can use this knowledge to stimulate the development of models and data collection relevant to mobility and transport policy. At the same time, KiM can assist the policymaking process by translating specific information needs (both substantive and process-related) into model development criteria.

Projects	
<p>DGB Strategy Unit Research project, DM1107, large, ongoing</p>	<p>Model development for Mid to Long Term Outlooks for road traffic (MLT model)</p> <p>In recent years, every six months KiM has prepared an outlook on traffic and congestion on the trunk road network two to five years ahead. In March, calculations will be made for Rijkswaterstaat using a mid to long term model for road traffic to monitor atmospheric and noise emissions from the road network. The September Outlook will be used by KiM in the preparation of the annual Mobility Report.</p> <p>The MLT data are updated each year and the model equations are reviewed against the most recent information. Nevertheless, accurately modelling the national trends in road traffic, especially congestion, remains a difficult task. For one thing, a satisfactory explanation for the steep increase in congestion on the trunk road network in 2015 has not yet been found. An attempt has been made to obtain more conclusive results by using regional data, but it proved impossible due to the absence of a long time series of consistent data.</p> <p>The aim of this project is to ensure the quality of the MLTs and where possible improve the assessment method. As in previous years, this is done in cooperation with Rijkswaterstaat Water, Traffic and Environment (RWS WVL) and DGB Roads and Traffic Safety. The work planned for 2017 consist of the following three studies:</p> <ol style="list-style-type: none"> 1. An analysis of the accuracy of KiM’s traffic and congestion projections in recent years. This includes determining what part of the difference between KiM’s projections and the actual situation was due to the trends in the exogenous model variables being different than had been anticipated. KiM will commission a third party to carry out this analysis. 2. An assessment of the robustness of the model coefficients by varying the length of the time series of observations. How do the coefficients change if years are gradually added to or removed from the series? Would it also be possible to base the model on monthly figures, and what influence would that have on the model? 3. Testing the feasibility of alternative model specifications, building on the initial analyses made by students at Eindhoven University of Technology. For example, is it possible to use different quantities for the current explanatory capacity variable (lane kilometres) weighted with the congestion sensitivity of the lane kilometres concerned? Or would it be possible to distinguish between two regimes, representing a ‘saturated’ and a ‘non-saturated’ situation? By extension, a third variant would be to explore the possibilities of using a Network Transmission Model. This study will be carried out by KiM, assisted by graduates of TU Delft and Eindhoven University of Technology.
<p>DGB Strategy Unit Knowledge at the table, DM1106, medium, ongoing</p>	<p>Support for the Integration and Governance Models project</p> <p>In the IenM project ‘Integration and Governance Models’ KiM is working to improve the development of mobility and accessibility models, drawing on recommendations made in the ‘Calculating with Policy’ project conducted by KiM in 2010. The focus is on structuring the relevant information needs for various policy processes, the modelling tools needed to do this, and the development of improved governance processes for developing and using these instruments. For the past five years the core of the project has been the implementation of the improvement programme for models, coordinated by Rijkswaterstaat, which aimed to improve the integrated modelling of car/public transport and incorporated KiM’s uncertainty analysis. The focus for the coming year will be on improving the models for freight transport and positioning the use of models in an adaptive policymaking process. KiM is participating in the project’s steering and preparatory group and provides knowledge to various model development and improvement activities, many of which are led by RWS WVL.</p>

Global description of other small knowledge-at-the-table activities

KiM regularly carries out small knowledge-at-the-table activities for this topic. The emphasis in these activities is on answering questions about the content and nature of existing national and international models and participating in steering groups on model development and application projects within the ministry (including Aeolus).

