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CityMobil

Towards advanced transport for the urban environment

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Annex 2 – Calculation of the robustness of the technological solutions across cities

The methodology adopted for evaluating the robustness of ATs (Advanced Transport System) across cities for a specific urban passenger transport application (UPTA) (which correspond to a cell of the passenger application matrix) in the medium growth scenario with and without complementary measures consists of the following steps:

A2.1. in each city, for each indicator the ATs have been ranked from the best to the worst value and have been assigned a score according to their position in the ranking (City Centre to City Centre application)

1.1.1 Without complementary measures

<u>Cross cities</u>	Indicator	Cross cities Score		
		M0	M1	M3
	Non-car modal share peak	20,5/28	20/28	27/28
	Non-car modal share off-peak	19,5/28	23/28	26/28
	Accessibility of key services	18/28	23,5/28	27,5/28
	Low income zones non-car accessibility	22/28	19,5/28	23,5/28
	Number of accidents	21/28	22/28	25/28
	CO2	19,5/28	21/28	28/28
	NOx	20/28	21/28	28/28
	PM	19/28	21/28	28/28
	Land take index	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	20/21	19/21
	Capital costs	-	21/21	18/21
	MCA	-	19,5/21	19,5/21
	Total score	37,5/56	64,5/77	74,5/77

<u>Gateshead</u>	Indicator	Gateshead score						
		M0	M1	M3	M5	M0	M1	M3
	Non-car modal share peak	34,3%	34,4%	34,5%	34,3%	4,5	6,0	7,0
	Non-car modal share off-peak	41,7%	41,8%	42,4%	41,7%	4,5	6,0	7,0
	Accessibility of key services	100,00	100,22	100,83	100,00	4,5	6,0	7,0
	Low income zones non-car accessibility	100,00	95,75	99,86	100,00	6,5	4,0	5,0
	Number of accidents	100,00	99,79	99,41	100,00	4,5	6,0	7,0
	CO2	100,00	99,77	99,38	100,00	4,5	6,0	7,0
	NOx	100,00	99,78	99,40	100,00	4,5	6,0	7,0
	PM	100,00	99,76	99,37	100,00	4,5	6,0	7,0
	Land take index	100,00	100,00	100,00	100,00	-	-	-
	Benefits costs ratio (BCR)	-	2,59	3,04	N.C.	-	6,0	7,0
	Capital costs (M€)	-	29	123	N.C.	-	7,0	6,0

<u>Madrid</u>	Indicator					Madrid scores		
		M0	M1	M3	M5	M0	M1	M3
	Non-car modal share peak	53,9%	53,8%	53,9%	53,9%	6,0	4,0	6,0
	Non-car modal share off-peak	68,2%	68,2%	68,2%	68,2%	5,5	5,5	5,5
	Accessibility of key services	100,00	100,07	100,09	100,02	4,0	6,0	7,0
	Low income zones non-car accessibility	100,00	99,96	99,99	100,02	6,0	4,0	5,0
	Number of accidents	100,00	99,88	99,86	100,08	5,0	6,0	7,0
	CO2	100,00	99,88	99,86	100,00	4,5	6,0	7,0
	NOx	100,00	99,88	99,86	100,01	5,0	6,0	7,0
	PM	100,00	99,88	99,86	99,99	4,0	6,0	7,0
	Land take index	100,00	100,00	100,00	100,00	-	-	-
	Benefits costs ratio (BCR)	-	0,49	0,15	N.C.	-	7,0	6,0
	Capital costs	-	190	351	N.C.	-	7,0	6,0

<u>Trondheim</u>	Indicator					Trondheim scores		
		M0	M1	M3	M5	M0	M1	M3
	Non-car modal share peak	43,4%	43,4%	43,9%	43,4%	5,0	5,0	7,0
	Non-car modal share off-peak	41,1%	41,1%	44,3%	41,1%	5,0	5,0	7,0
	Accessibility of key services	100,00	100,00	106,34	100,00	5,0	5,0	7,0
	Low income zones non-car accessibility	100,00	100,00	111,24	100,00	5,0	5,0	7,0
	Number of accidents	100,00	100,00	99,93	100,00	5,0	5,0	7,0
	CO2	100,00	100,00	99,85	100,00	5,0	5,0	7,0
	NOx	100,00	100,00	99,87	100,00	5,0	5,0	7,0
	PM	100,00	100,00	99,85	100,00	5,0	5,0	7,0
	Land take index	100,00	100,00	100,00	100,00	-	-	-
	Benefits costs ratio (BCR)	-	-	2,30	N.C.	-	-	-
	Capital costs	-	-	75	N.C.	-	-	-

<u>Vienna indicators</u>	Indicator					Vienna scores		
		M0	M1	M3	M5	M0	M1	M3
	Non-car modal share peak	55,2%	55,2%	55,3%	55,2%	5,0	5,0	7,0
	Non-car modal share off-peak	57,7%	57,8%	57,8%	57,7%	4,5	6,5	6,5
	Accessibility of key services	100,00	100,10	100,10	100,00	4,5	6,5	6,5
	Low income zones non-car accessibility	100,00	100,03	100,03	100,00	4,5	6,5	6,5
	Number of accidents	100,00	100,01	100,16	100,00	6,5	5,0	4,0
	CO2	100,00	100,01	99,94	100,00	5,5	4,0	7,0
	NOx	100,00	100,01	99,98	100,00	5,5	4,0	7,0
	PM	100,00	100,01	99,93	100,00	5,5	4,0	7,0
	Land take index	100,00	100,00	100,00	100,00	-	-	-
	Benefits costs ratio (BCR)	-	-0,61	-0,81	N.C.	-	7,0	6,0
	Capital costs	-	10	48	N.C.	-	7,0	6,0

<u>Multi</u>	City				MCA scores	
		M1	M3	M5	M1	M3

Criteria analysis	Gateshead	0,21	0,49	N.C.	6,0	7,0
	Madrid	0,16	0,16	N.C.	6,5	6,5
	Trondheim	N.C.	0,89	N.C.		
	Vienna	0,32	0,31	N.C.	7,0	6,0

1.);

2. for each ATS the scores thus obtained for each indicator in each city have been added up and divided by the maximum obtainable score (equal to the maximum score by the number of cities in which the ATS has been evaluated);
3. for each indicator the ATS have been ranked from the highest to lowest score and have been assigned, accordingly, a final score;
4. the final scores obtained by each ATS for each indicator have been added up and divided by the maximum score obtainable (equal to the maximum score multiplied by the number of indicators evaluated for that ATS) to obtain the total score.

