



Ministry of Infrastructure and the
Environment

Work Programme 2016

KiM Netherlands Institute for Transport Policy Analysis



Inhoud

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About KiM and this Work Programme

0.1 Introduction

This is the 2016 Work Programme of the KiM Netherlands Institute for Transport Policy Analysis. KiM provides knowledge for the development of policy by the Ministry of Infrastructure and the Environment (IenM) in the field of mobility and accessibility, including the relationships between liveability and spatial planning. KiM makes this knowledge freely available to third parties.

The KiM Work Programme is build around the ministry's policy agenda. Urban development and the economic upturn are putting increasing pressure on accessibility, open space and liveability in the Netherlands.¹ IenM is pursuing three strategies to keep the country accessible and liveable in future: strengthening the road and rail networks, stimulating smart travel and experimenting with intelligent transport systems. Eight broad research and exploratory studies on accessibility topics have already been started under the Multi-Year Plan for Infrastructure, Spatial Planning and Transport (MIRT). These studies focus on users and their behaviour and investigate whether there is any correlation with other spatial planning issues in specific areas (such as housing, economic activity, liveability and safety). The Infrastructure Efficiency Programme (*Beter Benutten*) is being continued until 2017. A key part of this programme is the use of intelligent transport systems (ITS), autonomous vehicles being a promising development in this area. The Energy Agreement for Sustainable Growth contains agreements on sustainable mobility solutions and more efficient transport. An important objective is to reduce CO₂ emissions in the transport sector by 17% from 1990 levels by 2030 and by 60% by 2050. On public transport, IenM is implementing the Long Term Rail Agenda (LTSA) to create a reliable and safe rail network with sufficient capacity as part of an optimal public transport system. The various parties involved meet regularly in the public transport and rail platforms (*OV&Spoortafels*) to discuss these matters. In 2015 the introduction of the new standards and enforcement arrangement for Schiphol, allows for a yearly 500,000 aircraft movements until 2020. With a view to network quality and the competitive position of Schiphol Amsterdam Airport, this ceiling enables the development of mainport-related traffic. In 2015 the House of Representatives adopted the Maritime Strategy, which contains all aspects of central government maritime policy until 2025 and aims to further strengthen the Netherlands' position as a leading international maritime nation. A government-wide policy agenda has been drawn up to implement the strategy via a dynamic work programme for maritime shipping, seaports and inland shipping.

¹ This paragraph is based on the IenM policy agenda as described in the national budget. Tweede Kamer der Staten-Generaal. (2015). *Rijksbegroting 2016: xii Infrastructuur en Milieu* (ISSN 0921 – 7371).

KiM contributes to all these topics by providing up-to-date and evidence-based knowledge. 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 completion of a policy;
- giving advice during the development of policy options by carrying out analyses and providing existing knowledge (so called knowledge at the table, see below).

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

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, without it being requested by one of the policy directorates, KiM can take the decision to carry out a study itself. However, such studies are infrequent. KiM's stated objective, in summary, 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 drawn up using 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 the Ministry of 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 the ministry.
- **Observational reports:** drawing attention within the ministry to various topics in response to current policy and research developments or reports by third parties. This may be in the form of a memorandum, or in an email, a telephone call, meeting or presentation. These activities are not included in the Work Programme, although capacity is available within KiM for this purpose. These reports and observations are not demand-driven.

An indication of the capacity requirements for these three types of products is given in section 5.0.

KiM's working methods

KiM works in the following way:

- KiM carries out projects in close contact with the policymakers of the Ministry of IenM. The short lines of communication between the policymakers and KiM help 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. Publication occurs within three months of completion of the research. 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 a memorandum, paper or presentation.
- The type of policy input given by KiM depends on the phase of policy development:
 - 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 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 certain 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 are apparent – the 'what' question), but also explanatory analyses (what are the underlying factors – the 'how' question).
- KiM's intention to strengthen and broaden the ministry's knowledge base relates to the full range of the ministry's policy responsibilities, including the relationship between mobility and spatial development and between mobility and sustainability and safety.

0.3 Positioning

KiM is positioned within the Ministry of IenM to facilitate the uptake of KiM products and 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 for 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 Behavior Modeling	TU Delft
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	TU Delft
Professor Vincent Marchau	Uncertainty and Adaptivity of Societal Systems	Radboud University Nijmegen
Dr. Tim Schwanen	Transport and Social Geography	University of Oxford
Professor Eddy Van de Voorde	Transport and Regional Economics	University of Antwerp
Professor Erik Verhoef	Spatial Economics	VU University Amsterdam
Professor Bert van Wee	Transport Policy	TU Delft

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

Researchers in the field of civil aviation cooperate in the Airneth international scientific network for aviation research and policy. Both Airneth and KiM aim to support aviation policy with insights from research. In view of this, in mid-2012, following periodic coordination with the ministry's Civil Aviation Department, KiM took over the management of Airneth. KiM's role in steering Airneth activities enhances their demand-driven character and thus the effectiveness of the research input to aviation policy. Airneth activities are therefore 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 the field of 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. Core themes also provide the basis for structuring KiM's activities, because they consist of complementary clusters of projects and other 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 2016 are listed below.

- 1. Mobility, accessibility and spatial planning** Core theme 1 is about describing and explaining national and international developments in mobility and transport. The theme includes reviewing past developments (drawing conclusions in the light of socio-economic, spatial, demographic and technological developments and policy effects) as well as looking forward (preparation of medium- and long-term outlooks to support robust policy development), paying specific attention to the interactions with spatial development and urban planning. In addition, this theme focuses on understanding accessibility, operationalising the concept of accessibility, and developing and analysing measures for improving accessibility. Studies in this core theme encompass both passenger and freight transport, as well as transport networks, chains and hubs.
- 2. Mobility of groups** This core theme is about the mobility of specific groups. The research aims to derive a picture of the mobility of specific groups, the autonomous and induced changes in the mobility behaviour of such groups and the underlying factors involved. Insights gained at the macro level are translated to the meso level: to groups or market segments. The underlying factors provide not only explanations, but also offer possible pointers for policy development.
- 3. Sustainable mobility, safety and transition** This core theme is about 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. Much of the research effort in this core theme is devoted 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 this transition?
- 4. Models and data** A key element in core theme 4 is stimulating the model development and data collection required for preparing mobility and transport policies. The theme also includes the development of indicators for monitoring strategic policy objectives.
- 5. Social importance, the role of government and market organisation** This core theme aims to provide insights into the importance of mobility, transport and infrastructure for the social, spatial and economic development of the Netherlands, with an emphasis on the significance of the mainports and other transport hubs. Attention is given to the possibilities available to the government to safeguard this vital national interest, and to exploring and analysing effective and efficient government-market relations in the various sectors (road, regional public transport, rail, inland shipping, maritime shipping, aviation). Finally, the theme examines the question of how administrative relations between the various tiers of government can be made more effective and efficient.
- 6. Policy evaluations and assessment frameworks** Core theme 6 is concerned with evaluating the effectiveness and efficiency of policy instruments for mobility and transport. The theme covers ex ante and ex post evaluations (including social cost-benefit analysis – SCBA) and refining and broadening methodologies, with attention to the economic and administrative aspects. KiM advises the policy directorates on performing evaluations, carries out evaluations itself and can review 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 and Pauline Wortelboer 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
3. Sustainable mobility, safety and transition	Arjen 't Hoen
4. Models and data	Sascha Hoogendoorn
5. Social importance, the role of government and market organisation	Pauline Wortelboer
6. Policy evaluations and assessment frameworks	Pauline Wortelboer

0.5 About the Work Programme 2016

Preparation and flexibility

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 expertise within KiM and KiM's working methods as 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 the Ministry of Infrastructure and the Environment.

