

Table 1. Road Transport - Core Measures: Definitions, priorities, and sources of data

(Work in progress, last updated on 11 November, 2004)

1. ROAD NETWORK

	Core Measure	Unit	Priority	Definition of Term	Sources of data	Comment
1.1	Total Road Network	km	D	Length of the classified road network. The road network includes "all roads in a given area" (<i>Glossary of Transport Statistics</i> , 2003, p.29) which are formally designated.	WDI (IRF data) - DERIVED	Aggregate of 1.1.1, 1.1.2, 1.1.3, 1.1.4 and 1.1.5.
1.1.1	Motorways	km	A	Length of roads, specifically designed and built for motor traffic, which does not serve properties bordering on it, and which: (a) is provided, except at special points or temporarily, with separate carriageways for the two directions of traffic, separated from each other, either by a dividing strip not intended for traffic, or exceptionally by other means; (b) does not cross at level with any road, railway or tramway track, or footpath; (c) is specially sign-posted as a motorway and is reserved for specific categories of road motor vehicles. Entry and exit lanes of motorways are included irrespectively of the location of the signposts (IRF, 2003, p.2).	Road Authority	All toll roads will be included in this category (if otherwise, please indicate).
1.1.2	Highways, main or national roads	km	A	Length of A-level roads. "A-level roads are roads outside urban areas that are not motorways but belong to the top-level road network. (...) A-level roads are characterized by a comparatively high quality standard, either non-divided roads with oncoming traffic or similar to motorways. In most countries, these roads are financed by the federal or national government" (IRTAD, 1998, p.6).	Road Authority	
1.1.3	Secondary or regional roads	km	A	Length of roads that are the main feeder routes into, and provide the main links between highways, main or national roads.	Road Authority	
1.1.4	Other roads: Urban	km	B	Length of roads within the boundaries of a built-up area, which is an area with entries and exists specially sign-posted as such (<i>Glossary of Transport Statistics</i> , 2003, p.30 and <i>Glossary of Transport Statistics</i> , 1997, p.30).	Road Authority	Other than those in 1.1.1, 1.1.2, 1.1.3
1.1.5	Other roads: Rural	km	B	Length of all remaining classified roads in a country not included in categories 1.1.1, 1.1.2, 1.1.3 and 1.1.4.	Road Authority	

1.2	Paved Roads: Total	km	D	Length of all roads that are surfaced with crushed stone (macadam) and hydrocarbon binder or bituminized agents, with concrete or with cobblestones (WDI, 2003, p.293 Table 5.9; IRF, 2003, p.2).	WDI (IRF data) - DERIVED	Aggregate of 1.2.1, 1.2.2, 1.2.3, 1.2.4, and 1.2.5.
1.2.1	Paved motorways	km	A	Length of motorways that are paved.	Road Authority	expected to equal 1.1.1
1.2.2	Paved highways, main or national roads	km	A	Length of highways, main or national roads, that are paved.	Road Authority	ref. 1.1.2
1.2.3	Paved secondary or regional roads	km	A	Length of secondary or regional roads that are paved.	Road Authority	ref.1.1.3
1.2.4	Paved other roads: urban	km	A	Length of other roads (urban) that are paved.	Road Authority	ref. 1.1.4
1.2.5	Paved other roads: rural	km	A	Length of other roads (rural) that are paved.	Road Authority	ref. 1.1.5
1.3	Roads in “good and regular” (fair) condition: Total	km	D	Total length of roads that are in “good” or “regular” condition. 'Roads in good condition': Paved roads, largely free of defects, requiring only routine maintenance and perhaps surface treatment. Unpaved roads which need only routine grading and localized repairs. 'Roads in regular (or fair) condition': Paved roads with defects and weakened structural resistance. They require resurfacing of the pavement, but without the need to demolish the existing pavement. Unpaved roads, which require grading and additional new gravel, plus drainage repair in some places (ECLAC, 1993, p.33). Remaining roads are taken to be in ‘poor’ condition – ie. barely functional and unmaintainable without substantial rehabilitation.	DERIVED	Aggregate of 1.3.1, 1.3.2, 1.3.3, 1.3.4 and 1.3.5
1.3.1	Motorways in “good and regular condition”	km	A	Length of motorways that are in “good” or “regular” (fair) condition.	Road Authority	ref. 1.1.1
1.3.2	Highways, main or national roads in “good and regular condition”	km	A	Length of highways, main or national roads, that are in “good” or “regular” (fair) condition.	Road Authority	ref. 1.1.2
1.3.3	Secondary or regional roads in “good and regular condition”	km	A	Length of secondary or regional roads that are in “good” or “regular” (fair) condition.	Road Authority	ref. 1.1.3