In order to be able to compare the scores of ATSs which, for a specific UPTA, have been implemented in some cities with those of ATSs implemented in all cities, the numerator and denominator of the fraction have been multiplied by the same factor in order to obtain the denominator corresponding to the maximum obtainable score when the ATS is applied to all four cities. This has been done in order to calculate the total score and identify the overall best performing technology. Table 2 show the adopted nomenclature for application and context scenarios.

This annex consists of one section for each (or group of) urban passenger transport application. Every section includes: one table for each city which has implemented ATSs for that specific UPTA with the value of the indicators for each ATS and the scores for each implemented ATS calculated according the position in the ranking; one table with the MCA function values with the corresponding scores; one table with the cross cities final scores for each indicator and ATS and the total score according to which the best performing ATS has been identified.

Table 1: Score according to the position in the ranking

Position in the ranking	Score	Identifying colour
1 place	7	Green
2 place	6	Blue
3 place	5	Yellow
4 place	4	Orange
5 place	3	Red
6 place	2	Grey
7 place	1	Dark Grey

Table 2: Nomenclature of context and passenger application scenarios tested in MARS

Context Scenarios	Medium growth	
	With complementary measures	Without complementary measures
Do nothing	MW0	M0
Passenger application scenarios	With complementary measures	Without complementary measures
Cybercar (inner city)	MW1	M1
Cybercar (public transport feeder)	MW2	M2
PRT	MW3	M3
High tech bus	MW4	M4
DMV (city wide)	MW5	M5

A2.2. City Centre to City Centre application

1.1.2 Without complementary measures

<u>Cross cities</u>	Indicator	Cross cities Scores			
		M0	M1	M3	M5
	Non-car modal share peak	20,5/28	20/28	27/28	20,5/28
	Non-car modal share off-peak	19,5/28	23/28	26/28	19,5/28
	Accessibility of key services	18/28	23,5/28	27,5/28	19/28
	Low income zones non-car accessibility	22/28	19,5/28	23,5/28	23/28
	Number of accidents	21/28	22/28	25/28	20/28
	CO2	19,5/28	21/28	28/28	19,5/28
	NOx	20/28	21/28	28/28	19/28
	PM	19/28	21/28	28/28	20/28
	Land take index	N.V.	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	20/21	19/21	N.C.
	Capital costs	-	21/21	18/21	N.C.
	MCA	-	19,5/21	19,5/21	N.C.
	Total score	37,5/56	64,5/77	74,5/77	38,5/56

<u>Gateshead</u>	Indicator	Gateshead scores							
		M0	M1	M3	M5	M0	M1	M3	M5
	Non-car modal share peak	34,3%	34,4%	34,5%	34,3%	4,5	6,0	7,0	4,5
	Non-car modal share off-peak	41,7%	41,8%	42,4%	41,7%	4,5	6,0	7,0	4,5
	Accessibility of key services	100,00	100,22	100,83	100,00	4,5	6,0	7,0	4,5
	Low income zones non-car accessibility	100,00	95,75	99,86	100,00	6,5	4,0	5,0	6,5
	Number of accidents	100,00	99,79	99,41	100,00	4,5	6,0	7,0	4,5

CO2	100,00	99,77	99,38	100,00	4,5	6,0	7,0	4,5
NOx	100,00	99,78	99,40	100,00	4,5	6,0	7,0	4,5
PM	100,00	99,76	99,37	100,00	4,5	6,0	7,0	4,5
Land take index	100,00	100,00	100,00	100,00	-	-	-	-
Benefits costs ratio (BCR)	-	2,59	3,04	N.C.	-	6,0	7,0	-
Capital costs (M€)	-	29	123	N.C.	-	7,0	6,0	-

<i>Madrid</i>	Indicator	Madrid scores							
		M0	M1	M3	M5	M0	M1	M3	M5
	Non-car modal share peak	53,9%	53,8%	53,9%	53,9%	6,0	4,0	6,0	6,0
	Non-car modal share off-peak	68,2%	68,2%	68,2%	68,2%	5,5	5,5	5,5	5,5
	Accessibility of key services	100,00	100,07	100,09	100,02	4,0	6,0	7,0	5,0
	Low income zones non-car accessibility	100,00	99,96	99,99	100,02	6,0	4,0	5,0	7,0
	Number of accidents	100,00	99,88	99,86	100,08	5,0	6,0	7,0	4,0
	CO2	100,00	99,88	99,86	100,00	4,5	6,0	7,0	4,5
	NOx	100,00	99,88	99,86	100,01	5,0	6,0	7,0	4,0
	PM	100,00	99,88	99,86	99,99	4,0	6,0	7,0	5,0
	Land take index	100,00	100,00	100,00	100,00	-	-	-	-
	Benefits costs ratio (BCR)	-	0,49	0,15	N.C.	-	7,0	6,0	-
	Capital costs	-	190	351	N.C.	-	7,0	6,0	-

<i>Trondheim</i>	Indicator	Trondheim scores							
		M0	M1	M3	M5	M0	M1	M3	M5
	Non-car modal share peak	43,4%	43,4%	43,9%	43,4%	5,0	5,0	7,0	5,0
	Non-car modal share off-peak	41,1%	41,1%	44,3%	41,1%	5,0	5,0	7,0	5,0
	Accessibility of key services	100,00	100,00	106,34	100,00	5,0	5,0	7,0	5,0
	Low income zones non-car accessibility	100,00	100,00	111,24	100,00	5,0	5,0	7,0	5,0
	Number of accidents	100,00	100,00	99,93	100,00	5,0	5,0	7,0	5,0