The Work Programme is flexible. Interim adjustments and additions to the Work Programme, for example in response to political and social developments, may lead to a reprioritisation of projects, other forms of implementation and/or to the cancellation of projects.

Defining topics in 2016

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 2016 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 2016	Page	Link to KiM core themes
1. First / last mile	• Bicycle parking charges	34	1, 2 and 5
	• The role of parking in the mobility system	15	
	• The first and last mile in passenger road transport	18	
	• Bicycle plus public transport	21	
2. Quality of public transport	• Quality aspects of the chain approach	16	1, 2 and 5
	• Supporting research questions for the Future of Public Transport	17	
	• Bicycle plus public transport	21	
	• Indicators of door-to-door accessibility by public transport	28	
3. Development of freight transport	• Trends in the modal split in freight transport	16	1 and 4
	• Effects of the North Pole route on the strategic position of seaports and maritime shipping	15	
	• Study of the importance/effect of China's New Silk Road for lenM	15	
	• Updating statistics on the use of delivery vans	28	
4. Measuring effectiveness and efficiency of the 'smart' accessibility measures	• Social priorities for replacement and renovation projects	33	1, 5 and 6
	• Effects of flexible working on congestion – 2 nd phase	17	
	• Use of the 'waterfall method' for estimating the effects in the Infrastructure Efficiency Programme 2	17	
5. Mobility systems of the future	• Radical innovations and modern technologies in the public transport system	14	1
	• Impact on society of the autonomous car	15	
6. Upgrading mobility data	• Netherlands Mobility Panel	27	4
	• Contribution by KiM to OViN Innovation Research	28	
7. Policy evaluations in the lenM learning organisation	• Knowledge infrastructure for rail safety	24	3, 5 and 6
	• Overview of evaluation methods and monitoring agreements for all types of mobility measures	39	
	• Assessment of policy audit of Article 18 maritime shipping, seaports and inland shipping	38	
	• Second opinions on SCBAs of specific projects	38	

Breakdown of research capacity in 2016

In 2015 about 40% of the research capacity was used for knowledge-at-the-table projects. This percentage will remain about the same in 2016. The remaining capacity will be devoted to research projects and observational reports.

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 2015 and the new projects starting in 2016. The following information is given for each project: title, project type (research or knowledge at the table), the commissioning department, project number, expected capacity requirements (large, medium, small²) 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 project stated in this Work Programme are the total capacity requirements, which for some projects means the capacity requirements spread over more than one year. A considerable number of projects, especially those starting in the last quarter of 2016, will continue into 2017 because the programme is dynamic and rolls over from year to year. This also makes it possible to respond to new questions and changing issues.

² 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

The transport and traffic system is complex. Many factors determine the scale and nature of the demand for mobility of people and goods, including demographic and socio-economic trends, technological developments, computerisation and automation, and spatial planning and urban design. Because specific factors influence the way the demand for mobility and transport are met, these factors also determine the level of accessibility associated with this mobility. Technological developments make it possible to access services and facilities in new ways. Understanding the factors determining mobility and accessibility and the interactions between transport and traffic and the physical environment provides pointers to possible policy levers, and thus provides the basic knowledge required for policymaking in the field of mobility and accessibility. The rapid changes in these influential factors make it more important to closely monitor these developments and their consequences for mobility.

The core theme Mobility, Accessibility and Spatial Planning focuses on describing and explaining national and international trends in mobility and transport, and of their consequences for accessibility. This involves reviewing past social developments and implemented policy to explain trends in mobility and accessibility, as well as exploring possible (but in the final instance unknowable) future developments. The latter can be attempted by developing environmental scenarios to support robust policy development, through the preparation of medium- and long-term outlooks, and by estimating the effects of specific policy options on accessibility.

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

Two topics are central to this core theme:

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

The following sections show per topic which concrete activities (research projects and knowledge at the table) KiM will be undertaking in 2016 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 area involve describing the system in the past, present and future, and explaining actual developments in mobility and the consequences for accessibility. Besides the functioning of the transport system, the focus of these studies is on gaining insight into the relevant actual and/or expected developments in the factors influencing the transport system. Early recognition of possible developments allows the policy directorates to anticipate potential consequences and develop adaptive strategies. In this respect, there is also a relation with core themes 4 (regarding model development) and 6 (regarding policy instruments and assessment frameworks).

Projects	
<p>DGB Strategy Unit Research project, BR1601, large, starting first quarter</p>	<p>Mobility Report 2016 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 growth in passenger and freight transport. It therefore provides input to the development of policy and for the public debate about mobility in general. Any specific topics to be highlighted will be identified in consultation with the policy directorates. Likely candidates at this stage include the underlying road network and an explanation for trends in the use of public transport.</p>
<p>DGB Strategy Unit Research project, BR1418, medium, ongoing</p>	<p>The uncertainty analysis It is important when developing policy to regularly investigate the mobility effects of specific developments that may deviate from the scenarios and models used in policy preparation. This is what the uncertainty analysis is for and it is carried out during the production of new Welfare, Prosperity and Quality of the Living Environment scenarios ('WLO scenarios') and the updates of strategic models, such as the Netherlands Regional Model (<i>Nederlands Regionaal Model</i>, NRM) and the National Model System (<i>Landelijk Model Systeem</i>, LMS). This continual study explores exogenous developments/environmental uncertainty in the future (long term) – developments over which IenM has no direct control, such as changing activity patterns, economic developments, technological developments, changing mobility choice behaviour, the influence of other countries' policies, etc. In the first few months of 2016 the project will focus specifically on the mobility consequences of developments in ICT in society and traffic and transport systems. KiM will work on this project with other organisations, including Rijkswaterstaat Water, Traffic and Environment (RWS WV) and PBL Netherlands Environmental Assessment Agency. In mid-2016 a decision will be made on whether other uncertainties will be investigated later in 2016, and if so, which ones.</p>
<p>DGB Public Transport and Rail Research project, BR1506, medium, ongoing</p>	<p>Radical innovations and modern technologies in the public transport system The development of autonomous cars has recently attracted considerable interest as the ultimate innovation in road transport. Part of this technology can be introduced directly into the public transport system and amounts to a technological leap in the system. DGB has asked KiM to identify and describe future innovations and technologies that could have a radical effect on the public transport system. These developments will then be investigated to identify their consequences for the quality aspects important to travellers and for the overall use of public transport.</p>