1.3.4	Other roads: urban in "good and regular condition"	km	A	Length of other roads: urban that are in "good" or "regular" (fair) condition.	Road Authority	ref. 1.1.4
1.3.5	Other roads: rural in "good and regular condition"	km	A	Length of other roads: rural that are in "good" or "regular" (fair) condition.	Road Authority	ref. 1.1.5

2. ROAD ADMINISTRATION

	Core Measure	Unit	Priority	Definition of Term	Sources of data	Comment
2.1	Governance of national road network	(No / Emerging / Yes)	A	Does an institution that advises the Minister on various matters pertaining to management [and financing] of roads, namely a National Roads Board (NRB) (or Road Council, Highways Agency Board) exist? (see Heggie, 1999).	In-country sector knowledge	
2.2	Private Sector Representatives form majority on NRB	(No / Emerging / Yes)	B	Do private sector representatives form majority on NRB?	In-country sector knowledge	ref. 2.1
2.3	National Road Agency operating	(No / Emerging / Yes)	A	Does the Main (National) Road Agency - responsible for the main road network - operate with a comprehensive report published at least on an annual basis?	Road Authority	
2.4	National Road Agency Audited	(No / Emerging / Yes)	B	Are technical and financial audits published by the Main (National) Road Agency on at least an annual basis?	Road Authority	ref. 2.3
2.5	National Road Agency Administration Cost	(\$)	A	The amount of resources spent by the Main (National) Road Agency in conjunction with its own operation and service per year* (<i>Glossary of Transport Statistics, 2003, p.18</i>).	Road Authority	ref. 2.3
2.6	Road asset value: Total	(\$)	D	The total value of the road asset in a given year*. Road asset values can be expressed in a variety of ways, one of them would be to calculate the replacement value of a road network, which is the original value of the network, minus depreciation (by component: pavement, land, base course, etc.) plus improvements made (productivity gains in making the road must also be accounted). Give further guidance?	DERIVED	Aggregate of 2.6.1, 2.6.2, 2.6.3, 2.6.4, and 2.6.5.
2.6.1	Asset value: Motorways	(\$)	A	see 2.6	Road Authority	ref. 1.1.1

2.6.2	Asset value: Highways, main or national roads	(\$)	A	see 2.6	Road Authority	ref. 1.1.2
2.6.3	Asset value: Secondary or regional roads	(\$)	A	see 2.6	Road Authority	ref. 1.1.3
2.6.4	Asset value: Other roads: urban	(\$)	A	see 2.6	Road Authority	ref. 1.1.4
2.6.5	Asset value: Other roads: rural	(\$)	A	see 2.6	Road Authority	ref. 1.1.5

3. ROAD FINANCE

	Core Measure	Unit	Priority	Definition of Term	Sources of data	Comment
3.1	Annual road expenditure	(\$)	D	The total amount of expenditure on new construction and extension of existing roads, including reconstruction, renewal and major repairs of roads per year* (<i>Glossary of Transport Statistics</i> , 2003, p.19).	Road Authority	Aggregate of 3.1.1 and 3.1.2.
3.1.1	Capital investment	(\$)	A	The total amount of investment in the road sector to maintain sufficient capacity as well as increase capacity per year*.	Road Authority	What about R&D?
3.1.2	Maintenance expenditure	(\$)	A	The total expenditure for keeping roads in working order per year*. This includes maintenance, patching and running repairs (work relating to roughness of carriageway's wearing course, roadsides, etc.) (<i>Glossary of Transport Statistics</i> , 2003, p.19 and <i>Glossary for Transport Statistics</i> , 1997, p.37).	Road Authority	
3.2	Road maintenance requirement	(\$)	A	The amount of financing required per year* to keep roads in working order. This includes maintenance, patching and running repairs (work relating to roughness of carriageway's wearing course, roadsides, shoulder, drains, structures, slopes, signs, etc.) (<i>Glossary of Transport Statistics</i> , 2003, p.19 and <i>Glossary for Transport Statistics</i> , 1997, p.37).	Road Authority	
3.3	Maintenance contracts cost	(\$)	B	The amount of maintenance expenditure per year* that is dispersed through maintenance contracts. The contracts include specific items of maintenance work (routine works, periodic works, special works and development), such as the resealing, overly or reconstruction of a specific length of pavement for example.	Road Authority	Expected not to exceed 3.1.2

