Summary

The mobility policy of the recently appointed Dutch Cabinet aims at a better utilization of the existing mobility system. Against this backdrop, the programme directorate Beter Benutten of the Dutch Ministry of Infrastructure and Environment asked the KiM Netherlands Institute for Policy Analysis to compile an inventory of possible measures pertaining to 'utilisation', including effects these measures will have nationally on mobility objectives. In satisfying this request, the emphasis was placed on the reduction of congestion of the main road network.

In this context, the term 'utilisation' must be broadly interpreted. At issue here is not only the improved utilisation of existing roads but also the incorporation of the entire traffic and transport system. Hence, we speak of 'smart utilisation'. The focus therefore is also on tax and pricing measures, mobility management, public transportation services, logistics, node development, travel information, spatial planning and behavioural aspects.

In order to estimate the effects of various measures, we studied existing literature sources. The ideal foundation is that of ex-post evaluations which include clearly determined effects, yet well-grounded ex-ante studies are also relevant. In cases where no documented determining effects were available, the KiM team made its own assessments.

The effects of measures, such as those determined by us, must always be placed within the context of the manner in which they were (or will be) designed in practice. In assessing the various measures, we did not include any major changes in scope and ambition that may occur during implementation on a national scale. Such changes in context often mean that the effects also change; one example of this is a measure tailored to a particular local problem that appears to have major effects there. The process of scaling up to a national level, then, does not automatically mean that the effects will also apply nationwide.

This research has led to the following conclusions:

- Four measures (see table S.1) have the largest effect on reduction of traffic congestion on the main road network, as measured by the number of vehicle hours lost due to traffic jams. Each of these measures ensured that congestion decreased by 10 to 15%.

Table S.1
Four measures with largest effect on congestion on main road network, expressed in vehicle hours lost due to traffic jams.

	Congestion effect	Livability effect	Safety effect	Costs for government	Achieva-bility
Network-wide application of existing DTM-instruments	+++	+	+	-	+
Abolish tax exemptions for home-to-work and business travel	+++	+	0	++	0
Pay-as-you-drive car insurance premiums	+++	+	+	?	0
25% excise tax increase with reduction of fixed costs	+++	+	+	0	-

Legend:
Effect on congestion: a five-point scale of + (maximum 5% congestion reduction) to +++++ (more than 25% congestion reduction)
Effect on livability and safety: a three-point scale of – (negative) to + (positive)
Costs for government: a five-point scale of -- (high costs) to ++ (high income for government)
Achievability: a three-point scale of – (difficult to achieve) to + (highly achievable)
0 = slight influence and/or neutral score
? = no estimate given

- In addition to the above-stated Top 4 measures, an additional four measures (may) lead to a 5 to 10% reduction of congestion:
  - expanding paid parking;
  - extending tax allowances for teleworking, carpooling and the use of public transport and bicycles;
  - comprehensively rolling out of local dynamic traffic management measures;
  - Promoting the use of navigation-devices that include travel information.

- 31 measures have a limited effect on road congestion, contributing less than 5% to congestion reduction. The majority of these measures are focused on the areas of freight transport and logistics, public transport, transport chains and nodes, spatial planning, travel information, and mobility management.

- No clear effects can be determined from the 'dynamic maximum speed limit' measure, as this is inextricably linked to the manner in which the measure is developed and implemented (what speed limit, at which locations and times, degrees of enforcement, etc.)

- The other five measures addressed in our research make no contribution or otherwise present too little information for assessment.

- Regarding the accessibility of the main road network, as stated in the *Nota Mobiliteit* and *MobiliteitsAanpak*, a fundamental difference exists between developments in unchanged policy and the stated objectives for 2020. No single measure can overcome this disparity.

- Many of the measures we studied are interrelated. The effects of two or more measures introduced at the same time can strengthen or weaken one another. We estimate that, generally, such interaction is minimal. This however does not apply when multiple measures are introduced within the

same area: in such cases the separate effects cannot simply be added together.

- A comprehensive scan of cost effectiveness results in an alternate ranking of the measures: the most cost-effective measures are the abolishment of tax exemptions for home-to-work and business travel, the raising of excise taxes while simultaneously lowering fixed costs, and the expansion of paid parking. Here, the term 'costs' pertains only to the costs for government.

- Measures based on existing techniques and instruments can be implemented the quickest. Examples of this in the field of traffic management are: 'Better management of existing instruments' and 'Network-wide and coordinated use of existing instruments'. An example of a tax measure is the extension of tax allowances for teleworking, carpooling, public transport, and bicycle use, in combination with abolishment of tax exemptions for home-to-work and business travel by car.

- The measures that require the most time to implement and grade the effects thereof are those for which many new techniques must be developed or those which require amendments to existing legislation. Examples of this include 'ICT systems in vehicles', 'Toll charges for new infrastructure' or 'Consolidation of housing'.

- Behavioural aspects play a key role in elaborating and implementing particular measures. Applying specific behavioural knowledge can help increase the effectiveness of and the support for a certain measure.