



ECOTALE GUIDELINES

12. CITY LOGISTICS

Policy summary

City logistics is critical for the efficiency of the goods delivery systems and for the impacts and sustainability of the connected traffic and operations in central urban areas.

Non regulated or non optimized commercial deliveries within the city centres may lead in disfunctional systems resulting in:

- Increased congestion: freight vehicles, in addition to being generally larger than passenger cars, are generally under-utilised with regards to their load capacity; or, inappropriate heavy goods vehicles are used to reach inner urban destinations (i.e. narrow streets; historical centres);
- Increased air pollution. city logistics contributes significantly to air pollution generated by urban traffic; in particular, remarkable impacts in terms of particulates and NO₂ are caused by diesel HGV/LGV (less recent EURO emission standards);
- Increased costs to industries and to final users, based upon the inefficiencies in travel times;
- Negative social costs, including public health costs from death, illness, injuries; traffic accidents, noise, visual intrusion, and other.

Therefore, the high complexity of influence of city logistics on external costs would have to call for definition and implementation of holistics measures such as mobility master plans (including freight delivery rules and schemes), special delivery spaces, urban logistic spaces and consolidation centres, lorries control schemes, night deliveries, plates recognition systems, regulations for street delivery areas and many others.



Policy topic

- **Air pollution or GH gas**
- Land-use/urban planning/ landscape
- **Traffic noise**
- **Congestion**
- Traditional fiscal instruments
- Accidents, transport safety
- Public transport subsidies/ support
- **Infrastructure investment**
- **Users' behaviour**

SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none"> • Load factor optimization • Reduction of congestion • Urban quality • Reduction of environmental impact • Possibility to collect revenues 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Investments needed • Need of maintenance programs and dedicated staff • Difficulties in monitoring of results • Management and control system • Re-routing of traffic flows • Difficulty on establishing a correct pricing scheme
<p>Opportunities</p> <ul style="list-style-type: none"> • Public acceptance • Aims at having a comprehensive policy in the city • Redistribution of traffic flows • Educational effects 	<p>Threats</p> <ul style="list-style-type: none"> • Legislative framework • Stakeholders acceptance • Possible misperception by citizens and commuters • Market uncertainty

Level of application

- National
- Regional
- **Provincial/Metropolitan area**
- Municipal

External costs

- Congestion and scarcity ++
- Accidents
- Air pollution +
(human health, material damages, nature)
- Noise +
- Climate change
- Urban space +
- Nature and landscape





Methodological suggestions

Cost component	External cost	Cost elements	Cost function/ drivers	Suggested estimation techniques	Data needed	Critical valuation issues
Congestion and scarcity	*increase in travel time x value of time x traffic volume	time and operating costs	increasing marginal cost in relation to traffic amount,	WTP/WTA to estimate the value of time in case of congestion	speed-flow data/relation	speed-flow relations;
		additional safety			traffic level and capacity per road segment	valuation of economically relevant
		environmental costs	time of the day/week/year and region		demand elasticity	value of time (reliability)
Air pollution	Air pollution costs are caused by the emission of particulate matter (PM), Nox, SO2 and VOC. Air pollution costs arise also from industry, agriculture and private households.	health costs	correlation with traffic amount, level of emission and location	repair costs	emission and exposure data (exp. PM, Nox, SO2, VOC)	valuation of life years lost
		years of human life lost				market prices for crops
		building damages				valuation of building damages
		cost for nature and biosphere				valuation of long term risks in biosphere
Noise	Noise can be defined as the unwanted sound that causes physiological and psychological harm to humans. It is recommended to take vulnerable groups, like children and elderly, into account.	rent losses	declining marginal cost curve in relation to traffic amount	WTP hedonic price for noise reduction	noise exposure data	valuation of annoyances
		annoyance costs				
		health costs	*noise emissions levels, depending on: - type of infrastructure - type and condition of vehicle		population and settlement density	
Urban space	Motorised traffic in urban areas has different effects on non-motorised traffic participants (pedestrians, cyclists, etc.).	costs due to scarcity	type of infrastructure	compensation cost approach to compute scarcity	infrastructure network database in urban areas	evaluation process
		inefficiencies in travel times	level of traffic		type of infrastructure	
					inefficiencies in travel times	

Recommendations / Comments

Technical feasibility	Difficult	Public acceptance	Difficult	Equity	Partial
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The success of cities requires that this component of urban transport be better understood and, subsequently, better managed, despite the inherent complexity of real-life transport conditions. This necessity is even more dramatic in the following cases: large urban agglomerations, where the transport networks are generally already under severe duress; environmentally sensitive areas, due to high levels of existing pollution and/or those areas with cultural and natural heritages; rapidly growing cities, where the original transport networks were designed for different, reduced transport patterns and the use of collective transport; this situation is particularly relevant also for new member state cities, where the use of road transport is dramatically growing.

Related Good Practices

- Bristol: urban consolidation center