Projects	
<p>DGB Roads and Traffic Safety / 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. The Netherlands aims to be a testing ground for the development of such systems and is pursuing various initiatives (including the Dutch Automated Vehicle Initiative (DAVI) and Connected Mobility) to make automatic driving feasible and widely deployable. 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. In 2016 KiM will use these four scenarios to identify the possible systemic consequences for society and for IenM of various transitional pathways to partial or full automation. In addition, the project will contribute to the establishment of an international research agenda during the Dutch presidency of the EU. Possibilities for follow-up research in 2016 include:</p> <ul style="list-style-type: none"> - monitoring market trends/developments; - research into the acceptance of various technologies (who uses what, and when is a functionality actually useful?); - research into the sustainability aspects of transition pathways to the driverless car (what do the scenarios mean for traffic emissions?); - research into the spatial implications of the driverless car (possibly with PBL).
<p>DGMI International Affairs Knowledge at the Table, OG1208, small, ongoing</p>	<p>Contribution to the IenM policy team Horizon 2020 Horizon 2020 is the new 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 that 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 Strategy Unit Research project, BR1602, medium, first quarter</p>	<p>The role of parking in the mobility system Future urban development is expected to lead to heavier road traffic in urban areas and greater demand for parking places, with negative consequences for 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 a meta-analysis and information from the mobility panel and interviews, this study will identify 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 in this way. The project will generate insights into the opportunities to develop parking policies for use as mobility management instruments and how central government can manage mobility, given that parking policy is a municipal government responsibility.</p>
<p>DGB Maritime Affairs Research project, MM1403, medium, starting first quarter</p>	<p>Effects of the North Pole route on the strategic position of seaports and maritime shipping The 'North Pole route' between Asia and Europe may have an influence on intercontinental cargo flows and therefore on the strategic position of Dutch and other seaports and on maritime shipping. This study examines the potential importance of this route and includes environmental and safety aspects that have not already been investigated by the International Maritime Organization. The study builds on relevant analyses already made by the Netherlands Bureau for Economic Policy Analysis (CPB).</p>
<p>DGMI International Affairs Research project, BR1518, medium, ongoing</p>	<p>Study of the importance/effect of China's New Silk Road for IenM In May 2014 China unveiled its 'New Silk Road, New Dreams' proposals for the development of two historic trading routes: the New Silk Road over land and the New Maritime Silk Road by sea. China wants to invest 40 billion dollars in ports, terminals and infrastructure. Two working groups at the Clingendael Institute are investigating the economic and geopolitical significance of these new Chinese silk roads. DGMI asked KiM to compile, in stages, an integrated study of this topic from a ministry-wide perspective. What is the importance of these developments for infrastructure investments in the EU and in the Netherlands? What are the potential threats to the Netherlands and the opportunities for Dutch businesses of these infrastructure investments? At the end of 2015 KiM held a meeting in which it discussed all the different perspectives on these developments with the relevant parties and defined the scope of the research. It may be possible to combine this research with project MM1403.</p>

Projects	
DGB Maritime Affairs Research project, BR1608, medium, second quarter	Trends in the modal split trend in freight transport lenM is regularly asked about the trend in the modal split share of inland shipping. To be able to respond to such requests and to gain insight into the possibilities for and constraints on steering change in the modal split, KiM will analyse the modal split in freight transport, looking specifically at the trend per distance class. The European Commission's White Paper contains ambitious objectives for a shift from road to rail and inland shipping for distances greater than 300 kilometres. A better understanding of trends in transport per distance class is also desirable. Are the distances in the road haulage industry really declining or is this a consequence of a shift from Dutch to foreign hauliers? This study is needed to better understand the possibilities for and difficulties of managing these trends.

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

KiM regularly carries out small knowledge-at-the-table activities related to this topic within the core theme. The emphasis in these activities is on answering questions about national and international trends in mobility and accessibility 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 and accessibility policy

A primary objective of national transport and traffic policy is to improve accessibility. This is the subject of this topic within the core theme, which focuses on the development and application of knowledge for operationalising the concept of accessibility. It includes further translating 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 by adapting the transport system and the physical structure of surrounding areas. In addition to research to identify points of leverage for new policy, this topic includes assessing the effects on the accessibility objectives of the broad range of policy options from the Accessibility Agenda (innovate, invest, maintain, inform and design).

Projects	
DGB Public Transport and Rail Research project, BR1505, medium, starting third quarter	Quality aspects of the chain approach In various policy processes there is a demand for knowledge on quality aspects associated with the chain approach and door-to-door travel. The project 'Bicycle plus public transport' (MG1507), which has already started, provides some answers to these questions, with a focus on the role of cycling in the transport chain. In consultation with the client, KiM will investigate which other quality aspects in the chain deserve further attention. Potential candidates include questions about the change-over between different public transport systems and the valuation of comfort features across the chain (for example while waiting and changing over) and possibilities for making good use of travel time, or the lack of them.

Projects	
<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 lenM'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). In 2016 the emphasis will be on contributing to the Future of Public Transport process.</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 the effects of policy measures 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 modalities cannot yet be quantified in the cost-benefit analysis. This project is a first step towards making a rough assessment of these effects. Cooperation will be sought with other organisations, including ProRail, CPB and TU Delft. Knowledge may also be obtained from relevant research projects of the US Transportation Research Board's Strategic Highway Research Program (SHRP2). This project may also provide input to project MM1407 to allow reliability to be included in an indicator for door-to-door accessibility.</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 Infrastructure Efficiency Programme 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: the degree of 'teleworking'. 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>DGMI International Affairs Knowledge at the Table, BB1204, small, ongoing</p>	<p>Contribution to lenM TEN-T policy team KiM is contributing to the ministry-wide Trans-European Transport Network (TEN-T) policy team with knowledge at the table on infrastructure planning, transport development and appraisal methods. KiM may be asked to assist with assessing new applications for TEN-T subsidies.</p>
<p>DGRW Policy Analysis Knowledge at the Table, BR1421 small, ongoing</p>	<p>Knowledge input to the preparation of the National Environmental Strategy KiM's expertise can be of use in the preparation of the National Environmental Strategy. Relevant questions include what can mobility contribute to the Environmental Strategy and what insights from the available KiM research are relevant for use in preparing the Environmental Vision? Such knowledge could be made available through the participation of KiM staff in one or more working meetings organised by the Directorate-General for Spatial Development and Water Affairs (DGRW).</p>
<p>DGB Infrastructure Efficiency Programme Research project, BR1604, medium, second quarter</p>	<p>Use of the 'waterfall method' for estimating effects in the Infrastructure Efficiency Programme 2 The aim of this project is to use KiM's 'waterfall method' to help with the evaluation of the next phase of the Infrastructure Efficiency Programme (BB2). The waterfall method was used in the first phase of the Infrastructure Efficiency Programme to explain loss of journey time on the road network and to determine the effects of measures and other factors on changes in loss of journey time. The next phase of the Infrastructure Efficiency Programme will work with a different target variable than loss of journey time. Whether or not the method can be used to explain changes in this new variable, or can be adapted to do so, will have to be investigated.</p>

