

FACT SHEET NO.: 7 / 4

PERFORMED BY: PRO

A GENERAL INFORMATION		
A 1	Category	Research and Innovation
A 2	Subcategory	Framework - Transport safety
A 3	Transport policy measure (TPM)	Use of speed limitation devices in lorries and coaches
A 4	Description of TPM	Speed limitation devices allow a certain maximum speed for lorries and coaches. The device interacts when a lorry or coach reaches a pre-programmed maximum speed. With the speed set at an optimum level, it increases safety (for drivers and other road users) and reduces fuel consumption and maintenance costs. Heavy vehicles like lorries and coaches (over 3.5 tonnes) are at a higher risk to road users than other vehicles involved in a crash. Research proved that speeding contributes to about one third of all fatal accidents [3].
A 5	Implementation examples	- EU Directive 1992/6 and 2002/85 prescribe speed limiters (90 km/h limit) for heavy lorries (>12t), coaches (>10t) and light lorries (< 3.5t) to improve safety and reduce environmental impacts.
A 6	Objectives of TPM	An optimal pre-programmed maximum speed has certain benefits. The main objectives of this TPM are: - Increase safety level on roads by slowing down (large) trucks and coaches. Reduced maximum speed decreases the number of collisions and mitigates the severity of those occurring [1] [2] [3]. - To reduce fuel consumption (which is significantly lower by limited speeds) and CO2 emissions [4] [5]. - Speed limitation devices will also help to reduce air pollution, noise and congestion. Mainly while higher engine loads (meaning the power needed to run at certain speed) cause more NOX emissions. Furthermore, speed limitation provides a more homogeneous traffic flow which reduces air pollution, noise and congestion. The latter will not count when the difference in speed between light weight and heavy weight vehicles increases. Congestion will certainly be reduced due to fewer accidents [4] [5].
A 7	Key changes concerning:	
A 7.1	- Choice of transport mode / Multimodality:	No key changes
A 7.2	- Origin and/or destination of trip:	No key changes
A 7.3	- Trip frequency:	No key changes
A 7.4	- Choice of route:	No key changes
A 7.5	- Timing (day, hour):	No key changes
A 7.6	- Occupancy rate / Loading factor:	No key changes
A 7.7	- Energy efficiency / Energy usage:	Fuel consumption decreases due to lower speeds of lorries and coaches.
A 8	Main source	[3]