CO2	100,00	100,00	99,85	100,00	5,0	5,0	7,0	5,0
NOx	100,00	100,00	99,87	100,00	5,0	5,0	7,0	5,0
PM	100,00	100,00	99,85	100,00	5,0	5,0	7,0	5,0
Land take index	100,00	100,00	100,00	100,00	-	-	-	-
Benefits costs ratio (BCR)	-	-	2,30	N.C.	-	-	-	-
Capital costs	-	-	75	N.C.	-	-	-	-

<i>Vienna</i> <i>indicators</i>	Indicator					Vienna scores			
		M0	M1	M3	M5	M0	M1	M3	M5
	Non-car modal share peak	55,2%	55,2%	55,3%	55,2%	5,0	5,0	7,0	5,0
	Non-car modal share off-peak	57,7%	57,8%	57,8%	57,7%	4,5	6,5	6,5	4,5
	Accessibility of key services	100,00	100,10	100,10	100,00	4,5	6,5	6,5	4,5
	Low income zones non-car accessibility	100,00	100,03	100,03	100,00	4,5	6,5	6,5	4,5
	Number of accidents	100,00	100,01	100,16	100,00	6,5	5,0	4,0	6,5
	CO2	100,00	100,01	99,94	100,00	5,5	4,0	7,0	5,5
	NOx	100,00	100,01	99,98	100,00	5,5	4,0	7,0	5,5
	PM	100,00	100,01	99,93	100,00	5,5	4,0	7,0	5,5
	Land take index	100,00	100,00	100,00	100,00	-	-	-	-
	Benefits costs ratio (BCR)	-	-0,61	-0,81	N.C.	-	7,0	6,0	-
	Capital costs	-	10	48	N.C.	-	7,0	6,0	-

<i>Multi</i> <i>Criteria</i> <i>analysis</i>	City				MCA scores		
		M1	M3	M5	M1	M3	M5
	Gateshead	0,21	0,49	N.C.	6,0	7,0	-
	Madrid	0,16	0,16	N.C.	6,5	6,5	-
	Trondheim	N.C.	0,89	N.C.			-
	Vienna	0,32	0,31	N.C.	7,0	6,0	-

1.1.3 With complementary measures

<u>Cross cities</u>	Indicator	Cross cities Scores				
		M0	MW0	MW1	MW3	MW5
	Non-car modal share peak	12/28	19/28	22,5/28	27,5/28	19/28
	Non-car modal share off-peak	12/28	22/28	21/28	27/28	18/28
	Accessibility of key services	16,5/28	15,5/28	23/28	27,5/28	17,5/28
	Low income zones non-car accessibility	21,5/28	19,5/28	17/28	21,5/28	20,5/28
	Number of accidents	16/28	20/28	21/28	24/28	19/28
	CO2	12/28	19/28	22/28	28/28	19/28
	NOx	12/28	19,5/28	22/28	28/28	18,5/28
	PM	12/28	19/28	21/28	28/28	20/28
	Land take index	N.V.	N.V.	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	N.C.	20/21	19/21	N.C.
	Capital costs	-	N.C.	21/21	18/21	N.C.
	MCA	-	N.C.	19/21	20/21	N.C.
	Total score	28,5/56	36/56	64/77	74,5/77	36/56

<u>Gateshead</u>	Indicator	Gateshead scores									
		M0	MW0	MW1	MW3	MW5	M0	MW0	MW1	MW3	MW5
	Non-car modal share peak	34,3%	35,3%	35,4%	35,5%	35,3%	3,0	4,5	6,0	7,0	4,5
	Non-car modal share off-peak	41,7%	42,4%	42,3%	42,8%	42,2%	3,0	6,0	5,0	7,0	4,0
	Accessibility of key services	100,00	100,00	100,22	100,83	100,00	4,0	4,0	6,0	7,0	4,0
	Low income zones non-car accessibility	100,00	100,00	95,75	99,86	100,00	6,0	6,0	3,0	4,0	6,0
	Number of accidents	100,00	99,03	98,82	98,46	99,03	3,0	4,5	6,0	7,0	4,5
	CO2	100,00	98,75	98,51	98,15	98,75	3,0	4,5	6,0	7,0	4,5

NOx	100,00	98,83	98,61	98,25	98,83	3,0	4,5	6,0	7,0	4,5
PM	100,00	98,71	98,47	98,11	98,71	3,0	4,5	6,0	7,0	4,5
Land take index	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-
Benefits costs ratio (BCR)	-	-	2,59	3,04	N.C.	-	-	6,0	7,0	-
Capital costs	-	-	29	123	N.C.	-	-	7,0	6,0	-

<i>Madrid</i>	Indicator	Madrid scores									
		M0	MW0	MW1	MW3	MW5	M0	MW0	MW1	MW3	MW5
	Non-car modal share peak	53,9%	55,6%	55,6%	55,7%	55,6%	3,0	5,0	5,0	7,0	5,0
	Non-car modal share off-peak	68,2%	68,7%	68,7%	68,7%	68,6%	3,0	6,0	6,0	6,0	4,0
	Accessibility of key services	100,00	99,99	100,06	100,08	100,01	4,0	3,0	6,0	7,0	5,0
	Low income zones non-car accessibility	100,00	99,98	99,94	99,97	99,99	7,0	5,0	3,0	4,0	6,0
	Number of accidents	100,00	99,70	99,58	99,56	99,78	3,0	5,0	6,0	7,0	4,0
	CO2	100,00	98,63	98,51	98,50	98,63	3,0	4,5	6,0	7,0	4,5
	NOx	100,00	98,87	98,76	98,74	98,89	3,0	5,0	6,0	7,0	4,0
	PM	100,00	98,52	98,40	98,38	98,51	3,0	4,0	6,0	7,0	5,0
	Land take index	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-
	Benefits costs ratio (BCR)	-	-	0,49	0,15	N.C.	-	-	7,0	6,0	-
	Capital costs	-	-	190	351	N.C.	-	-	7,0	6,0	-