Projects	
DGB Civil Aviation Department Research project, BR1605, medium, first quarter	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. KiM research in 2013 shows that many Dutch 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 will investigate any changes in the propensity to fly among the Dutch population, using the results of the previous study as a baseline measurement.
DGB Civil Aviation Department Research project, BR1606, small, first quarter	New forms of transfer ‘Self-hubbing’ appears to be gaining in popularity. Some airports facilitate this, for example by offering a transfer insurance. In this project KiM will identify new forms of transfer, establish how widespread they are, and examine the possible implications for Schiphol and KLM.
DGB Civil Aviation Department Knowledge at the Table, BR1607, small, ongoing	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 which of these are exogenous (cannot be influenced) and which are endogenous (can be influenced).
DGB Roads and Traffic Safety / DGRW Policy Analysis Research project, BR1609, medium, second quarter	The first and last mile in passenger road transport There is an impression that beyond a certain point additional investments in the main road network serve no useful purpose because traffic into and out of the cities will grind to a halt. This part of the trip is sometimes called ‘the last mile’. For passenger road transport, the last mile is all about how to manage mobility in and around the main towns and cities. This project could be tackled in several different ways. One approach would be to make an inventory of creative ideas and measures that have been proposed in the Netherlands and abroad to facilitate the first and last miles in passenger, and possibly also freight, transport. An alternative would be to look for a common thread running through studies for the Multi-Year Plans for Infrastructure, Spatial Planning and Transport (MIRT) – such as urban accessibility in Amsterdam (<i>Stedelijke Bereikbaarheid Amsterdam</i>) – by identifying specific accessibility problems and what solutions are likely to work. A specific element in this research question (use of the bicycle for travel to and from public transport) is addressed in the ‘Bicycle plus public transport’ project (MG1507).
DGB Infrastructure Efficiency Programme / DGB Strategy Unit Research project, BR1610, medium, first quarter	Mobility effects of relocating IenM to Rijnstraat The relocation of IenM to Rijnstraat raises the question of how this will affect the travel-to-work distances and times of the staff. A similar study was carried out in 1992 when the decentralised offices moved to the old Ministry of Housing, Spatial Planning and the Environment building in the Rijnstraat. The results were used in a letter to parliament and in various publications. This study should be linked to the Infrastructure Efficiency Programme for the Haaglanden city-region of The Hague. A suggested research method is to select a representative panel from the IenM staff to obtain ex ante and ex post information on their travel behaviour.
DGB Strategy Unit Knowledge at the Table, BR1611, small, first quarter	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 2016 for knowledge input to two rounds of the National Market and Capacity Analysis. This will not involve additional research, but will consist of providing knowledge at the table for various sub-studies.

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 2016	BR1601	Research project	1 st quarter	Large
DGB Strategy Unit	Uncertainty study	BR1418	Research project	Ongoing	Medium
DGB Public Transport and Rail	Radical innovations and modern technologies in the public transport system	BR1506	Research project	Ongoing	Medium
DGB Roads and Traffic Safety	Impact on society of the autonomous car	BR1406	Research project	Ongoing	Large
DGMI International Affairs	Contribution to the IenM policy team Horizon 2020	OG1208	Knowledge at the Table	Ongoing	Small
DGB Strategy Unit	The role of parking in the mobility system	BR1602	Research project	1 st quarter	Medium
DGB Maritime Affairs	Effects of the North Pole route on the strategic position of seaports and maritime shipping	MM1403	Research project	1 st quarter	Medium
DGMI International Affairs	Study of the importance/effect of China's New Silk Road for IenM	BR1518	Research project	Ongoing	Medium
DGB Maritime Affairs	Trends in the modal split in freight transport	BR1608	Research project	2 nd quarter	Medium
DGB Public Transport and Rail	Quality aspects of the chain approach	BR1505	Research project	3 rd quarter	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	Estimating the effects of policy measures on public transport reliability	BR1405	Research project	Ongoing	Medium
DGB Roads and Traffic Safety	Review of the evaluation method for the Amsterdam Traffic Management Trial	BB1112	Knowledge at the Table	Ongoing	Small
DGB Infrastructure Efficiency Programme	Effects of flexible working on congestion – 2 nd phase	BR1328	Research project	Ongoing	Medium
DGMI International Affairs	Contribution to the IenM TEN-T policy team	BB1204	Knowledge at the Table	Ongoing	Small
DGRW Policy analysis	Knowledge input to the preparation of the National Environmental Strategy	BR1421	Knowledge at the Table	Ongoing	Small
DGB Infrastructure Efficiency Programme	Use of the 'waterfall method' for estimating effects in the Infrastructure Efficiency Programme 2	BR1604	Research project	2 nd quarter	Medium
DGB Civil Aviation Department	Follow-up study on propensity to fly among the Dutch	BR1605	Research project	1 st quarter	Medium
DGB Civil Aviation Department	New forms of transfer	BR1606	Research project	1 st quarter	Small
DGB Civil Aviation Department	Schiphol catchment area	BR1607	Knowledge at the Table	Ongoing	Small
DGB Roads and Traffic Safety	The first and last mile in passenger road transport	BR1609	Research project	2 nd quarter	Medium
DGB Infrastructure Efficiency Programme	Mobility effects of relocating IenM to Rijnstraat	BR1610	Research project	1 st quarter	Medium
DGB Strategy Unit	Knowledge input to the National Market and Capacity Analysis	BR1611	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 different 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 making policy, 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 In the past KiM has on several occasions examined the mobility effects of socio-demographic and socio-cultural 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 question of 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). Based on these data, KiM will be able to compile several thematic reports investigating diverse socio-demographic and socio-cultural aspects.
DGB Strategy Unit Research project, MG1503, medium, starting fourth quarter	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 public spaces. What do these developments mean for mobility? 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 in the Northern Netherlands and Zeeland project (MG1508) and the 'City, "hinterland" and mobility: spatial and social divergence of patterns and trends' project (MG1602).
DGB Roads and Traffic Safety Research project, MG1506, medium, starting first quarter	Behaviour and urban deliveries This project elaborates on the 'behavioural change' part of the 2015 KiM Urban Distribution project (BR1508). The behavioural interventions identified in that project deserve further investigation. This will be done in three stages. The first is a more in-depth analysis of the identified best practices. Four to six cases will be discussed in working sessions with behavioural experts. The second stage will be an actor and behaviour analysis of two cases in the Netherlands. The third stage will involve the design of possible interventions to change people's behaviour and a reflection on other possible roles of government. In this last step new and existing interventions to change people's behaviour (such as those identified in 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 make use of the insights of experts in the field.

Projects	
<p>DGB Strategy Unit Research project, MG1601, medium, starting first quarter</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 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 travel by 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, starting third quarter</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 socio-demographic and spatial data suggest that the use of transport modes in urban areas is determined to a great extent by the socio-demographic composition of the population (see Mobility Report 2015). There are indications that these socio-demographic 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 method 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 will be approached to cooperate in the implementation of this project.</p>
<p>DGRW Regional and Project Development Research project, MG1508, medium, starting first quarter</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 further reduced and, despite the 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 main areas of population decline. The update of the 2010 study will deepen the analysis with specific attention to the areas in the Northern Netherlands and Zeeland where the population is already declining and areas 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 their 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 to be investigated include the following:</p> <ul style="list-style-type: none"> • What proportion of travel to and from the train is by bicycle for the different trip types (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 will draw mostly on existing information (literature, available data). In addition, case studies in various cities and regions will examine in more depth the behaviour of people who make use of the bicycle in combination with public transport, and the variables that influence their behaviour.</p>

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

KiM regularly carries out small knowledge-at-the-table activities related to 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 Strategy Unit	Senior citizens and mobility	MG1503	Research project	4 th quarter	Medium
DGB Roads and Traffic Safety	Behaviour and urban deliveries	MG1506	Research project	1 st quarter	Medium
DGB Strategy Unit	Experience and perceptions 10 years on	MG1601	Research project	1 st quarter	Medium
DGB Strategy Unit	City, 'hinterland' and mobility: spatial and social divergence of patterns and trends	MG1602	Research project	3 rd quarter	Medium
DGRW Regional and Project Development	Population decline and mobility with a focus on the Northern Netherlands and Zeeland	MG1508	Research project	1 st quarter	Medium
DGB Public Transport and Rail	Bicycle plus public transport	MG1507	Research project	Ongoing	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 EU 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. In fact, safety also falls under the broad approach to sustainability mentioned above. 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 shows which concrete projects (research projects and knowledge at the table) KiM will be undertaking in 2016 to provide answers to these research questions.