B IMPACTS																																																																																																																																																																				
B 1	OVERVIEW ON IMPACTS	<table border="1"> <thead> <tr> <th colspan="13">AFFECTED SEGMENTS</th> <th colspan="2">Geographical level</th> <th colspan="2">Source</th> </tr> <tr> <th colspan="5">Passengers</th> <th colspan="6">Transport operators</th> <th rowspan="2">Employees in transport</th> <th rowspan="2">Residents</th> <th rowspan="2">Economy</th> <th rowspan="2">Public bodies</th> <th rowspan="2">Society</th> <th rowspan="2">1st level</th> <th rowspan="2">2nd level</th> <th rowspan="2">Source of assessment</th> <th rowspan="2">Spatial level of source</th> </tr> <tr> <th>Road</th> <th>Rail</th> <th>Air</th> <th>Public transport</th> <th>Slow modes</th> <th>Road</th> <th>Rail</th> <th>IWW</th> <th>Air</th> <th>Maritime</th> <th>Public transport</th> </tr> </thead> <tbody> <tr> <td>B 1.1</td> <td>Summary</td> <td colspan="13"> - First of all, reduced speed limits for lorries and coaches lead to significant decreasing environmental impacts. Summarised, these benefits are: reduced air pollutants, less noise, decreasing CO2 emissions and less fuel consumption. Mostly, society and residents near motorways will benefit from this improved environmental conditions [3] [4] [7]. - Furthermore, road users, transport operators and public transport operators will profit from increased safety on roads. Speeding leads to accidents and speed limiters will decrease the number of casualties and injuries on roads [1] [3] [4] [5]. - Nevertheless, the economic costs and benefits are rather unclear so far. Lower speeds will lead to longer transport times, but reduced fuel consumption, less congestion and decreasing costs for maintenance will be beneficial for transport operators. The net effect for light weight vehicles is positive (see B 3.V) [1] [8] [9]. </td> <td>R</td> <td>N</td> <td>S</td> <td>I</td> </tr> <tr> <td>B 1.2</td> <td>Summary: Income groups</td> <td colspan="13">No specific social groups are affected by this TPM.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 1.3</td> <td>Summary: Age groups</td> <td colspan="13"></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 1.4</td> <td>Summary: Disabled people</td> <td colspan="13"></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 1.5</td> <td>Summary: Gender groups</td> <td colspan="13"></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 1.6</td> <td>Summary: Ethnic groups</td> <td colspan="13"></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	AFFECTED SEGMENTS													Geographical level		Source		Passengers					Transport operators						Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source	Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime	Public transport	B 1.1	Summary	- First of all, reduced speed limits for lorries and coaches lead to significant decreasing environmental impacts. Summarised, these benefits are: reduced air pollutants, less noise, decreasing CO2 emissions and less fuel consumption. Mostly, society and residents near motorways will benefit from this improved environmental conditions [3] [4] [7]. - Furthermore, road users, transport operators and public transport operators will profit from increased safety on roads. Speeding leads to accidents and speed limiters will decrease the number of casualties and injuries on roads [1] [3] [4] [5]. - Nevertheless, the economic costs and benefits are rather unclear so far. Lower speeds will lead to longer transport times, but reduced fuel consumption, less congestion and decreasing costs for maintenance will be beneficial for transport operators. The net effect for light weight vehicles is positive (see B 3.V) [1] [8] [9].													R	N	S	I	B 1.2	Summary: Income groups	No specific social groups are affected by this TPM.																	B 1.3	Summary: Age groups																		B 1.4	Summary: Disabled people																		B 1.5	Summary: Gender groups																		B 1.6	Summary: Ethnic groups																	
AFFECTED SEGMENTS													Geographical level		Source																																																																																																																																																					
Passengers					Transport operators						Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source																																																																																																																																																	
Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime	Public transport																																																																																																																																																										
B 1.1	Summary	- First of all, reduced speed limits for lorries and coaches lead to significant decreasing environmental impacts. Summarised, these benefits are: reduced air pollutants, less noise, decreasing CO2 emissions and less fuel consumption. Mostly, society and residents near motorways will benefit from this improved environmental conditions [3] [4] [7]. - Furthermore, road users, transport operators and public transport operators will profit from increased safety on roads. Speeding leads to accidents and speed limiters will decrease the number of casualties and injuries on roads [1] [3] [4] [5]. - Nevertheless, the economic costs and benefits are rather unclear so far. Lower speeds will lead to longer transport times, but reduced fuel consumption, less congestion and decreasing costs for maintenance will be beneficial for transport operators. The net effect for light weight vehicles is positive (see B 3.V) [1] [8] [9].													R	N	S	I																																																																																																																																																		
B 1.2	Summary: Income groups	No specific social groups are affected by this TPM.																																																																																																																																																																		
B 1.3	Summary: Age groups																																																																																																																																																																			
B 1.4	Summary: Disabled people																																																																																																																																																																			
B 1.5	Summary: Gender groups																																																																																																																																																																			
B 1.6	Summary: Ethnic groups																																																																																																																																																																			