3.4	Road Network Financing by Source: Total	(\$)	D	The total amount of road sector financing obtained from different sources per year*.	DERIVED	Aggregate of 3.4.1, 3.4.2, and 3.4.3.
3.5	Official Development Assistance (ODA)	(\$)	B	The total amount of financing for the road network provided by official agencies, including state and local governments, or by their executive agencies while each transaction of which meets the following tests (1) ODA is administered with the promotion of the economic development and welfare of developing countries as its main objective, (2) ODA is concessional in character and conveys a grant element of at least 25 percent (calculated at a rate of discount of 10 percent) (OECD) per year*.		
3.6	Private Finance	(\$)	B	The amount of financing for the roads network (exclusively roads that are open to public use) provided by the private sector (e.g. likely to apply to toll roads, BO, etc.) per year*.		
3.7	Public Finance	(\$)	B	The amount of financing for the roads network provided by national and local government through taxation or other means per year*.		

4. ROAD USAGE

	Core Measure	Unit	Priority	Definition of Term	Sources of data	Comment
4.1	Stock of road motor vehicles	number of vehicles	B	Number of road motor vehicles registered at a given date in a country and licensed to use roads open to public traffic. This includes road (motor) vehicles exempted from annual taxes or license fees; it also includes imported second-hand vehicles and other road vehicles according to national practices. The statistics should exclude military vehicles. Road vehicle is a vehicle running on wheels and intended for use on roads (Glossary for Transport Statistics, 1997, p.30 and Glossary of Transport Statistics, 2003, p.31). Care is required in dealing with vehicles out of service. Vehicle classification is useful where data is available.	national vehicle licensing authority	see footnote (1)
4.2	Daily traffic flow: Total	number of vehicles	D	Total number of road motor vehicles that move on a given network per day*. When a road motor vehicle is being carried on another vehicle, only the movement of the carrying vehicle (active mode) is considered (<i>Glossary of Transport Statistics</i> , 2003, p.41). Aggregate of Rd.33, Rd.34, Rd. 35	DERIVED	Aggregate of 4.2.1, 4.2.2 and 4.2.3.
4.2.1	Daily traffic flow on motorways	number of vehicles	A	Total average daily road motor vehicle traffic on motorways*.	Road Authority	ref. 1.1.1
4.2.2	Daily traffic flow on highways, main or national roads	number of vehicles	A	Total average daily road motor vehicle traffic on main/national highways*.	Road Authority	ref. 1.1.2

4.2.3	Daily traffic flow on secondary or regional roads	number of vehicles	A	Total average daily road motor vehicle traffic on secondary/regional highways*.	Road Authority	ref. 1.1.3
4.2.4	Daily traffic flow on other roads: urban	number of vehicles	B	Total number of road motor vehicles that move on other roads (urban) per day*.	Road Authority	ref. 1.1.4
4.2.5	Daily traffic flow on other roads: rural	number of vehicles	B	Total number of road motor vehicles that move on other roads (rural) per day*.	Road Authority	ref. 1.1.5
4.3	Total passenger activity	million passenger km	D	Total number of passenger kilometers driven per day*.	DERIVED	Aggregate of 4.3.1, 4.3.2, 4.3.3
4.3.1	Passenger activity on motorways	million passenger km	B	Total number of passenger kilometers driven on motorways per day*.	Road Authority	Based on 4.2.1
4.3.2	Passenger activity on highways, main or national roads	million passenger km	B	Total number of passenger kilometers driven on highways, main or national roads per day*.	Road Authority	Based on 4.2.2
4.3.3	Passenger activity on secondary or regional roads	million passenger km	B	Total number of passenger kilometers driven on secondary or regional roads per day*.	Road Authority	Based on 4.2.3
4.3.4	Passenger activity on other roads: Urban	million passenger km	B	Total number of passenger kilometers driven on other roads (urban) per day*.	Road Authority	Based on 4.2.4
4.3.5	Passenger activity on other roads: Rural	million passenger km	B	Total number of passenger kilometers driven on other roads (rural) per day*.	Road Authority	Based on 4.2.5
4.4	Total freight activity	ton km	D	Total freight ton kilometers carried per day*.	DERIVED	Aggregate of 4.4.1, 4.4.2, 4.4.3
4.4.1	Freight activity on motorways	ton km	B	Total freight ton kilometers carried on motorways per day*.	Road Authority	Based on 4.2.1
4.4.2	Freight activity on highways, main or national roads	ton km	B	Total freight ton kilometers carried on highways, main or national roads per day*.	Road Authority	Based on 4.2.2