4.4 Project overview table

Department	Title	Number	Project Type	Start	Size
DGB Strategy Unit	Netherlands Mobility Panel	DM1102	Research project	Ongoing	Large
DGB Strategy Unit	Contribution by KiM to the OViN innovation research programme	DM1401	Research project / Knowledge at the table	Ongoing	Large
DGB Strategy Unit	Validation of various congestion indices	DM1501	Research project	Ongoing	Medium
DGB Civil Aviation Department	Factsheet on aviation data	E928	Research project	Ongoing	Small
DGB Public Transport and Rail	Considering the data needs of the national government	DM1404	Knowledge at the table	Ongoing	Small
DGB Strategy Unit	Contribution to the Infrastructure and Spatial Planning Monitor	DM1113	Knowledge at the table	Ongoing	Small
DGB Strategy Unit	Updating statistics on the use of delivery vans	DM1508	Knowledge at the table	Ongoing	Small
DGB Public Transport and Rail	Dashboard sessions on door-to-door accessibility	MM1512	Knowledge at the table	Ongoing	small
DGB Strategy Unit	Model development for Mid to Long Term Outlooks for road traffic (MLT model)	DM1107	Research project	Ongoing	Large
DGB Strategy Unit	Support for the Integration and Governance Models project	DM1106	Knowledge at the table	Ongoing	Medium

5

Social Importance, the Role of Government and Market Organisation

5.1 Explanation of the core theme

An important policy argument for improving accessibility is that it strengthens the competitiveness of the Netherlands. With this in mind, the government has devoted much effort to developing policies to support the development of the Port of Rotterdam and Schiphol Airport, and more generally the urban regions. In addition, the division of tasks and responsibilities between government and the market is currently the subject of much debate.

These themes have increasingly come under the spotlight in recent years, which has led to an increase in the number of research questions to KiM in this area. How important are mobility and transport? Are they only important for the economy, or is there also a wider interest? What is the function of the major transport hubs, such as the mainports (Rotterdam, Schiphol)? To what extent should government facilitate their functioning, and what can better be left to market players? What instruments does government have at its disposal? How can the government bring about an effective and efficient market organisation? And how can the public roles and tasks be allocated astutely across the various tiers of government?

This core theme addresses this broad pallet of questions and is broken down into the following topics:

- The social importance of mobility and transport, and especially of the mainports
- The role of government and market organisation

The following sections describe for each topic which concrete projects (research projects and knowledge at the table) KiM will be working on in 2017 to provide answers to these research questions.

5.2 The social importance of mobility and transport, and especially of the mainports

The key question in this topic is how we can provide reliable quantitative evidence of the importance of mobility, transport and infrastructure to the social and economic prosperity of the Netherlands. The approach we take adheres as far as possible to the broad concept of welfare that is widely used in welfare economics. Subtopics are the relation between accessibility and economic growth, the importance of mobility broken down by motive (travel to work, business, social/recreational) and factors influencing the functioning of mainports, brainports and greenports.

Projects	
DGB Public Transport and Rail Research project, MM1603, medium, ongoing	The social costs of unreliable rail services The costs of congestion on the trunk road network are regularly published, for example in KiM's annual Mobility Report. Less is known about the social costs of unreliable rail services. The aim of this study is to get a clearer picture of these costs. The costs to be investigated include not only the costs of train delays, but also the costs associated with uncertainties for travellers and shippers, as well as the defection (to other routes or departure times, other carriers or cancellation altogether) that is often the consequence of this unreliability.
DGB Maritime Affairs Research project, MM1702, medium, starting first quarter	Economic consequences of Brexit for the Dutch transport sector There is much uncertainty about the consequences of Brexit, including for travel and transport. In the maritime sector, for example, there is concern that British shipowners will not have to comply with European regulations ensuring a level playing field. KiM will investigate the possible economic effects of Brexit on the transport sector, paying attention to how the Ministry of Infrastructure and the Environment can deal with any such shocks to the transport system.
DGB Roads and Traffic Safety Knowledge at the table, MM1602, small, ongoing	Consequences of motorway tolls in neighbouring countries KiM is supervising research into the road traffic and economic effects in the Netherlands of introducing motorway tolls in Belgium and Germany.
DGB Strategy Unit Knowledge at the table, MM1706, small, starting first quarter	The economic dimension of smart (innovative) mobility Ideas for new and innovative forms of smart transport come up quite regularly. Example are the self-driving car, the superbuss and the hyperloop. Besides a possible impact on mobility, the development and rollout of new concepts and technologies adds to the earning potential of the Netherlands. From an analysis of the literature, we will review the estimated effects on the economy and describe how the government might help with the development of innovative mobility concepts.
DGB Strategy Unit Knowledge at the table, MM1701, small, starting second quarter	The economic importance of existing infrastructure In earlier studies by KiM and many other institutes, steps have been made towards quantifying the relationship between new infrastructure and competitiveness. What has not yet been looked at in any depth is the economic importance of the existing network. This is relevant because over the coming years considerable investments will be made in replacing and renovating the existing infrastructure. Possible topics for investigation include the optimal level of replacement and renovation. We will draw up the research questions in dialogue with policymakers and scientists and, in the next phase, make a plan for exploring these in more depth, either by KiM or by other knowledge institutes and research consultancies.