<i>Trondheim</i>	Indicator	Trondheim scores									
		M0	MW0	MW1	MW3	MW5	M0	MW0	MW1	MW3	MW5
	Non-car modal share peak	43,4%	44,3%	44,3%	44,7%	44,3%	3,0	5,0	5,0	7,0	5,0
	Non-car modal share off-peak	41,1%	41,5%	41,5%	44,6%	41,5%	3,0	5,0	5,0	7,0	5,0
	Accessibility of key services	100,00	100,00	100,00	106,34	100,00	4,5	4,5	4,5	7,0	4,5
	Low income zones non-car accessibility	100,00	100,00	100,00	111,24	100,00	4,5	4,5	4,5	7,0	4,5

Number of accidents	100,00	100,95	100,95	100,86	100,95	7,0	4,0	4,0	6,0	4,0
CO2	100,00	99,44	99,44	99,25	99,44	3,0	5,0	5,0	7,0	5,0
NOx	100,00	99,72	99,72	99,55	99,72	3,0	5,0	5,0	7,0	5,0
PM	100,00	99,34	99,34	99,15	99,34	3,0	5,0	5,0	7,0	5,0
Land take index	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-
Benefits costs ratio (BCR)	-	-	-	2,30	N.C.	-	-	-	-	-
Capital costs	-	-	-	75	N.C.	-	-	-	-	-

<i>Vienna</i>	Indicator	M0					Vienna scores				
		M0	MW0	MW1	MW3	MW5	M0	MW0	MW1	MW3	MW5
	Non-car modal share peak	55,2%	58,1%	58,2%	58,2%	58,1%	3,0	4,5	6,5	6,5	4,5
	Non-car modal share off-peak	57,7%	58,5%	58,5%	58,6%	58,5%	3,0	5,0	5,0	7,0	5,0
	Accessibility of key services	100,00	100,00	100,10	100,10	100,00	4,0	4,0	6,5	6,5	4,0
	Low income zones non-car accessibility	100,00	100,00	100,03	100,03	100,00	4,0	4,0	6,5	6,5	4,0
	Number of accidents	100,00	96,33	96,34	96,44	96,33	3,0	6,5	5,0	4,0	6,5
	CO2	100,00	95,04	95,04	94,99	95,04	3,0	5,0	5,0	7,0	5,0
	NOx	100,00	95,22	95,22	95,19	95,22	3,0	5,0	5,0	7,0	5,0
	PM	100,00	94,91	94,92	94,85	94,91	3,0	5,5	4,0	7,0	5,5
	Land take index	100,00	100,00	100,00	100,00	100,00					
	Benefits costs ratio (BCR)	-	-	-0,61	-0,81	N.C.	-	-	7,0	6,0	-
	Capital costs	-	-	10	48	N.C.	-	-	7,0	6,0	-

<i>Multi Criteria analysis</i>	City	MW1			MCA scores		
		MW1	MW3	MW5	MW1	MW3	MW5
	Gateshead	0,22	0,51	N.C.	6,0	7,0	-
	Madrid	0,16	0,15	N.C.	7,0	6,0	-
	Trondheim	N.C.	0,89	N.C.	-	-	-

Vienna

0,19 0,21

N.C.

6,0

7,0

A2.3. Inner Suburb to City Centre application

1.1.4 Without complementary measures

<u>Cross cities</u>	Indicator	Cross cities scores				
		M0	M1	M3	M4	M5
	Non-car modal share peak	18,5/28	9,5/14	14/14	25,5/28	18,5/28
	Non-car modal share off-peak	18,5/28	9,5/14	14/14	25,5/28	18,5/28
	Accessibility of key services	18/28	9/14	14/14	26/28	19/28
	Low income zones non-car accessibility	20/28	7/14	11/14	27/28	21/28
	Number of accidents	20/28	11/14	14/14	22/28	19/28
	CO2	19,5/28	11/14	14/14	22/28	19,5/28
	NOx	20/28	11/14	14/14	22/28	19/28
	PM	19/28	11/14	14/14	22/28	20/28
	Land take index	-	N.V.	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	6/7	14/14	11/14	N.C.
	Capital costs	-	7/7	13/14	11/14	N.C.
	MCA	-	6/7	14/14	11/14	N.C.
	Total score	29/56	57,5/77	75/77	62/77	30,5/56

<u>Gateshead</u>	Indicator	Gateshead scores									
		M0	M1	M3	M4	M5	M0	M1	M3	M4	M5
	Non-car modal share peak	34,3%	34,4%	34,5%	34,4%	34,3%	3,5	5,5	7,0	5,5	3,5
	Non-car modal share off-peak	41,7%	41,8%	42,4%	41,8%	41,7%	3,5	5,5	7,0	5,5	3,5
	Accessibility of key services	100,00	100,22	100,83	100,34	100,00	3,5	5,0	7,0	6,0	3,5

Low income zones non-car accessibility	100,00	95,75	99,86	100,73	100,00	5,5	3,0	4,0	7,0	5,5
Number of accidents	100,00	99,79	99,41	99,85	100,00	3,5	6,0	7,0	5,0	3,5
CO2	100,00	99,77	99,38	99,83	100,00	3,5	6,0	7,0	5,0	3,5
NOx	100,00	99,78	99,40	99,84	100,00	3,5	6,0	7,0	5,0	3,5
PM	100,00	99,76	99,37	99,82	100,00	3,5	6,0	7,0	5,0	3,5
Land take index	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-
Benefits costs ratio (BCR)	-	2,59	3,04	-0,16	N.C.	-	6,0	7,0	5,0	-
Capital costs (M€)	-	29	123	453	N.C.	-	7,0	6,0	5,0	-