Projects	
DGMI Climate, Air and Noise Research project, DT1501, medium, ongoing	Global trends in oil In this project KiM is examining global trends in oil and the refining of oil into diesel and petrol to identify the consequences for the transport sector (e.g. for supply, demand and external effects) from both a Dutch and European perspective.

Projects	
<p>DGMI Climate, Air and Noise Knowledge at the Table, DT1306, small, ongoing</p>	<p>Fuel mix strategy In 2014 a Sustainable Fuel Mix Strategy for the future was developed under the SER Energy Agreement for Sustainable Growth. IenM is following this up with an action agenda containing concrete actions for the short term, particularly in the form of Green Deals. Where relevant, KiM is contributing to this project with knowledge at the table. A concrete part of this project is a review by KiM of the proposal made by Rijkswaterstaat for monitoring the implementation of the fuel mix strategy.</p>
<p>DGMI Climate, Air and Noise Knowledge at the Table, DT1514, small, ongoing</p>	<p>International comparison of sustainable mobility policy (CO₂) KiM is compiling an overview of the policies being pursued in a number of surrounding countries for reducing CO₂ emissions by traffic: what objectives do they have and what policies – such as fiscal policy, legislation, investment and innovation subsidies – are they pursuing? Developments are in a state of flux and how other countries shape their mobility policy can be a source of ideas for Dutch policy in this area.</p>
<p>DGMI Climate, Air and Noise Knowledge at the Table, DT1601, small, starting first quarter</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 particulate matter and NO_x emissions by traffic: 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 in this area available at the National Institute for Public Health and the Environment (RIVM).</p>
<p>DGB Public Transport and Rail Knowledge at the Table, DT1602, small, starting first quarter</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 will draw 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>
<p>DGMI Climate, Air and Noise Research project, DT1603, medium, starting second quarter</p>	<p>Tyre pressure: what behaviour is relevant? Keeping car and lorry tyres at the right pressure would appear to be a good way to reduce environmental impact while at the same time delivering a financial benefit to the vehicle user. A number of ‘no regret’ actions are already being introduced to take advantage of this potential, but for an effective campaign we need to know more about why drivers are apparently not willing to take them up, given the financial benefits. What aspects of behaviour should the policy measures address to be successful? To answer these questions KiM will draw on the expertise within the Behavioural Insight Team (BIT).</p>
<p>DGMI Climate, Air and Noise Research project, DT1604, medium, starting first quarter</p>	<p>Lessons from the Green Deal for sustainable mobility Green Deals are increasingly being used to achieve policy objectives for sustainable mobility. Drawing on information about several existing Green Deals in the field of mobility – such as those on charging points, zero emission buses and urban logistics – we will investigate the success and failure factors of the Green Deal approach. Specifically, we will seek answers to the following questions:</p> <ul style="list-style-type: none"> • For which types of objectives/effects is the Green Deal approach a suitable (effective, efficient) instrument and for which is it less suitable or unsuitable? • What must be known about the transport market in order to make a good Green Deal, and how can this knowledge be obtained? • What is a successful Green Deal and what conditions are needed for a successful Green Deal? • What indicators can be used to monitor Green Deals?

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 table of university courses in the field of sustainable mobility.

3.3 Project overview table

Department	Title	Number	Project Type	Start	Size
DGMI Climate, Air and Noise	Global trends in oil	DT1501	Research project	Ongoing	Medium
DGMI Climate, Air and Noise	Fuel mix strategy	DT1306	Knowledge at the Table	Ongoing	Small
DGMI Climate, Air and Noise	International comparison of sustainable mobility policy (CO ₂)	DT1514	Knowledge at the Table	Ongoing	Small
DGMI Climate, Air and Noise	International comparison of sustainable mobility policy (particulates, NO _x)	DT1601	Knowledge at the Table	1 st quarter	Small
DGB Public Transport and Rail	Knowledge infrastructure for rail safety	DT1602	Knowledge at the Table	1 st quarter	Small
DGMI Climate, Air and Noise	Tyre pressure: what behaviour is relevant?	DT1603	Research project	2 nd quarter	Medium
DGMI Climate, Air and Noise	Lessons from the Green Deal for sustainable mobility	DT1604	Research project	1 st quarter	Medium

4

Models and Data

4.1 Explanation of the core theme

The quality of answers to just about every research question in the field of transport and traffic depends on the quality of the underlying data. The quality of data on historical and current trends in transport and traffic depends on standard data collection procedures; the quality of data relating to future developments depends on 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 in the field of 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 show per topic which concrete activities KiM will be undertaking in 2016 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 in the field of 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 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 data collection is done by KiM and other organisations, including Statistics Netherlands, Rijkswaterstaat Central Information Services (RWS CIV) and Rijkswaterstaat Water, Traffic and Environment (RWS WV). 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 implemented in cooperation with Goudappel Coffeng and the University of Twente, and with the involvement of RWS WV and PBL Netherlands Environmental Assessment Agency. In autumn 2015 the third wave survey was carried out and data from the first wave was made available to third parties. The fourth wave survey will be conducted in the autumn of 2016. A decision has been taken to continue the MPN for the period from 2017 to 2020. The fieldwork for this period will be contracted out under EU rules in 2016. During 2016 data from the MPN will be used in various KiM projects (including projects MG1501, MG1502 and BR1601).</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 North-West European hubs 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 national government Elaborating 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>
<p>DGB Strategy Unit Knowledge at the Table, DM1113, small, ongoing</p>	<p>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 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 and complements the Mobility Report (see Mobility Report 2016; BR1601). The MIR 2016 will include the accessibility indicator for road transport, which will be calculated using the most recent available data.</p>