Global description of other small knowledge-at-the-table activities

KiM also regularly carries out small knowledge-at-the-table activities in this topic area. At the moment there are many questions on the effects of policy measures for improving competitiveness.

5.3 The role of government and market organisation

This topic is about effective and efficient relations between government authorities and the market. How can public interests be safeguarded and what will be the effects of a shift towards more market liberalisation or, alternatively, to more government intervention? How can the government make transport markets work better? How can the government steer semi-public and private organisations in such a way that they contribute to meeting government objectives? Apart from the fundamental tasks of government (such as defining ownership rights), the issue here is the degree to which government can operate as implementer, facilitator and regulator. This topic also includes examination of forms of public-private partnerships and financing mechanisms.

Also relevant to this topic are questions about the division of responsibilities and how cooperation between the various tiers of government can be designed to be as effective and efficient as possible.

Projects	
DGB Public Transport and Rail Knowledge at the table, MM1610, medium, ongoing	Supervision of rail market organisation study Following the parliamentary inquiry into the Fyra high speed train, an independent working group is currently investigating market organisation variants for passenger transport in the Netherlands. KiM has been asked to assist with the supervision of this research project.
DGB Public Transport and Rail Knowledge at the table, MM1703, small, starting third quarter	Financing the public transport system As a follow-up to the Future of Public Transport process, it is expected that in 2017 there will also be political interest in a different approach to financing public transport which is more suited to the proposed long-term future of public transport. What financial incentives will ensure that public transport develops as intended and that the proposed longer term scenario will be feasible? At the moment, at the request of a parliamentary motion, we are already carrying out a study into the relation between transport for specific groups and public transport. 'Departmenting' – breaking down departmental barriers – may be a way of getting more social value for money. The outcome of this study will provide input to research into the possibilities for the longer term. KiM will describe the possible next steps to be taken that are relevant from a research perspective.
DGB Civil Aviation Department Knowledge at the table, MM1503, small, ongoing	Possibilities for a selectivity policy for Schiphol In this project KiM contributes to the discussion on the details of the selectivity policy for Schiphol Airport. The study examines the effects of moving certain market segments to the new Lelystad Airport. KiM has a supervisory role.
DGB Maritime Affairs Knowledge at the table, MM1605, small, ongoing	Work programme on maritime transport DGB Maritime Affairs is preparing a new work programme to inform future policy. KiM offers support for various activities during the preparation of this work programme, including advice on research into relevant trends and participation in discussion meetings.
DGB Strategy Unit (also involved: DGB, DGMI, DGRW) Research project, MM1704, small, starting second quarter	New times, new policy instruments? Following a period of leaving as much as possible to the market and minimising government intervention, since the crisis there has been greater demand for central government intervention in some areas. At the same time, the way in which central government works with other government authorities and partners is also changing, the challenges facing society are considerable and numerous transport innovations are coming forward. The question in this research project is whether this will also lead to new instruments for mobility policy or require government to adopt a new role. We expect various questions about this to arise in future. To ensure we are fully prepared to give answers to these questions we will review the instruments available in the policy toolbox in a discussion document. The first concrete example of the types of questions we expect is to describe what role the government can adopt in the pursuit of sustainability objectives (see Core theme 3, project DT1701). For example, what measures can government adopt to influence the electrification of transport?

Global description of other small knowledge-at-the-table activities

KiM regularly carries out small knowledge-at-the-table activities related to this topic. Examples are knowledge at the table for the design of public transport services and management concessions and for the preparation of the mainport strategy for Schiphol Airport.