<i>Madrid</i>	Indicator	Madrid scores									
		M0	M1	M3	M4	M5	M0	M1	M3	M4	M5
	Non-car modal share peak	53,9%			54,5%	53,9%	5,5	-	-	7,0	5,5
	Non-car modal share off-peak	68,2%			68,9%	68,2%	5,5	-	-	7,0	5,5
	Accessibility of key services	100,00			100,51	100,02	5,0	-	-	7,0	6,0
	Low income zones non-car accessibility	100,00			101,05	100,02	5,0	-	-	7,0	6,0
	Number of accidents	100,00			99,22	100,08	6,0	-	-	7,0	5,0
	CO2	100,00			99,08	100,00	5,5	-	-	7,0	5,5
	NOx	100,00			99,11	100,01	6,0	-	-	7,0	5,0
	PM	100,00			99,07	99,99	5,0	-	-	7,0	6,0
	Land take index	100,00			100,00	100,00	-	-	-	-	-
	Benefits costs ratio (BCR)	-			-0,82	N.C.	-	-	-	-	-
	Capital costs	-			3622	N.C.	-	-	-	-	-

<i>Trondheim</i>	Indicator	Trondheim scores									
		M0	M1	M3	M4	M5	M0	M1	M3	M4	M5
	Non-car modal share peak	43,4%	43,4%	43,9%	43,5%	43,4%	4,0	4,0	7,0	6,0	4,0

Non-car modal share off-peak	41,1%	41,1%	44,3%	42,0%	41,1%	4,0	4,0	7,0	6,0	4,0
Accessibility of key services	100,00	100,00	106,34	103,61	100,00	4,0	4,0	7,0	6,0	4,0
Low income zones non-car accessibility	100,00	100,00	111,24	109,88	100,00	4,0	4,0	7,0	6,0	4,0
Number of accidents	100,00	100,00	99,93	100,81	100,00	5,0	5,0	7,0	3,0	5,0
CO2	100,00	100,00	99,85	100,67	100,00	5,0	5,0	7,0	3,0	5,0
NOx	100,00	100,00	99,87	100,69	100,00	5,0	5,0	7,0	3,0	5,0
PM	100,00	100,00	99,85	100,66	100,00	5,0	5,0	7,0	3,0	5,0
Land take index	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-
Benefits costs ratio (BCR)	-	0,00	2,30	0,72	N.C.	-	-	7,0	6,0	-
Capital costs	-	0	75	255	N.C.	-	-	7,0	6,0	-

<u>Vienna</u>	Indicator	Vienna scores									
		M0	M1	M3	M4	M5	M0	M1	M3	M4	M5
	Non-car modal share peak	55,2%			55,3%	55,2%	5,5	-	-	7,0	5,5
	Non-car modal share off-peak	57,7%			57,8%	57,7%	5,5	-	-	7,0	5,5
	Accessibility of key services	100,00			100,09	100,00	5,5	-	-	7,0	5,5
	Low income zones non-car accessibility	100,00			100,34	100,00	5,5	-	-	7,0	5,5
	Number of accidents	100,00			99,92	100,00	5,5	-	-	7,0	5,5
	CO2	100,00			99,91	100,00	5,5	-	-	7,0	5,5
	NOx	100,00			99,91	100,00	5,5	-	-	7,0	5,5
	PM	100,00			99,91	100,00	5,5	-	-	7,0	5,5
	Land take index	100,00			100,00	100,00	-	-	-	-	-
	Benefits costs ratio (BCR)	-			-0,96	N.C.	-	-	-	-	-
	Capital costs	-			381	N.C.	-	-	-	-	-

MCA scores

Multi	City	M1	M3	M4	M5	M1	M3	M4	M5
Criteria	Gateshead	0,21	0,49	0,14	N.C.	6,0	7,0	5,0	-
analysis	Madrid			0,61	N.C.	-	-	-	-
	Trondheim	N.C.	0,89	0,24	N.C.		7,0	6,0	-
	Vienna			0,55	N.C.	-	-	-	-

1.1.5 With complementary measures

Cross cities	Indicator	Cross cities scores					
		M0	MW0	MW1	MW3	MW4	MW5
	Non-car modal share peak	12/28	18,5/28	9,5/14	14/14	25,5/28	18,5/28
	Non-car modal share off-peak	12/28	21,5/28	8,5/14	14/14	24,5/28	17,5/28
	Accessibility of key services	16,5/28	15,5/28	8,5/14	14/14	26/28	17,5/28
	Low income zones non-car accessibility	18,5/28	17,5/28	5,5/14	10/14	27/28	19,5/28
	Number of accidents	17/28	19/28	10/14	13/14	21/28	18/28
	CO2	13/28	19,5/28	11/14	14/14	21/28	19,5/28
	NOx	13/28	20/28	11/14	14/14	21/28	19/28
	PM	13/28	19/28	11/14	14/14	21/28	20/28
	Land take index	N.V.	N.V.	N.V.	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	-	6/7	14/14	11/14	N.C.
	Capital costs	-	-	7/7	13/14	11/14	N.C.
	MCA	-	-	6/7	14/14	11/14	N.C.
	Total score	19/56	28/56	56/77	75/77	61/77	31/56

Gateshead	Indicator	Gateshead scores											
		M0	MW0	MW1	MW3	MW4	MW5	M0	MW0	MW1	MW3	MW4	MW5
	Non-car modal share peak	34,3%	35,3%	35,4%	35,5%	35,4%	35,3%	2,0	3,5	5,5	7,0	5,5	3,5

Non-car modal share off-peak	41,7%	42,4%	42,3%	42,8%	42,3%	42,2%	2,0	6,0	4,5	7,0	4,5	3,0
Accessibility of key services	100,00	100,00	100,22	100,83	100,34	100,00	3,0	3,0	5,0	7,0	6,0	3,0
Low income zones non-car accessibility	100,00	100,00	95,75	99,86	100,73	100,00	5,0	5,0	2,0	3,0	7,0	5,0
Number of accidents	100,00	99,03	98,82	98,46	98,86	99,03	2,0	3,5	6,0	7,0	5,0	3,5
CO2	100,00	98,75	98,51	98,15	98,55	98,75	2,0	3,5	6,0	7,0	5,0	3,5
NOx	100,00	98,83	98,61	98,25	98,64	98,83	2,0	3,5	6,0	7,0	5,0	3,5
PM	100,00	98,71	98,47	98,11	98,51	98,71	2,0	3,5	6,0	7,0	5,0	3,5
Land take index	100,00	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-	-
Benefits costs ratio (BCR)	-	-	2,59	3,04	-0,16	N.C.	-	-	6,0	7,0	5,0	-
Capital costs	-	-	29	123	453	N.C.	-	-	7,0	6,0	5,0	-