4.4.3	Freight activity on secondary or regional roads	ton km	B	Total freight ton kilometers carried on secondary or regional roads per day*.	Road Authority	Based on 4.2.3
4.4.4	Freight activity on other roads: Urban	ton km	B	Total freight ton kilometers carried on other roads (urban) per day*.	Road Authority	Based on 4.2.4
4.4.5	Freight activity on other roads: Rural	ton km	B	Total freight ton kilometers carried on other roads (rural) per day*.	Road Authority	Based on 4.2.5
4.5	Roads carrying 'tollable' traffic volume	km	B	Length of roads that have a higher average traffic volume than 10,000 vehicles/day. 10,000 vehicles/day is approximately the threshold to extend a road from two to four lanes.	Road Authority	
4.6	Rural Accessibility	million people	A	Number of rural people living within 2 km of an all-season road	Road Authority	
4.7	Transport Service Participation	(No / Emerging / Yes)		Are there clear and reasonable processes for transport operators to be legally able to deliver different forms of transport service in a competitive manner?		
4.8	Environmental Standards	(No / Emerging / Yes)		Are road construction works and road traffic measures subject by law to a thorough appraisal (at least equivalent to the standards required for WB investment) of environmental impact and monitoring?		

5. ROAD MOTOR VEHICLE FUEL CONSUMPTION

	Core Measure	Unit	Priority	Definition of Term	Sources of data	Comment
5.1	Annual Fuel Consumption: Total	1000 tons	B	The total fuel (gasoline and diesel oil) consumption for a given year* in a country.	National Energy Ministry	
5.2	Annual road motor vehicle fuel consumption	1000 tons	D	Total amount of road motor vehicle fuel consumption per year*.	DERIVED	Aggregate of 5.2.1, 5.2.2.
5.2.1	Annual road motor vehicle consumption of gasoline (petroleum): regular and super	1000 tons	B	The amount of consumption of light hydrocarbon oil for use in internal combustion engines, excluding those in aircraft per year*. Motor gasoline is distilled between 35 degree C and 215 degree C and treated by reforming, catalytic cracking or blending with an aromatic fraction to reach a sufficiently high octane number (_80RON) (<i>Glossary of Transport Statistics</i> , 2003, p.48).	National Energy Ministry	

5.2.2	Annual road motor vehicle consumption of Gas/diesel oil (distillate fuel oil)	1000 tons	B	The road motor vehicle fuel consumption of oil obtained from the lowest fraction from atmospheric distillation of crude oil per year*. Gas/diesel oil includes heavy gas oils obtained by vacuum re-distillation of the residual from atmospheric distillation. Gas/diesel oil distills between 200oC and 380oC, with less than 65 per cent in volume at 250oC, including losses, and 80 per cent or more at 350oC. The flashpoint is always above 50oC and their density is higher than 0.81. Heavy oils obtained by blending are grouped together with gas oils, provided that their kinematic viscosity does not exceed 25 cST at 40oC. Calorific value: 43.3 TJ/1 000 t (<i>Glossary of Transport Statistics</i> , 2003, p.48).	National Energy Ministry	
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6. ROAD USER CHARGES, TAXES, FARES, AND PRICES

	Core Measure	Unit	Priority	Definition of Term	Sources of data	Comment
6.1	Competitive private sector participation in transport services	(No / Emerging / Yes)	A	Are there clear and reasonable processes for transport operators to be legally able to deliver different forms of transport service in a competitive manner?	In-country sector knowledge	
6.2	Road Motor Vehicle User Charge					
6.2.1	Road user charge (public)	(\$)	B	The total funds collected per year* through indirect and direct (public) charges for road services that are levied as fees. Tolls for instance refer to direct charges that can function like prices (analogous to public utility tariffs). An indirect road user charge could include a surcharge on fuel taxes (TWU-26).	In-country sector knowledge	
6.2.2	Road user charge (private)	(\$)	B	The total funds collected per year* through charges by a private operator, normally in the form of tolls or access charges.	In-country sector knowledge	
6.2.3	Road user taxes (excluding above charges)	(\$)	B	The total amount of public taxes (per year*) collected in relation to transport provision and operations (vehicle and parts import duties, sales taxes, fuel taxes, etc.) that contribute to general revenue (in excluding any "user charge" in 6.2.1)	In-country sector knowledge	
6.3	Passenger Fares					
6.3.1	Average Passenger Fare: inter-city	(\$)/km	B	The average charge (per km) for a passenger on an inter-city journey. This will usually be calculated on the basis of the total passenger fare collection divided by the total passenger distance carried during the year*.	Local Chamber of Commerce or Passenger Transport	