5.4 Project overview table

Department	Title	Number	Project Type	Start	Size
DGB Public Transport and Rail	The social costs of unreliable rail services	MM1603	Research project	Ongoing	Medium
DGB Maritime Affairs / other departments	Economic consequences of Brexit for the Dutch transport sector	MM1702	Research project	1 st quarter	Medium
DGB Roads and Traffic Safety	Consequences of motorway tolls in neighbouring countries	MM1602	Research project	Ongoing	Small
DGB Strategy Unit	The economic dimension of smart (innovative) mobility	MM1706	Knowledge at the table	1 st quarter	Small
DGB Strategy Unit	The economic importance of existing infrastructure	MM1701	Knowledge at the table	2 nd quarter	Small
DGB Public Transport and Rail	Supervision of rail market organisation study	MM1610	Knowledge at the table	Ongoing	Medium
DGB Public Transport and Rail	Financing the public transport system	MM1703	Knowledge at the table	3 rd quarter	Small
DGB Civil Aviation Department	Possibilities for a selectivity policy for Schiphol	MM1503	Knowledge at the table	Ongoing	Small
DGB Maritime Affairs	Work programme on maritime transport	MM1605	Knowledge at the table	Ongoing	Small
DGB, DGMI, DGRW	New times, new policy instruments?	MM1704	Research project	2 nd quarter	Small

6

Policy Evaluations and Assessment Frameworks

6.1 Explanation of the core theme

This core theme focuses on ex ante and ex post evaluations of infrastructure and mobility policy and the assessment frameworks required for these evaluations. What are the most effective and efficient policy options for solving problems and exploiting opportunities?

The most important assessment method for infrastructure and spatial planning is social cost-benefit analysis (SCBA). SCBA provides insights into the welfare effects of a measure, but it raises questions because it sometimes draws too much attention to the balance of costs and benefits and how this relates to policy objectives. Moreover, given the increase in cooperation between regions and the growing use of integrated decision-making, it is questionable whether a national SCBA can provide the right information to all parties concerned. These issues require further examination within this core theme.

Three topics are central to this core theme:

- Developing and broadening methodology
- Improving the uptake of insights from assessment frameworks
- Implementing and reviewing evaluations

The shift of emphasis within the ministry from investment to other measures, such as information and design, has led to a fall in demand for second opinions on construction projects. Nevertheless, for 2017 there are still a significant number of research questions on these three topics. The following sections explain for each topic which concrete projects (research projects and knowledge at the table) KIM will be working on in 2017 to provide answers to these research questions.

6.2 Developing and broadening methodology for ex ante evaluations

KiM's methodological development work is primarily concerned with the questions surrounding cost-benefit analysis. Although SCBA has been used for more than ten years, various aspects are still under development. These relate to broadening the applicability of the instrument (for example to area-based projects and for management and maintenance decisions) and to accommodating the latest insights into the types of effects generated by transport projects (for example, reliability benefits). Besides methodological development, we are devoting more attention to examining the position of SCBA within the range of policy analysis methods.