B 2 TRAFFIC IMPACTS																																																																																																																																																										
B 2.1	Travel or transport time	<table border="1"> <thead> <tr> <th colspan="13">AFFECTED SEGMENTS</th> <th colspan="2">Geographical level</th> <th colspan="2">Source</th> </tr> <tr> <th colspan="5">Passengers</th> <th colspan="6">Transport operators</th> <th rowspan="2">Employees in transport</th> <th rowspan="2">Residents</th> <th rowspan="2">Economy</th> <th rowspan="2">Public bodies</th> <th rowspan="2">Society</th> <th rowspan="2">1st level</th> <th rowspan="2">2nd level</th> <th rowspan="2">Source of assessment</th> <th rowspan="2">Spatial level of source</th> </tr> <tr> <th>Road</th> <th>Rail</th> <th>Air</th> <th>Public transport</th> <th>Slow modes</th> <th>Road</th> <th>Rail</th> <th>IWW</th> <th>Air</th> <th>Maritime</th> <th>Public transport</th> </tr> </thead> <tbody> <tr> <td>B 2.1</td> <td>Travel or transport time</td> <td>→</td> <td></td> <td>→</td> <td></td> <td>→</td> <td></td> <td></td> <td></td> <td></td> <td>→</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>N</td> <td>R</td> <td>S</td> <td>I</td> </tr> <tr> <td>B 2.2</td> <td>Risk of congestion</td> <td>→</td> <td></td> <td>→</td> <td></td> <td>→</td> <td></td> <td></td> <td></td> <td></td> <td>→</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>L</td> <td>R</td> <td>S</td> <td>I</td> </tr> <tr> <td>B 2.3</td> <td>Vehicle mileage</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 2.4</td> <td>Service and comfort</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>													AFFECTED SEGMENTS													Geographical level		Source		Passengers					Transport operators						Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source	Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime	Public transport	B 2.1	Travel or transport time	→		→		→					→								N	R	S	I	B 2.2	Risk of congestion	→		→		→					→								L	R	S	I	B 2.3	Vehicle mileage																						B 2.4	Service and comfort																					
AFFECTED SEGMENTS													Geographical level		Source																																																																																																																																											
Passengers					Transport operators						Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source																																																																																																																																							
Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime	Public transport																																																																																																																																																
B 2.1	Travel or transport time	→		→		→					→								N	R	S	I																																																																																																																																				
B 2.2	Risk of congestion	→		→		→					→								L	R	S	I																																																																																																																																				
B 2.3	Vehicle mileage																																																																																																																																																									
B 2.4	Service and comfort																																																																																																																																																									
B 2.I	Overall impacts on social groups																																																																																																																																																									
B 2.II	Implementation phase																																																																																																																																																									
B 2.III	Operation phase																																																																																																																																																									
B 2.IV	Summary / comments concerning the main impacts	- Direct effect: Longer travel time due to limited speeds for trucks and coaches. [5] - Reduced risk of congestion due to fewer accidents. It depends on the speed limit of other road users if there will be a more homogeneous traffic flow. Differences in speed between road users hamper the traffic flow. The net effect concerning the more homogeneous traffic flow is unknown [5].																																																																																																																																																								
B 2.V	Quantification of impacts	- Speed limiters can reduce the speed of Light Goods Vehicles by 10% which may lead to a significant reduction in the accident rate and the congestion rate. [10]																																																																																																																																																								