Projects	
<p>DGB Strategy Unit Knowledge at the Table, DM1401, large, ongoing</p>	<p>Contribution by KiM to OViN Innovation Research 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 will examine improvements to the existing data collection process (approaching respondents, questionnaires, data processing) and more innovative concepts like big data (including the public transport smart card) and new collection methods (automatic tracking of people via smartphones or GPS loggers, surveys via internet and apps, etc.). KiM is making an active contribution to this innovation research. In 2016 the emphasis will be on research into the practical value of public transport smart card data and two pilot projects on new collection techniques (GPS loggers and smartphones).</p>
<p>DGB Roads and Traffic Safety / DGB Strategy Unit Research project, DM1501, medium, ongoing</p>	<p>Validation of various congestion indices The media regularly publish lists of information about 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 (Netherlands Organisation for Applied Scientific Research), 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 Strategy Unit Knowledge at the Table, DM1508, small, ongoing</p>	<p>Updating statistics on the use of delivery vans There is a growing demand (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)) for statistical information on delivery vans. 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 are in the vans? These are just a few of the important questions underpinning the information needs. At the moment Statistics Netherlands does not have the capacity to describe this important part of national freight transport (in tonnage larger than rail freight and in kilometres twice as much as the large haulage vehicles) with any certainty. As the demand for statistics on transport by delivery vans has risen considerably, it is proposed that from 2016 Statistics Netherlands adopts a new collection strategy with a larger sample size and higher sampling frequency (once every two years).</p>
<p>DGB Strategy Unit Research project, DM1601, medium, starting first quarter</p>	<p>Further development of the accessibility indicator for bicycle trips The accessibility indicator (AI) can be used for monitoring (based on measured/reported journey times) and identifying problems (journey times from models). A few years ago the AI for bicycle trips and public transport could not be accurately determined. This project will develop an AI for bicycle trips. A separate project has been set up for public transport (MM1407). Calculating the AI for monitoring purposes requires empirical data. The study will identify the data sources that are available or can be made available, or which will have to be obtained in order to determine the AI for bicycle trips. For problem identification purposes the study will investigate what information can be obtained from which models in order to determine the AI. For public transport there is the additional question of how, besides travel time (on which the AI is now based) reliability can be included in the calculation.</p>
<p>DGB Public Transport and Rail Research project, MM1407, medium, ongoing</p>	<p>Indicators of door-to-door accessibility by public transport Indicators of door-to-door accessibility by public transport are needed for two purposes. The first is to allow national government, as the body responsible for the transport system as a whole, to adequately monitor the ability of public transport to provide door-to-door accessibility. The second is to stimulate transport operators, as part of effective concession agreements, to improve the quality of door-to-door trips by public transport and to make it clear what their input should be. This project will describe possible indicators for door-to-door accessibility, put forward criteria for evaluating the suitability of these indicators, and carry out this evaluation. For public transport there is the additional question of how, besides travel time (on which the accessibility indicator (AI) for road traffic is now based), reliability can be included in the calculation. The emphasis is on quantitative long-term indicators with a national coverage. The study will identify the data sources that are available or can be made available, or which will have to be obtained, in order to determine the AI for public transport.</p>

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

KiM delivers expertise 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 at the level of the Benelux and exchanging knowledge with the Analysis department at the Human Environment and Transport Inspectorate (ILT).

4.3 Transport and traffic models

Transport and traffic models make an important input to the development of policy. In ex ante evaluations of policy measures the policy effects of interest are almost always revealed by using models. These models are continually being adjusted in the light of new information, understanding and technical advances. 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 be 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 lenM project on integration and governance models, 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	
DGB Strategy Unit Knowledge at the Table, DM1106, medium, ongoing	Support for the Integration and Governance Models project In the lenM project Integration and Governance Models KiM is working to improve the steering of mobility and accessibility model development, 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. At the core of the project is the implementation of the Improvement Programme models under the coordination of Rijkswaterstaat. This programme incorporates KiM's Uncertainty Analysis. KiM is participating in the project's steering and preparatory group and provides knowledge to various subprojects within the Improvement Programme.
DGB Infrastructure Efficiency Programme Research project, DM1602, medium, starting third quarter	Analysis of goods vehicles in traffic queues Bundling of cargo flows and other means can be used to make more efficient use of lorries, vans or other vehicles and reduce the number of vehicle kilometres driven to provide the same haulage service. For the Infrastructure Efficiency Programme this study will investigate the effect on the length of traffic queues of increasing and reducing the volume of freight traffic, particularly lorries and vans. One aspect of the study is the limited information about the use of delivery vans, despite the fact that they make up a relatively large proportion of all goods traffic. The shift from traditional deliveries to shops to home deliveries being driven by the growth of online shopping makes it imperative to know more about the role of goods vehicles in traffic congestion and the use of delivery vans.

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

KiM regularly carries out small knowledge-at-the-table activities related to 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 Civil Aviation Department	Factsheet on aviation data	E928	Research project	Ongoing	Small
DGB Public Transport and Rail	Considering the data needs of 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	Contribution by KiM to OViN Innovation Research	DM1401	Research project / Knowledge at the Table	Ongoing	Large
DGB Roads and Traffic Safety	Validation of various congestion indices	DM1501	Research project	Ongoing	Medium
DGB Strategy Unit	Updating statistics on the use of delivery vans	DM1508	Knowledge at the Table	Ongoing	Small
DGB Strategy Unit	Further development of the accessibility indicator for bicycle trips	DM1601	Research project	1 st quarter	Medium
DGB Public Transport and Rail	Indicators of door-to-door accessibility by public transport	MM1407	Research project	Ongoing	Medium
DGB Strategy Unit	Support for the Integration and Governance Models project	DM1106	Knowledge at the Table	Ongoing	Medium
DGB Infrastructure Efficiency Programme	Analysis of goods vehicles in traffic queues	DM1602	Research project	3 rd quarter	Medium

5

Social Importance, the Role of Government and Market Organisation

5.1 Explanation of the core theme

Prime Minister Mark Rutte's second government places great importance on the economic competitiveness of the Netherlands and the need for good accessibility as an essential requirement for this. Given this position, the government policies has devoted much effort to developing policies to support the development of the 'mainports' of Rotterdam and Schiphol Airport and more generally the urban regions. The government also emphasises the need for a compact, strong and service-oriented government, which requires a clear demarcation of tasks and responsibilities.

These themes have increasingly come under the spotlight over 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 broader interest? What is the function of the major transport hubs, such as the mainports? 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 recent dialogue with the policy directorates has led to the formulation of a number of research questions on these two topic. The following sections show per topic which concrete projects (research projects and knowledge at the table) KiM will be undertaking in 2016 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 the field of 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 Civil Aviation Department Research project, MM1402, small, starting fourth quarter	The economic value of low-cost carrier operations Low-cost carrier operations make up about 25% of all intra-European operations. They have improved the accessibility of many smaller and also some larger airports in Europe by adding more destinations, lowering prices and raising flight frequencies. This project will analyse the economic value of these low-cost carrier connections for certain airports, regions and the Netherlands as a whole. An important part of the approach to this study will be enlisting the aid of the Airneth network via an Airneth seminar.
DGB Maritime Affairs Knowledge at the Table, MM1601, medium, starting first quarter	Impact of mega-ships The OECD has published a study on the impact of mega-ships in terms of the consequences for ports and hinterland transport. The Maritime Affairs directorate has asked KiM to consider the assumptions underlying this study and the consequences for the Netherlands, for example for the allocation of the costs of any adaptations that have to be made to the infrastructure.
DGB Maritime Affairs Knowledge at the Table, MM1511, small, ongoing	Future distinguishing competitive factors of the Netherlands The Maritime Affairs directorate has commissioned research into the competitive factors which can in future set the Netherlands apart from other countries, and what part the seaports will play in this. KiM is involved in the supervision of this research project.
DGB Roads and Traffic Safety Research project, MM1602, medium, starting second quarter	Consequences of motorway tolls in neighbouring countries This study will investigate the consequences for the Netherlands of the introduction of motorway tolls in Belgium and Germany. It will look at pressures on the road network and the economic effects. We will conduct a literature study and then determine any necessary additional research activities needed to obtain the required insights.
DGB Public Transport and Rail Research project, MM1603, medium, starting second quarter	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 frequent loss of passengers and freight (to other routes or departure times, other carriers or cancellation altogether).