Projects	
DGB Roads and Traffic Safety Knowledge at the table, EA1501, medium, ongoing	Updating valuation ratios for SCBA The valuation ratios for use in social cost-benefit analyses are being updated. The list of valuation ratios is maintained by the SEE Support Desk for Economic Evaluation at RWS WVL. KiM is making various contributions to the update and participates in the coordinating meetings on updating these valuation ratios.
DGRW Regional and Project Development (also involved: DGB Strategy Unit) Knowledge at the table, EA1401, medium, ongoing	Development of adaptive policy In 2013 KiM described how adaptive policy can be applied in the regional agendas. The adaptive approach is still highly relevant today. To ensure the adaptive approach can be implemented in the ministry's transport and mobility policies in the years to come, KiM has been asked to draw up a practical step-by-step plan, including a memorandum setting out why the adaptive approach is so important and exploring the role of government and the use of policy instruments in this adaptive approach.
DGRW Regional and Project Development Knowledge at the table, EA1601, medium, ongoing	Update of the Framework CBA for MIRT studies The Framework Cost-Benefit Analysis (CBA) for MIRT studies (studies for the Multi-Year Plan for Infrastructure, Spatial Planning and Transport) contains formats and rules for use in CBAs of standard MIRT projects. The framework will be updated in 2017 to include the latest agreements and methodological developments and insights. KiM is involved in the supervision of this update. KiM has already worked out in detail how projects of national importance and seaports and airports can be included in this format, which was originally intended only for standard projects.
DGB Strategy Unit Research project, EA1701, medium, second quarter	Preparatory study for the update of valuation of travel time and reliability Gains in travel time and reliability are major benefits in SCBAs of mobility projects. To measure these as accurately as possible it is essential to use up-to-date valuation ratios. For one thing, travellers' preferences may change. Also, valuation data are not yet available for all modes (e.g. for cycling). In addition, an ongoing inventory of the valuation of comfort may have consequences for the valuation of travel time. In 2017 we will begin a study into how best to carry out the update of the KiM report (from 2013). A start can then be made with implementing the update in 2018.
Finance, Management and Control (also involved: DGB, DGRW, DGMI, RWS) Knowledge at the table, EA1102, small, ongoing	Various generic questions on SCBA methodology When SCBAs are conducted, questions arise that are not limited to one particular project and for which an appropriate and consistent solution must be found, in consultation with relevant parties such as the CPB, PBL Environmental Assessment Agency and RWS WVL. In 2017 these will include assumptions about the real growth in travel time valuation over time.

Global description of other small knowledge-at-the-table activities

Various small knowledge-at-the-table activities are planned for this topic. These will include questions about the quality of valuation ratios.

6.3 Improving the uptake of insights from assessment frameworks

At least as important as developing new knowledge is making sure that the insights already obtained by the research community are actually taken up by the ministry's policy officers. KiM plays a pivotal role in the uptake of expertise about SCBAs and other assessment frameworks and aspires to continue in this role over the years to come. This includes explaining in understandable terms how SCBA works, as well as presenting and communicating the results of SCBAs of specific projects and programmes.

Projects	
<p>DGRW Regional and Project Development (also involved: DGB Strategy Unit) Research project / Knowledge at the table, EA1702, medium, starting first quarter</p>	<p>Follow-up questions on interministerial policy review on flexibility in infrastructure planning</p> <p>In view of the Government's response to the interministerial policy review on flexibility in infrastructure planning and the implementation of its policy proposals, DGRW and DGB have put several questions to KiM. Some are research questions and some are requests for knowledge at the table.</p> <p><i>Research questions:</i></p> <ul style="list-style-type: none"> • The 75% coverage of projects in the assessment stage means that at the end of this stage a decision has to be made on which projects to proceed with. What arguments are needed to come to such decisions? Is it sufficient to use the decision support information now collected as standard practice in the assessment stage? KiM is preparing a discussion document with options and criteria for prioritising projects. • How can a start be made with an SCBA at an early stage of the MIRT? The structure of the MIRT study remains open and so does not impose any requirements for an assessment framework. Nevertheless, there is a need at this stage to think in terms of the costs and benefits of alternative options. In the discussion document mentioned above, therefore, thought will be given to ways of including a description of costs and benefits when alternative options are being developed. <p><i>Knowledge at the table:</i></p> <ul style="list-style-type: none"> • Input of ideas for the structure of the evaluation (after two years) of the new procedure. • Experience will be gained with the new approach resulting from the interministerial review in three regional programmes. KiM has been asked to provide expert advice on assessment frameworks and mobility in a limited number of sessions.
<p>Finance, Management and Control (also involved: DGB Roads and Traffic Safety, DGB Public Transport and Rail, DGB Civil Aviation Department, DGB Maritime Affairs, DGB Infrastructure Efficiency Programme) Research project, EA1603, medium, starting first quarter</p>	<p>Overview of evaluation methods and monitoring agreements for all types of mobility measures</p> <p>Experiences with ex ante and ex post evaluation studies, especially SCBA, at lenM during the last 15 years have been mainly of investment projects for the construction of infrastructure. However, with the shift towards other types of policy instruments and interventions, the nature of the ministry's policies are changing and so the impact measurement techniques will also have to be adapted. In addition, projects are increasingly being carried out with partners in the region and are designed as far as possible to be adaptable and broad in scope. This also presents new challenges to policy evaluation and the necessary impact studies.</p> <p>In this project KiM is reviewing past and present agreements and evaluation frameworks, for example for the Infrastructure Efficiency Programme, and the arrangements made for activities now referred to as 'smart' accessibility measures. For example, we have our own assessment framework for traffic management, and local and regional public transport projects also work with their own methodologies and procedures. These will be compared and contrasted to identify best practices, obtain a clear picture of what assessment methodologies and impact measurement possibilities there are, and determine the range of decision information required by KiM's clients. At the same time, we will make the approaches taken to the various measures more consistent and contribute to the development of lenM as a learning organisation by sharing best practices between departments.</p> <p>In addition, as part of this project we will answer various ad hoc questions about the contents of SCBAs and other assessment frameworks from DGB and DGRW.</p>
<p>Finance, Management and Control (also involved: DGB, DGRW, DGMI) Knowledge at the table, E712, small, ongoing</p>	<p>Communication on SCBA and Secretariat of the inter-departmental SCBA core team</p> <p>KiM makes information on SCBA available for presentations and reports and contributes to conferences and courses in this area. KiM also runs the secretariat of the inter-departmental SCBA core team.</p>