B 3 ECONOMIC IMPACTS																																																																																																																																																																																																																																																																																																																											
B 3.1	Transport costs	<table border="1"> <thead> <tr> <th colspan="13">AFFECTED SEGMENTS</th> <th colspan="2">Geographical level</th> <th colspan="2">Source</th> </tr> <tr> <th colspan="5">Passengers</th> <th colspan="6">Transport operators</th> <th rowspan="2">Employees in transport</th> <th rowspan="2">Residents</th> <th rowspan="2">Economy</th> <th rowspan="2">Public bodies</th> <th rowspan="2">Society</th> <th rowspan="2">1st level</th> <th rowspan="2">2nd level</th> <th rowspan="2">Source of assessment</th> <th rowspan="2">Spatial level of source</th> </tr> <tr> <th>Road</th> <th>Rail</th> <th>Air</th> <th>Public transport</th> <th>Slow modes</th> <th>Road</th> <th>Rail</th> <th>IWW</th> <th>Air</th> <th>Maritime</th> <th>Public transport</th> </tr> </thead> <tbody> <tr> <td>B 3.1</td> <td>Transport costs</td> <td>→</td> <td></td> <td>→</td> <td></td> <td>→</td> <td></td> <td></td> <td></td> <td></td> <td>→</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>N</td> <td>I</td> <td>S</td> <td>I</td> </tr> <tr> <td>B 3.2</td> <td>Private income / commercial turn over</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 3.3</td> <td>Revenues in the transport sector</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 3.4</td> <td>Sectoral competitiveness</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 3.5</td> <td>Spatial competitiveness</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 3.6</td> <td>Housing expenditures</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 3.7</td> <td>Insurance costs</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 3.8</td> <td>Health service costs</td> <td>→</td> <td></td> <td></td> <td>→</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>N</td> <td></td> <td>S</td> <td>I</td> </tr> <tr> <td>B 3.9</td> <td>Public authorities & adm. burdens on businesses</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B 3.10</td> <td>Public income (e.g.: taxes, charges)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>N</td> <td></td> <td>E</td> <td></td> </tr> <tr> <td>B 3.11</td> <td>Third countries and international relations</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>													AFFECTED SEGMENTS													Geographical level		Source		Passengers					Transport operators						Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source	Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime	Public transport	B 3.1	Transport costs	→		→		→					→								N	I	S	I	B 3.2	Private income / commercial turn over																						B 3.3	Revenues in the transport sector																						B 3.4	Sectoral competitiveness																						B 3.5	Spatial competitiveness																						B 3.6	Housing expenditures																						B 3.7	Insurance costs																						B 3.8	Health service costs	→			→														N		S	I	B 3.9	Public authorities & adm. burdens on businesses																						B 3.10	Public income (e.g.: taxes, charges)																		N		E		B 3.11	Third countries and international relations																					
AFFECTED SEGMENTS													Geographical level		Source																																																																																																																																																																																																																																																																																																												
Passengers					Transport operators						Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source																																																																																																																																																																																																																																																																																																								
Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime	Public transport																																																																																																																																																																																																																																																																																																																	
B 3.1	Transport costs	→		→		→					→								N	I	S	I																																																																																																																																																																																																																																																																																																					
B 3.2	Private income / commercial turn over																																																																																																																																																																																																																																																																																																																										
B 3.3	Revenues in the transport sector																																																																																																																																																																																																																																																																																																																										
B 3.4	Sectoral competitiveness																																																																																																																																																																																																																																																																																																																										
B 3.5	Spatial competitiveness																																																																																																																																																																																																																																																																																																																										
B 3.6	Housing expenditures																																																																																																																																																																																																																																																																																																																										
B 3.7	Insurance costs																																																																																																																																																																																																																																																																																																																										
B 3.8	Health service costs	→			→														N		S	I																																																																																																																																																																																																																																																																																																					
B 3.9	Public authorities & adm. burdens on businesses																																																																																																																																																																																																																																																																																																																										
B 3.10	Public income (e.g.: taxes, charges)																		N		E																																																																																																																																																																																																																																																																																																						
B 3.11	Third countries and international relations																																																																																																																																																																																																																																																																																																																										
B 3.I	Overall impacts on social groups																																																																																																																																																																																																																																																																																																																										
B 3.II	Implementation phase																																																																																																																																																																																																																																																																																																																										
B 3.III	Operation phase																																																																																																																																																																																																																																																																																																																										
B 3.IV	Summary / comments concerning the main impacts	- The purchase and installation costs strongly depend on whether the device is installed during manufacture or at a later date (retrofit) [5]. - The transport costs will increase due to a longer travel time, but the fuel and maintenance costs will decrease due to the lower speeds. The cost-benefit ratio for light weight vehicles turned out to be positive (see quantification of impacts) [8] [9] [10]. For lorries and coaches this ratio is unclear. - Reduced speeds for lorries and coaches improves road safety for all road users (including slow modes). This will lead to fewer accidents and reduced health service costs for road users and society [1] [8].																																																																																																																																																																																																																																																																																																																									
B 3.V	Quantification of impacts	- Countries with a good safety record, such as Norway, Great Britain, Sweden and the Netherlands, assign a high monetary value to the prevention of a traffic fatality (when using a Cost-benefit analysis) [8]. - Installing intelligent speed adaptation (ISA-systems) in Norway found out to have a benefit/cost ratio 1.95. This means that the benefits for this measure are higher than the costs [8]. - The IMPROVER study concluded that the benefits (mainly due to more economical driving behaviour) of speed limiters for light weight commercial vehicles outweigh the costs with a factor of 1.65 for the existing vehicle fleet [9]. - Another study on light ggod vehicles concluded B/C ratios greater than 1 for the speed limiter set at 100 km/h. [10]																																																																																																																																																																																																																																																																																																																									

B 4	SOCIAL IMPACTS	AFFECTED SEGMENTS													Geographical level		Source			
		Passengers					Transport operators					Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source
		Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime									
B 4.1	Health (incl. well-being)																			
B 4.2	Safety	↗			↗	↗	↗							↗						
B 4.3	Crime, terrorism and security																			
B 4.4	Accessibility of transport systems																			
B 4.5	Social inclusion, equality & opportunities																			
B 4.6	Standards and rights (related to job quality)																			
B 4.7	Employment and labour markets																			
B 4.8	Cultural heritage / culture																			
B 4.I	Overall impacts on social groups																			
B 4.II	Implementation phase																			
B 4.III	Operation phase																			
B 4.IV	Summary / comments concerning the main impacts	<p>- CO2 emissions, air pollutants and noise will decrease when speed limitation devices will be obligatory. This will improve the well-being of residents near motorways and the entire society [4] [5].</p> <p>- The level of safety will increase substantially for all road users. Lower speeds reduce stopping distances, give a greater time to recognize hazards, increase the ability of other road users to judge vehicle speed and time before collision and reduce the likelihood that a driver will lose vehicle control [1].</p> <p>- The labour market for road transport will not be affected. The installation costs of speed limitation devices will be flattened out by maintenance costs savings [3].</p>																		
B 4.V	Quantification of impacts	<p>- A 1% reduction in the average speed of traffic (all traffic modes) leads to a 2% reduction in injury accidents [3].</p> <p>- If road the average speed decreases from 120 to 119 km/h, the number of road fatalities is estimated to be reduced by 3.8% and the serious road injuries by 2.9% [1].</p> <p>- Speed limiters can reduce the speed of Light Goods Vehicles by 10% which may lead to a significant reduction in the accident rate and the congestion rate. [10]</p>																		