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 economic effects of policy.

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.

This topic also includes 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 Civil Aviation Department Knowledge at the Table, MM1503, small, starting third quarter	Possibilities for a selectivity policy for Schiphol In this project KiM will contribute to the discussion on the details of the selectivity policy for Schiphol Airport. What instruments are available and what are their advantages and disadvantages? Examples of possible instruments are the pricing and trading of slots, price differentiation between airports, improvements to infrastructure, facilitating travel to and from public transport, and such like.
DGB Public Transport and Rail Research project, MO1201, medium, starting first quarter	Increasing the market responsiveness of public transport Central government may be able to make public transport more responsive to the needs of the customer by removing constraints and barriers and by taking measures to facilitate a more market-oriented approach. The focus is on the following questions: <ul style="list-style-type: none"> • Why do innovative initiatives not get off the ground? • What are the obstacles within the existing market organisation, legislation and practice? • What are the opportunities and threats if innovative initiatives are given room to develop? The effects of a wholly new market organisation are outside the scope of this project. The project builds in part on project BR1506: 'Radical innovations and modern technologies in the public transport system'. This will provide a picture of the type of demand and possible innovations.
DGB Public Transport and Rail Knowledge at the Table, MM1512, small, ongoing	Dashboard sessions on door-to-door accessibility Dutch Railways (NS) 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.
DGB Roads and Traffic Safety Knowledge at the Table, MM1411, medium, ongoing	Social priorities for replacement and renovation projects It is expected that in the near future a large number of engineering structures in the nation's transport infrastructure will need to be replaced. Unfortunately, the available budget is insufficient to meet these requirements in full. Rijkswaterstaat is currently taking a structured welfare economics approach to this issue for hydraulic engineering structures (VONK replacement project) and flood protection (RINK risk inventory project). A similar approach for roads has not yet been started. KiM has prepared a memorandum containing practical options to be prioritised on the basis of the costs and benefits to society. This will be taken forward in 2016. In addition, KiM will be providing knowledge at the table on an ad hoc basis to help the Directorate-General for Mobility and Transport prioritise the replacement needs.
DGB Civil Aviation Department Research project, MM1604, medium, starting first quarter	Tariff structure and tariff differences between airports The debate launched by Airneth about a level playing field with regard to state aid can be improved by providing clear information about tariff structures operated by airports and the differences between airport tariffs, such as the benchmark airport charges. KiM will analyse the available information.
DGB Maritime Affairs Knowledge at the Table, MM1605, small, starting third quarter	Work programme on seaports This work programme comes to an end in 2016. KiM has reserved time to consider how to follow this up.

Projects	
DGB Public Transport and Rail Research project, BR1507, small, ongoing	Bicycle parking charges Under the action plan for bicycle parking, the Directorate-General for Mobility and Transport needs to have an initial indication of the possibilities for paying for bicycle parking, either by the consumer or by other beneficiaries of these facilities. This includes the wider public interests of sustainability and quality of life. Can values be put on these and who can pay for them? KiM's research is generating insights into the possibilities and constraints on compiling a business case and, as far as possible, to the consequences of payments by consumers or other beneficiaries.

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 analysis of distinguishing competitive factors from the perspective of seaports and the design of public transport service and management concessions.

5.4 Project overview table

Department	Title	Number	Project Type	Start	Size
DGB Civil Aviation Department	The economic value of low-cost carrier operations	MM1402	Research project	4 th quarter	Small
DGB Maritime Affairs	Impact of mega-ships	MM1601	Knowledge at the Table	1 st quarter	Medium
DGB Maritime Affairs	Future distinguishing competitive factors of the Netherlands	MM1511	Knowledge at the Table	Ongoing	Small
DGB Roads and Traffic Safety	Consequences of motorway tolls in neighbouring countries	MM1602	Research project	2 nd quarter	Medium
DGB Public Transport and Rail	The social costs of unreliable rail services	MM1603	Research project	2 nd quarter	Medium
DGB Civil Aviation Department	Possibilities for a selectivity policy for Schiphol	MM1503	Knowledge at the Table	3 rd quarter	Small
DGB Public Transport and Rail	Increasing the market responsiveness of public transport	MO1201	Research project	1 st quarter	Medium
DGB Public Transport and Rail	Dashboard sessions on door-to-door accessibility	MM1512	Knowledge at the Table	Ongoing	Small
DGB Roads and Traffic Safety	Social priorities for replacement and renovation projects	MM1411	Knowledge at the Table	Ongoing	Medium
DGB Civil Aviation Department	Tariff structure and tariff differences between airports	MM1604	Research project	1 st quarter	Medium
DGB Maritime Affairs	Work programme on seaports	MM1605	Knowledge at the Table	3 rd quarter	Small
DGB Public Transport and Rail	Bicycle parking charges	BR1507	Research project	Ongoing	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 in the field of infrastructure and spatial planning is social cost-benefit analysis (SCBA). However, SCBA raises discussion because it sometimes draws too much attention to the balance of costs and benefits and its relation 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 need to be examined further.

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 ‘smart’ accessibility measures means the demand for second opinions on construction projects is falling. Nevertheless, for 2016 there are still a significant number of research questions on these three topics. The following sections show per topic which concrete projects (research projects and knowledge at the table) KiM will be undertaking in 2016 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. Despite the fact that 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 mobility 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 SCBAs must be updated. The list of valuation ratios is maintained by the SEE Support Desk for Economic Evaluation at Rijkswaterstaat Water, Traffic and Environment (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 (other department 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. KiM is now delivering knowledge at the table to support the implementation of adaptive policy in the Multi-Year Plan for Infrastructure, Spatial Planning and Transport (MIRT). An important topic is the relation with the new approach to accessibility. This is being developed through agenda-setting memorandums on diverse aspects of adaptivity, such as dealing with uncertainty in infrastructure planning.
Finance, Management and Control (other directorates 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 Netherlands Bureau for Economic Policy Analysis (CPB), PBL Environmental Assessment Agency and RWS WVL. In 2016 these questions will include issues concerning the consequences of the new Welfare, Prosperity and Quality of the Living Environment (WLO) scenarios for real price increases in various valuation ratios and the valuation of travel comfort in SCBAs.
Finance, Management and Control Research project, EA1503, small, starting first quarter	Scope and procedure for second opinions Second opinions on SCBAs often differ in their scope and how they are produced. Should second opinions include suggestions for alternatives? Should the calculations be repeated? Or should they just say what is correct and what is not? A set of guidelines would clarify the role and status of second opinions. In preparation for the new framework CBA for the studies for the MIRT, KiM will draw up a guidance document with other relevant organisations, including CPB, PBL, Rijkswaterstaat and the Ministry of Finance.
DGRW Regional and Project Development Knowledge at the Table, EA1601, medium, starting second quarter	Update of the Framework CBA for MIRT studies The Framework CBA for MIRT studies (studies for the Multi-Year Plan for Infrastructure, Spatial Planning and Transport) contains formats and rules for the use in CBAs of standard MIRT projects. The framework will be updated in 2016 to include the latest agreements and methodological developments and insights. KiM will be involved in the supervision of this update. KiM will also work out the details of including projects of national importance and seaports and airports in this format, which was originally intended only for standard projects.