Global description of other small knowledge-at-the-table activities

Within this topic, small knowledge-at-the-table activities often consist of contributions to projects by other knowledge institutes and the policy assessment agencies.

6.4 Implementing and reviewing evaluations

As well as conducting ex ante evaluations of concrete policy instruments, KiM gives second opinions on SCBAs, takes part in overseeing the production of specific SCBAs and advises the policy directorates on the implementation of SCBAs and the role of SCBA in the decision-making process.

KiM also carries out ex post evaluations. Ex post evaluation of infrastructure projects and policies can deliver important benefits. Learning from the past can improve the quality of future ex ante evaluations, and therefore the quality of decision-making. Moreover, ex post studies and meta-evaluations can provide information of wider significance by revealing which policies have been successful and under what circumstances, and which policies have not. Within this topic area, KiM provides second opinions on policy audits included in the central government budget and conducted by third parties.

Projects	
<p>DGB Strategy Unit (also involved: DGB Roads and Traffic Safety) Research project, EA1505, medium, ongoing</p>	<p>Quick scan of existing knowledge about the effects of price incentives Pricing policy is an effective way of influencing mobility choices. KiM is making an inventory of recent information (national and international) about various forms of price incentives for both passenger and freight transport. The focus of the study is the expected or proven effectiveness of concrete expressions of pricing policy, for example for parking charges, special lanes such as the high occupancy toll (HOT) and high occupancy vehicle (HOV) lanes in the US, and cordon charges such as the congestion charge in London. We have also reserved time for ad hoc questions.</p>
<p>Finance, Management and Control (also involved: DGB Roads and Traffic Safety, DGB Public Transport and Rail, DGB Civil Aviation Department, DGB Maritime Affairs) Knowledge at the table, EA1403, medium, starting at various times</p>	<p>Supervising and giving second opinions on SCBAs of specific projects (as far as currently envisaged):</p> <ul style="list-style-type: none"> - 3KV - A6 motorway - Innova58 - N33 main road, Groningen–Delfzijl - A2 motorway, Kerensheide
<p>Finance, Management and Control (also involved: DGB Roads and Traffic Safety, DGB Public Transport and Rail, DGB Civil Aviation Department, DGB Maritime Affairs), DGMI Knowledge at the table, EA1405, medium, starting at various times</p>	<p>Supervising and assessing policy audits (as far as currently envisaged): KiM is regularly asked to advise on the structure, execution and results of policy audits. In 2017 this is expected to be required for the following topics:</p> <ul style="list-style-type: none"> - Civil aviation (policy article 17, see below) - Roads and traffic safety (policy article 14, see below)
<p>DGB Maritime Affairs Knowledge at the table, EA1614, small, ongoing</p>	<p>Quality improvement of maritime monitoring and evaluation The Maritime Affairs directorate makes use of various monitoring programmes, including the maritime monitor, the ports monitor and the inland harbour monitor. The directorate is looking for ways to match the current monitoring programmes more closely to the content of current policies. A discussion session held by KiM in January 2017 examined how useful the monitoring programmes are in the light of the content and aims of current policy. This session is expected to generate several activities in which KiM will also be involved. Other questions, for example resulting from the 2016 policy audit of Article 18 of the National Budget, on maritime shipping, seaports and inland shipping, can also be dealt with in this knowledge-at-the-table project.</p>
<p>DGB Public Transport and Rail Knowledge at the table, EA1617, small, ongoing</p>	<p>Benchmark for rail charges In 2015 an international benchmark study was carried out for IenM comparing the Dutch infrastructure user fees for international rail freight transport with the fees charged in neighbouring countries. The competitiveness of rail freight transport is determined not only by this infrastructure user fee, but also partly by other cost components, such as traction, drivers, freight cars, etc. KiM is conducting a preliminary study to identify the availability of up-to-date data that can be used for international comparisons of these cost components. KiM will have a supervisory role in any follow-up to this preliminary study.</p>