<i>Madrid</i>	Indicator	Madrid scores											
		M0	MW0	MW1	MW3	MW4	MW5	M0	MW0	MW1	MW3	MW4	MW5
	Non-car modal share peak	53,9%	55,6%			56,2%	55,6%	4,0	5,5	-	-	7,0	5,5
	Non-car modal share off-peak	68,2%	68,7%			69,3%	68,6%	4,0	6,0	-	-	7,0	5,0
	Accessibility of key services	100,00	99,99			100,50	100,01	5,0	4,0	-	-	7,0	6,0
	Low income zones non-car accessibility	100,00	99,98			101,03	99,99	5,0	4,0	-	-	7,0	6,0
	Number of accidents	100,00	99,70			98,84	99,78	4,0	6,0	-	-	7,0	5,0
	CO2	100,00	98,63			97,64	98,63	4,0	5,5	-	-	7,0	5,5
	NOx	100,00	98,87			97,91	98,89	4,0	6,0	-	-	7,0	5,0
	PM	100,00	98,52			97,52	98,51	4,0	5,0	-	-	7,0	6,0
	Land take index	100,00	100,00			100,00	100,00	-	-	-	-	-	-
	Benefits costs ratio (BCR)	-	-			-0,82	N.C.	-	-	-	-	-	-
	Capital costs	-	-			3622	N.C.	-	-	-	-	-	-

Trondheim scores

Trondheim	Indicator	M0	MW0	MW1	MW3	MW4	MW5	M0	MW0	MW1	MW3	MW4	MW5
	Non-car modal share peak	43,4%	44,3%	44,3%	44,7%	44,4%	44,3%	2,0	4,0	4,0	7,0	6,0	4,0
	Non-car modal share off-peak	41,1%	41,5%	41,5%	44,6%	42,5%	41,5%	2,0	4,0	4,0	7,0	6,0	4,0
	Accessibility of key services	100,00	100,00	100,00	106,34	103,61	100,00	3,5	3,5	3,5	7,0	6,0	3,5
	Low income zones non-car accessibility	100,00	100,00	100,00	111,24	109,88	100,00	3,5	3,5	3,5	7,0	6,0	3,5
	Number of accidents	100,00	100,95	100,95	100,86	101,78	100,95	7,0	4,0	4,0	6,0	2,0	4,0
	CO2	100,00	99,44	99,44	99,25	100,11	99,44	3,0	5,0	5,0	7,0	2,0	5,0
	NOx	100,00	99,72	99,72	99,55	100,42	99,72	3,0	5,0	5,0	7,0	2,0	5,0
	PM	100,00	99,34	99,34	99,15	100,01	99,34	3,0	5,0	5,0	7,0	2,0	5,0
	Land take index	100,00	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-	-
	Benefits costs ratio (BCR)	-	-	0,00	2,30	0,72	N.C.	-	-	-	7,0	6,0	-
	Capital costs	-	-	0	75	255	N.C.	-	-	-	7,0	6,0	-

Vienna	Indicator	M0	MW0	MW1	MW3	MW4	MW5	Vienna scores					
								M0	MW0	MW1	MW3	MW4	MW5
	Non-car modal share peak	55,2%	58,1%			58,2%	58,1%	4,0	5,5	-	-	7,0	5,5
	Non-car modal share off-peak	57,7%	58,5%			58,7%	58,5%	4,0	5,5	-	-	7,0	5,5
	Accessibility of key services	100,00	100,00			100,09	100,00	5,0	5,0	-	-	7,0	5,0
	Low income zones non-car accessibility	100,00	100,00			100,34	100,00	5,0	5,0	-	-	7,0	5,0
	Number of accidents	100,00	96,33			96,22	96,33	4,0	5,5	-	-	7,0	5,5
	CO2	100,00	95,04			94,93	95,04	4,0	5,5	-	-	7,0	5,5
	NOx	100,00	95,22			95,11	95,22	4,0	5,5	-	-	7,0	5,5
	PM	100,00	94,91			94,80	94,91	4,0	5,5	-	-	7,0	5,5
	Land take index	100,00	100,00			100,00	100,00	-	-	-	-	-	-
	Benefits costs ratio (BCR)	-	-			-0,96	N.C.	-	-	-	-	-	-
	Capital costs	-	-			381	N.C.	-	-	-	-	-	-

<u>Multi</u>	City	MCA scores							
		MW1	MW3	MW4	MW5	MW1	MW3	MW4	MW5
<u>Criteria</u>	Gateshead	0,22	0,51	0,16	N.C.	6,0	7,0	5,0	-
<u>analysis</u>	Madrid			0,62	N.C.	-	-	-	-
	Trondheim	N.C.	0,89	0,24	N.C.	-	7,0	6,0	-
	Vienna			0,55	N.C.	-	-	-	-

A2.4. Inner Suburb to Inner Suburb application

1.1.6 Without complementary measures

<u>Cross cities</u>	Indicator	Cross cities scores					
		M0	M1	M2	M3	M4	M5
	Non-car modal share peak	14,5/28	7,5/14	25,5/28	13/14	23/28	14,5/28
	Non-car modal share off-peak	15,5/28	9/14	19,5/28	14/14	24,5/28	15,5/28
	Accessibility of key services	14,5/28	7,5/14	23/28	13/14	24/28	16/28
	Low income zones non-car accessibility	16,5/28	5,5/14	22,5/28	10/14	25/28	18,5/28
	Number of accidents	18/28	10/14	21/28	13/14	19/28	17/28
	CO2	17,5/28	10/14	21/28	13/14	19/28	17,5/28
	NOx	18/28	10/14	21/28	13/14	19/28	17/28
	PM	17/28	10/14	21/28	13/14	19/28	18/28
	Land take index	N.V.	N.V.	N.V.	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	N.C.	6/7	24/28	14/14	22/28	N.C.
	Capital costs	N.C.	7/7	27/28	11/14	21/28	N.C.
	MCA	N.C.	5/7	25/28	13/14	23/28	N.C.
	Total scores	20,5/56	49,5/77	63,5/77	73/77	53/77	22,5/56