					Assn.	
6.3.2	Subsidy of inter-city passenger service	No / Yes	B	Is there a subsidy of inter-city passenger services? 'Subsidy' refers to the payment of public funds to supplement user charges and other revenues related to the service. Any transfer of revenue from one segment of the business to the other should be noted in 6.3.7.	Passenger Transport Assn.	
6.3.3	Average Passenger Fare: intra-city	(\$)/km	B	The average charge (per km) for a passenger on an intra-city journey. This will usually be calculated on the basis of the total passenger fare collection divided by the total passenger distance carried during the year*.		refer to 6.3.1
6.3.4	Subsidy of intra-city passenger service	No / Yes	B	Is there a subsidy of intra-city passenger services?		refer to 6.3.2
6.3.5	Average Passenger Fare: rural transport	(\$)/km	B	The average charge (per km) for a passenger on a rural journey. This will usually be calculated on the basis of the total passenger fare collection divided by the total passenger distance carried during the year*.		refer to 6.3.1
6.3.6	Subsidy of rural transport passenger service	No / Yes	B	Is there a subsidy of rural transport passenger services?		refer to 6.3.2
6.3.7	Subsidy of service for poor or vulnerable users	No / Yes	A	Is there any form of payment or cross-subsidy which support the provision of road transport service specifically for poor or vulnerable people? Specific arrangements should be noted.		refer to 6.3.2
6.4	Average Freight Rate					
6.4.1	Average Freight Rate: inter-city	(\$)/km	B	The average charge for transporting something by common carrier per km between cities in a fixed year*.		refer to 6.3.1
6.4.2	Average Freight Rate: intra-city	(\$)/km	B	The average charge for transporting something by common carrier per km inside a city in a fixed year*.		refer to 6.3.1
6.4.3	Average Freight Rate: rural transport	(\$)/km	B	The average charge for transporting something by common carrier per km in rural areas in a fixed year*.		refer to 6.3.1
6.5	Motor vehicle fuel prices					
6.5.1	Vehicle fuel prices: Gasoline: regular/super	(\$)/liter	B	The average amount paid by road motor vehicle users for one liter of gasoline (regular/super) per year*. GTZ uses the most widely sold grade of gasoline (in terms of quantity) as the respective basis for each country. In countries where regular-grade gasoline is still the norm this fuel is used instead of super gasoline (GTZ, 2003).	GTZ annual update	ref. 5.2.1

6.5.3	Vehicle fuel prices: Gas/Diesel oil (distillate fuel oil)	(\$)/liter	B	The average amount paid by road motor vehicle users for one liter of diesel per year*.	GTZ annual update	ref. 5.2.2
7. Road Sector Safety						
	Core Measure	Unit	Priority	Definition of Term	Sources of data	Comment
7.3	Road Safety					
7.3.1	Road safety plan published and implemented	(No / Emerging / Yes)	A	Is there a government endorsed comprehensive plan of integrated measures to improve road safety, which is published and being actively implemented?	In-country sector knowledge	
7.3.2	High level inter-ministerial safety commission is active	(No / Emerging / Yes)	B	Is a high level inter-ministerial safety commission active?	In-country sector knowledge	
7.3.3	Road accident: Fatal	Number of people	A	Number of people who were killed as a result of and within 30 days of the occurrence of any accident involving at least one motor road vehicle in motion on a public road or private road to which the public has right of access. Included are: collisions between road vehicles ; between road vehicles and pedestrians; between road vehicles and animals or fixed obstacles and with one road vehicle alone. Included are collisions between road and rail vehicles. (<i>Glossary of Transport Statistics, 2003, p.49</i>).	WHO	
7.3.4	Road accident: Seriously injured	Number of people	B	Number of people who had any injury accident other than a fatal. This includes any person injured who was hospitalized for a period of more than 24 hours (not including slight injury) (<i>Glossary of Transport Statistics, 2003, p.49/50</i>).	WHO	
7.4	Social Assessment	(No / Emerging / Yes)		Are road construction works and road traffic measures subject by law to a thorough appraisal (at least equivalent to the standards required for WB investment) of social impact and monitoring?		

Note: Refer to IMPORTANT NOTES available separately on:

- **Social and Environmental measures;**
- **Sources of data and definitions.**