Projects	
DGB Civil Aviation Department Knowledge at the table, EA1611, small, starting first quarter	Assessment of policy audit of Article 17, civil aviation The policy audit of Part XII Article 17 of the National Budget is planned for 2017. The audit is of national policy for civil aviation. The policy audit will be carried out by external consultants. KiM will assess the methodology and the quality of execution of the audit.
DGB Roads and Traffic Safety Knowledge at the table, EA1618, small, starting first quarter	Assessment of policy audit of Article 14, roads and traffic safety The policy audit of Part XII Article 14 of the National Budget is planned for 2017. The audit is of national policy for roads and traffic safety. The policy audit will be carried out by external consultants. KiM will assess the methodology and the quality of execution of the audit.

Global description of other small knowledge-at-the-table activities

KiM regularly carries out small knowledge-at-the-table activities for this topic area. An example is the supervision of the preparation of the monitoring framework for ERTMS (the cooperation programme for introducing a new train protection and control system in the Netherlands). In 2017 we expect a relatively large number of questions about appraisal methods in addition to the use of SCBA. We also receive many ad hoc questions about completed SCBAs.

6.5 Project overview table

Department	Title	Number	Project Type	Start	Size
DGB Roads and Traffic Safety	Updating valuation ratios for SCBA	EA1501	Knowledge at the table	Ongoing	Medium
DGRW Regional and Project Development	Development of adaptive policy	EA1401	Knowledge at the table	Ongoing	Medium
DGRW Regional and Project Development	Update of the Framework CBA for MIRT studies	EA1601	Knowledge at the table	Ongoing	Medium
DGB Strategy Unit	Preparatory study for the update of valuation of travel time and reliability	EA1701	Research project	2 nd quarter	Medium
Finance, Management and Control	Various generic questions on SCBA methodology	EA1102	Knowledge at the table	Ongoing	Small
DGRW Regional and Project Development	Follow-up questions on interministerial policy review on flexibility in infrastructure planning	EA1702	Research project	1 st quarter	Medium
Finance, Management and Control	Overview of evaluation methods and monitoring agreements for all types of mobility measures	EA1603	Research project	1 st quarter	Medium
Finance, Management and Control	Communication on SCBA and Secretariat of the inter-departmental SCBA core team	E712	Knowledge at the table	Ongoing	Small
DGB Strategy Unit / DGB Roads and Traffic Safety	Quick scan of existing knowledge about the effects of price incentives	EA1505	Knowledge at the table	Ongoing	Medium
Finance, Management and Control	Supervising and giving second opinions on SCBAs of specific projects	EA1403	Knowledge at the table	Various times	Medium
Finance, Management and Control	Supervising and assessing policy audits	EA1405	Knowledge at the table	Various times	Medium
DGB Maritime Affairs	Quality improvement of maritime monitoring and evaluation	EA1614	Knowledge at the table	Ongoing	Small
DGB Public Transport and Rail	Benchmark for rail charges	EA1617	Knowledge at the table	Ongoing	Small