<i>Gateshead</i>	Indicator							Gateshead scores					
		M0	M1	M2	M3	M4	M5	M0	M1	M2	M3	M4	M5
	Non-car modal share peak	34,3%	34,4%	34,6%	34,5%	34,4%	34,3%	2,5	4,5	7,0	6,0	4,5	2,5
	Non-car modal share off-peak	41,7%	41,8%	41,7%	42,4%	41,8%	41,7%	3,0	5,5	3,0	7,0	5,5	3,0
	Accessibility of key services	100,00	100,22	103,26	100,83	100,34	100,00	2,5	4,0	7,0	6,0	5,0	2,5
	Low income zones non-car accessibility	100,00	95,75	116,07	99,86	100,73	100,00	4,5	2,0	7,0	3,0	6,0	4,5
	Number of accidents	100,00	99,79	99,17	99,41	99,85	100,00	2,5	5,0	7,0	6,0	4,0	2,5
	CO2	100,00	99,77	99,00	99,38	99,83	100,00	2,5	5,0	7,0	6,0	4,0	2,5
	NOx	100,00	99,78	99,07	99,40	99,84	100,00	2,5	5,0	7,0	6,0	4,0	2,5
	PM	100,00	99,76	98,98	99,37	99,82	100,00	2,5	5,0	7,0	6,0	4,0	2,5
	Land take index	100,00	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-	-
	Benefits costs ratio (BCR)	-	2,59	2,47	3,04	-0,16	N.C.	-	6,0	5,0	7,0	4,0	-
	Capital costs (M€)	-	29	35	123	453	N.C.	-	7,0	6,0	5,0	4,0	-

<i>Madrid</i>	Indicator							Madrid scores					
		M0	M1	M2	M3	M4	M5	M0	M1	M2	M3	M4	M5
	Non-car modal share peak	53,9%		54,4%		54,5%	53,9%	4,5		6,0		7,0	4,5
	Non-car modal share off-peak	68,2%		68,3%		68,9%	68,2%	4,5		6,0		7,0	4,5
	Accessibility of key services	100,00		100,02		100,51	100,02	4,0		5,5		7,0	5,5
	Low income zones non-car accessibility	100,00		100,01		101,05	100,02	4,0		5,0		7,0	6,0
	Number of accidents	100,00		98,60		99,22	100,08	5,0		7,0		6,0	4,0
	CO2	100,00		98,60		99,08	100,00	4,5		7,0		6,0	4,5
	NOx	100,00		98,59		99,11	100,01	5,0		7,0		6,0	4,0
	PM	100,00		98,60		99,07	99,99	4,0		7,0		6,0	5,0
	Land take index	100,00		100,00		100,00	100,00	-	-	-	-	-	-
	Benefits costs ratio (BCR)	-		0,38		-0,82	N.C.	-	-	7,0		6,0	-
	Capital costs	-		195		3622	N.C.	-	-	7,0		6,0	-

<u>Trondheim</u>	Indicator	Trondheim scores											
		M0	M1	M2	M3	M4	M5	M0	M1	M2	M3	M4	M5
	Non-car modal share peak	43,4%	43,4%	43,5%	43,9%	43,5%	43,4%	3,0	3,0	5,5	7,0	5,5	3,0
	Non-car modal share off-peak	41,1%	41,1%	41,1%	44,3%	42,0%	41,1%	3,5	3,5	3,5	7,0	6,0	3,5
	Accessibility of key services	100,00	100,00	100,00	106,34	103,61	100,00	3,5	3,5	3,5	7,0	6,0	3,5
	Low income zones non-car accessibility	100,00	100,00	100,00	111,24	109,88	100,00	3,5	3,5	3,5	7,0	6,0	3,5
	Number of accidents	100,00	100,00	100,05	99,93	100,81	100,00	5,0	5,0	3,0	7,0	2,0	5,0
	CO2	100,00	100,00	100,03	99,85	100,67	100,00	5,0	5,0	3,0	7,0	2,0	5,0
	NOx	100,00	100,00	100,03	99,87	100,69	100,00	5,0	5,0	3,0	7,0	2,0	5,0
	PM	100,00	100,00	100,02	99,85	100,66	100,00	5,0	5,0	3,0	7,0	2,0	5,0
	Land take index	100,00	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-	-
	Benefits costs ratio (BCR)	-	0,00	-0,82	2,30	0,72	N.C.	-	-	5,0	7,0	6,0	-
	Capital costs	-	0	17	75	255	N.C.	-	-	7,0	6,0	5,0	-

<u>Vienna</u>	Indicator	Vienna scores											
		M0	M1	M2	M3	M4	M5	M0	M1	M2	M3	M4	M5
	Non-car modal share peak	55,2%		55,5%		55,3%	55,2%	4,5	-	7,0	-	6,0	4,5
	Non-car modal share off-peak	57,7%		58,0%		57,8%	57,7%	4,5	-	7,0	-	6,0	4,5
	Accessibility of key services	100,00		101,09		100,09	100,00	4,5	-	7,0	-	6,0	4,5
	Low income zones non-car accessibility	100,00		101,95		100,34	100,00	4,5	-	7,0	-	6,0	4,5
	Number of accidents	100,00		100,11		99,92	100,00	5,5	-	4,0	-	7,0	5,5
	CO2	100,00		100,05		99,91	100,00	5,5	-	4,0	-	7,0	5,5
	NOx	100,00		100,05		99,91	100,00	5,5	-	4,0	-	7,0	5,5
	PM	100,00		100,05		99,91	100,00	5,5	-	4,0	-	7,0	5,5
	Land take index	100,00		100,00		100,00	100,00	-	-	-	-	-	-
	Benefits costs ratio (BCR)	-		-0,65		-0,96	N.C.	-	-	7,0	-	6,0	-