B 5	ENVIRONMENTAL IMPACTS	AFFECTED SEGMENTS													Geographical level		Source			
		Passengers					Transport operators					Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source
		Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime									
B 5.1	Air pollutants																			
B 5.2	Noise emissions																			
B 5.3	Visual quality of the landscape																			
B 5.4	Land use																			
B 5.5	Climate																			
B 5.6	Renewable or non-renewable resources																			
B 5.I	Overall impacts on social groups																			
B 5.II	Implementation phase																			
B 5.III	Operation phase																			
B 5.IV	Summary / comments concerning the main impacts	<p>Speed limitation devices will reduce maximum speeds which will lead to several positive impacts for the environment, such as:</p> <p>- Reducing air pollution (mainly NOx, but also PM10) through lower engine loads of lorries and coaches. This will be beneficial for the entire society and for especially for residents living near motorways [4].</p> <p>- Noise will decline through lower speeds and less congestion [3], which counts mainly for residents near motorways.</p> <p>- CO2 emissions will be reduced with the introduction of speed limitation devices which is desirable for the entire society and in accordance with the EU policy to reduce CO2 emissions by 20% in 2020.</p> <p>- Fuel consumption reduction of lorries and coaches through the introduction of speed limitation devices. Especially because driven speeds on motorways are above the optimum level for fuel efficiency [7].</p> <p>- In addition, as potential indirect effect speed limitation devices can lead to even more significant CO2 reductions. For example, if lower top speeds and their resulting safety benefits would incentivise the market for lighter and less powerful trucks and coaches. This potential development reduces significant additional carbon savings over the long run [7].</p> <p>- Indirect effect: Decline of additional land-use due to lower demand for new road infrastructure based on to higher road capacities.</p>																		
B 5.V	Quantification of impacts	<p>- Practical experiments in the Netherlands showed that speed limiters (limited to 110 km/h) in vans and light trucks resulted in 5% fuel savings [3].</p> <p>- A study in the UK showed that a new 60mph (96 km/h) speed limit (for cars) will reduce CO2 emissions by an average of 1.88 million tonnes of carbon per year [7].</p> <p>- Decreasing speed limits around Rotterdam (NL) from 100 to 80 km/h resulted in a reduction of 25% in NOx emissions from traffic [4].</p>																		

C REFERENCES		
C 1	Other TPMs of this subcategory	
C 2	References	<p>International</p> <p>[1] Global Road Safety Partnership (2008): Speed Management - A road safety manual for decision-makers and practitioners, Geneva: Publications of GRSP</p> <p>[3] European Transport Safety Council (2008): Managing Speed - Towards safe and sustainable road transport, Brussels: European Transport Safety Council</p> <p>[4] European Federation for Transport and Environment (2005): Road transport speed and climate change, Brussels: Transport & Environment</p> <p>[5] Boer, E. den., et al. (2010): Speed limiters for vans in Europe - Environmental and safety impacts, Delft: CE Delft</p> <p>[6] Boer, E. den., et al. (2009): Are trucks taking their toll? The environmental, safety and congestion impacts of lorries in the EU, Delft: CE Delft</p> <p>[8] SafetyNet (2009): Cost-benefit analysis, Brussels: Directorate-General Transport and Energy</p> <p>[9] European Commission (2006): IMPROVER - Impact Assessment of Road Safety Measures for Vehicles and Road Equipment, Luxembourg: Publications Office of the European Union</p> <p>[10] Toledo, T.; Hakkert, S.; Albert, G. (2007). Evaluating the benefits of active speed limiters and comparison to other safety measures. Proceedings of the European Transport Conference 2007, Noordwijkerhout, NL</p> <p>National</p> <p>[2] Commercial Truck and Bus Safety Synthesis Program (2008): Safety Impacts of Speed Limiter Device Installations on Commercial Trucks and Buses - A Synthesis of Safety Practice, Washington D.C.: Transportation Research Board</p> <p>[7] Anable, J. Mitchell, P. Layberry, R. (2006): Getting the genie back in the bottle: Limiting speed to reduce carbon emissions and accelerate the shift to low carbon vehicles, London: Lowcvp</p>