Department	Title	Number	Project Type	Start	Size
DGB Civil Aviation Department	Assessment of policy audit of Article 17, civil aviation	EA1611	Knowledge at the table	1 st quarter	Small
DGB Roads and Traffic Safety	Assessment of policy audit of Article 14, roads and traffic safety	EA1618	Knowledge at the table	1 st quarter	Small

List of abbreviations

AVV	Transport Research Centre (<i>Adviesdienst Verkeer en Vervoer</i>)	NS	Dutch Railways (<i>Nederlandse Spoorwegen</i>)
BIT	Behavioural Insight Team	NSL	National Cooperative Air Quality Programme (<i>Nationaal Samenwerkingsprogramma Luchtkwaliteit</i>)
CBA	Cost-benefit analysis	OVIN	Dutch Travel Survey (<i>Onderzoek Verplaatsingen in Nederland</i>)
CBS	Statistics Netherlands (<i>Centraal Bureau voor de Statistiek</i>)	PBL	Netherlands Environmental Assessment Agency (<i>Planbureau voor de Leefomgeving</i>)
CPB	Netherlands Bureau for Economic Policy Analysis (<i>Centraal Planbureau</i>)	RWS CIV	Rijkswaterstaat Central Information Services (<i>Rijkswaterstaat Centrale Informatievoorzieningen</i>)
DGB	Directorate-General for Mobility and Transport (<i>Directoraat-Generaal Bereikbaarheid</i>)	RWS WVL	Rijkswaterstaat Water, Traffic and Environment (<i>Rijkswaterstaat Water, Verkeer en Leefomgeving</i>)
DGMI	Directorate-General for the Environment and International Affairs (<i>Directoraat-Generaal Milieu en Internationaal</i>)	SCBA	Social cost-benefit analysis
DGRW	Directorate-General for Spatial Development and Water Affairs (<i>Directoraat-Generaal Ruimte en Water</i>)	SCP	Netherlands Institute for Social Research (<i>Sociaal en Cultureel Planbureau</i>)
IenM	Ministry of Infrastructure and the Environment (<i>Ministerie van Infrastructuur en Milieu</i>)	SVIR	National Policy Strategy for Infrastructure and Spatial Planning (<i>Structuurvisie Infrastructuur en Ruimte</i>)
ILT	Human Environment and Transport Inspectorate (<i>Inspectie Leefomgeving en Transport</i>)	SWUNG	Cooperative programme on implementing new noise policy (<i>Samen Werken aan de Uitvoering van Nieuw Geluidsbeleid</i>)
JTRC	Joint Transport Research Committee	PBL	Planbureau voor de Leefomgeving
KiM	Netherlands Institute for Transport Policy Analysis (<i>Kennisinstituut voor Mobiliteitsbeleid</i>)	RWS CIV	Rijkswaterstaat Centrale Informatievoorziening
LMS-BT	National Model System, Reliability module (<i>Landelijk Model Systeem</i>)	RWS WVL	Rijkswaterstaat Water, Verkeer en Leefomgeving
MIR	Infrastructure and Spatial Planning Monitor (<i>Monitor Infrastructuur en Ruimte</i>)	SCP	Sociaal en Cultureel Planbureau
MIRT	Multi-Year Plan for Infrastructure, Spatial Planning and Transport (<i>Meerjarenplan Infrastructuur, Ruimte en Transport</i>)	SKIA	Strategische Kennis- en Innovatieagenda
MLT	Mid to Long Term Outlook (<i>Middellangetermijnverkenning</i>)	SVIR	Structuurvisie Infrastructuur en Ruimte
MPN	Netherlands Mobility Panel (<i>Mobiliteitspanel Nederland</i>)	SWUNG	Samen Werken aan de Uitvoering van Nieuw Geluidsbeleid
NOVB	National Public Transport Council (<i>Nationaal Openbaar Vervoerbestuur</i>)	TRB	Transportation Research Board
		TEN-T	Trans-European Transport Network
		WLO	Welvaart en Leefomgeving

Colophon

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