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 ad hoc contributions to the development of assessment frameworks. In 2016 a start will be made with an analysis of the marginal costs of public funds for the Ministry of Finance. KiM will be involved via the SCBA core team.

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 making knowledge about SCBAs and other assessment frameworks ready for use and aspires to continue in this role in future. 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	
Finance, Management and Control (other directorates involved: DGB, DGRW, DGMI) Knowledge at the Table, E712, small, ongoing	Communication on SCBA KiM is making information on SCBA available for presentations and reports and contributes to conferences and courses in this area.
Finance, Management and Control (other directorates involved: DGB, DGRW, DGMI) Knowledge at the Table, E712, small, ongoing	Secretariat of the inter-departmental SCBA core team KiM runs the secretariat of the inter-departmental SCBA core team.
Finance, Management and Control (other directorates involved: DGB Strategy Unit, DGMI, DGRW), Knowledge at the Table, EA1507, medium, ongoing	Follow-up working group on the discount rate In 2015, on behalf of IenM, KiM made an input to the inter-departmental working group on the discount rate. The results have now been incorporated into a government paper, which announces the rollout of the use of the new discount rate within IenM. KiM is writing a memorandum on how this rollout can be implemented. In addition, KiM and Rijkswaterstaat Water, Traffic and the Environment are preparing answers to a list of practical questions from project managers.
DGB Strategy Unit Research project, EA1604, medium, starting first quarter	Study on pre-analysis of the efficiency of investments in infrastructure Before specific solutions can be assessed for their effects on welfare in SCBAs, there is a need for an instrument to identify promising projects with potentially positive welfare effects. In the current procedure for the MIRT, during the MIRT studies phase the National Market and Capacity Analysis identifies projects with adverse traffic implications. At that stage there is often no indication of the social costs and benefits of the project. The proposed instrument could provide the answer. In other words, this study is about how to assess infrastructure and other development projects for welfare efficiency and about the possibility of indicating a necessary future level of investment (financial) without making any direct link with specific investments. In this study KiM will review the available studies and information relevant to the subject, such as Planning for the City by CPB/PBL, SCBA guidance for area development and various existing assessment frameworks for individual projects. We will also look at SCBA best practices at the programme level to see whether or not SCBAs can be made at an even higher level of abstraction. Indicative SCBAs can already be prepared for programmes which set out the objectives to be aimed for but contain no specific measures or projects. A disadvantage is that the absence of information on the type of measures means that little will be known about costs and that side-effects can only be estimated in qualitative terms or via indicators. We will then conduct about ten interviews with experts to include their visions on this issue in the study of the possibilities. The result of the study will be an inventory of the possibilities, ideas and any concrete follow-up steps.

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 have important advantages. 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 (other department involved: DGB Roads and Traffic Safety) Research project, EA1505, medium, starting first quarter</p>	<p>Quick scan of existing knowledge about the effects of price incentives In 2016 KiM expects there will be renewed interest in pricing policy. Pricing policy is an effective way of influencing mobility choices. KiM is making an inventory of recent knowledge (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 (other directorates 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"> - N65 main road - Amsterdam–Hoorn corridor - VIA A15 motorway - A67 motorway, Eindhoven–Geldrop (2017)
<p>Finance, Management and Control (other directorates 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 2016 this is expected to be required for the following topics:</p> <ul style="list-style-type: none"> - National Cooperative Air Quality Programme (NSL) - Maritime shipping, seaports and inland shipping (see below)
<p>DGB Maritime Affairs Research project, EA1510, medium, starting first quarter</p>	<p>Assessment of policy audit of Article 18 maritime shipping, seaports and inland shipping The policy audit of Part XII Article 18 is planned for 2016. The audit is of national policy for maritime shipping, seaports and inland shipping. The policy audit will be carried out by external consultants. KiM will assess the methodology and the quality of execution of the audit.</p>
<p>DGB Public Transport and Rail Knowledge at the Table, EA1602, small, starting second quarter</p>	<p>Comparison of SCBAs of railway electrification In this knowledge-at-the-table project KiM will review several SCBAs on the electrification of railway lines to obtain insight into the distinction between situational and methodological differences. The aim is to make SCBAs on these types of project more consistent.</p>

Projects

Finance, Management and Control (other directorates involved: DGB Roads and Traffic Safety, DGB Public Transport and Rail, DGB Civil Aviation Department, DGB Maritime Affairs)

Research project, EA1603, medium, starting second quarter

Overview of evaluation methods and monitoring agreements for all types of mobility measures

Experiences with ex ante and ex post evaluation monitoring at IenM, especially with SCBA, during the last 15 years has been mainly of investment projects for the construction of infrastructure. However, there has been shift towards other types of policy instruments and interventions in which projects are increasingly carried out with partners in the region. This presents new challenges to policy evaluation and the necessary impact studies.

In this project KiM will review 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. This information will be used to compile our own assessment framework for traffic management. Local and regional public transport projects also work with their own methodologies and procedures.

These methods will be compared and contrasted to identify best practices, obtain a clear picture of what assessment methodologies and monitoring agreements there are, and determine the range of decision information required by KiM's clients. At the same time, we will improve the consistency of approach between the various measures and contribute to the development of IenM as a learning organisation by sharing best practices between departments.

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

KiM regularly carries out small knowledge-at-the-table activities for this topic area. For example, KiM is regularly involved in the further development of the set of key figures and indicators for the 'responsible budgeting' system. 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
Finance, Management and Control	Various generic questions on SCBA methodology	EA1102	Knowledge at the Table	Ongoing	Small
Finance, Management and Control	Scope and procedure for second opinions	EA1503	Research project	1 st quarter	Small
DGRW Regional and Project Development	Update of the Framework CBA for MIRT studies	EA1601	Knowledge at the Table	2 nd quarter	Medium
Finance, Management and Control	Communication on SCBA	E712	Knowledge at the Table	Ongoing	Small
Finance, Management and Control	Secretariat of the inter-departmental SCBA core team	E712	Knowledge at the Table	Ongoing	Small
Finance, Management and Control	Follow-up working group on the discount rate	EA1507	Knowledge at the Table	Ongoing	Medium
DGB Strategy Unit	Study on pre-analysis of the efficiency of investments in infrastructure	EA1604	Research project	1 st quarter	Medium
DGB Strategy Unit	Quick scan of existing knowledge about the effects of price incentives	EA1505	Research project	1 st quarter	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	Assessment of policy audit of Article 18 maritime shipping, seaports and inland shipping	EA1510	Research project	1 st quarter	Medium
DGB Public Transport and Rail	Comparison of SCBAs of railway electrification	EA1602	Knowledge at the Table	2 nd quarter	Small
Finance, Management and Control	Overview of evaluation methods and monitoring agreements for all types of mobility measures	EA1603	Research project	2 nd quarter	Medium

List of abbreviations

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

Colophon

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