Capital costs	-	95	381	N.C.	-	-	7,0	-	6,0	-
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<u>Multi</u>	City						MCA scores				
		M1	M2	M3	M4	M5	M1	M2	M3	M4	M5
<u>Criteria</u>	Gateshead	0,21	0,88	0,49	0,14	N.C.	5,0	7,0	6,0	4,0	-
<u>analysis</u>	Madrid		0,60		0,61	N.C.	-	6,0	-	7,0	-
	Trondheim	N.C.	0,42	0,89	0,24	N.C.	-	6,0	7,0	5,0	-
	Vienna		0,41		0,55	N.C.	-	6,0	-	7,0	-

1.1.7 With complementary measures

<u>Cross cities</u>	Indicator	Cross cities score						
		M0	MW0	MW1	MW2	MW3	MW4	MW5
	Non-car modal share peak	8/28	14,5/28	7,5/14	26/28	13/14	22,5/28	14,5/28
	Non-car modal share off-peak	8/28	19,5/28	8/14	18/28	14/14	23,5/28	15/28
	Accessibility of key services	13/28	12/28	7/14	22,5/28	13/14	24/28	14,5/28
	Low income zones non-car accessibility	17/28	14/28	4/14	21,5/28	9/14	25/28	15,5/28
	Number of accidents	14/28	17/28	9/14	20/28	12/14	18/28	16/28
	CO2	9/28	16,5/28	10/14	23/28	13/14	18/28	16,5/28
	NOx	9/28	17/28	10/14	23/28	13/14	18/28	16/28
	PM	9/28	16,5/28	10/14	22/28	13/14	18/28	17,5/28
	Land take index	N.V.	N.V.	N.V.	N.V.	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	-	6/7	24/28	14/14	22/28	N.C.
	Capital costs	-	-	7/7	27/28	11/14	21/28	N.C.
	MCA	-	-	5/7	25/28	13/14	23/28	N.C.
	Total score	12/56	21/56	47/77	63/77	72,5/77	53,5/77	21/56

<i>Gateshead</i>	Indicator	Gateshead scores													
		M0	MW0	MW1	MW2	MW3	MW4	MW5	M0	MW0	MW1	MW2	MW3	MW4	MW5
	Non-car modal share peak	34,3%	35,3%	35,4%	35,6%	35,5%	35,4%	35,3%	1,0	2,5	4,5	7,0	6,0	4,5	2,5
	Non-car modal share off-peak	41,7%	42,4%	42,3%	42,1%	42,8%	42,3%	42,2%	1,0	6,0	4,5	2,0	7,0	4,5	3,0
	Accessibility of key services	100,00	100,00	100,22	102,92	100,83	100,34	100,00	2,0	2,0	4,0	7,0	6,0	5,0	2,0
	Low income zones non-car accessibility	100,00	100,00	95,75	112,97	99,86	100,73	100,00	4,0	4,0	1,0	7,0	2,0	6,0	4,0
	Number of accidents	100,00	99,03	98,82	98,23	98,46	98,86	99,03	1,0	2,5	5,0	7,0	6,0	4,0	2,5
	CO2	100,00	98,75	98,51	97,80	98,15	98,55	98,75	1,0	2,5	5,0	7,0	6,0	4,0	2,5
	NOx	100,00	98,83	98,61	97,94	98,25	98,64	98,83	1,0	2,5	5,0	7,0	6,0	4,0	2,5
	PM	100,00	98,71	98,47	97,74	98,11	98,51	98,71	1,0	2,5	5,0	7,0	6,0	4,0	2,5
	Land take index	100,00	100,00	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-	-	-
	Benefits costs ratio (BCR)	-	-	2,59	2,47	3,04	-0,16	N.C.	-	-	6,0	5,0	7,0	4,0	-
	Capital costs	-	-	29	35	123	453	N.C.	-	-	7,0	6,0	5,0	4,0	-

<i>Madrid</i>	Indicator	Madrid scores													
		M0	MW0	MW1	MW2	MW3	MW4	MW5	M0	MW0	MW1	MW2	MW3	MW4	MW5
	Non-car modal share peak	53,9%	55,6%		56,2%		56,2%	55,6%	3,0	4,5	-	6,5	-	6,5	4,5
	Non-car modal share off-peak	68,2%	68,7%		68,7%		69,3%	68,6%	3,0	5,5	-	5,5	-	7,0	4,0
	Accessibility of key services	100,00	99,99		100,01		100,50	100,01	4,0	3,0	-	5,5	-	7,0	5,5
	Low income zones non-car accessibility	100,00	99,98		99,99		101,03	99,99	6,0	3,0	-	4,5	-	7,0	4,5
	Number of accidents	100,00	99,70		98,20		98,84	99,78	3,0	5,0	-	7,0	-	6,0	4,0
	CO2	100,00	98,63		97,14		97,64	98,63	3,0	4,5	-	7,0	-	6,0	4,5
	NOx	100,00	98,87		97,37		97,91	98,89	3,0	5,0	-	7,0	-	6,0	4,0
	PM	100,00	98,52		97,03		97,52	98,51	3,0	4,0	-	7,0	-	6,0	5,0
	Land take index	100,00	100,00		100,00		100,00	100,00	-	-	-	-	-	-	-
	Benefits costs ratio (BCR)	-	-		0,38		-0,82	N.C.	-	-	-	7,0	-	6,0	-
	Capital costs	-	-		195		3622	N.C.	-	-	-	7,0	-	6,0	-

<i>Trondheim</i>	Indicator	Trondheim scores														
		M0	MW0	MW1	MW2	MW3	MW4	MW5	M0	MW0	MW1	MW2	MW3	MW4	MW5	
	Non-car modal share peak	43,4%	44,3%	44,3%	44,4%	44,7%	44,4%	44,3%	1,0	3,0	3,0	5,5	7,0	5,5	3,0	
	Non-car modal share off-peak	41,1%	41,5%	41,5%	41,5%	44,6%	42,5%	41,5%	1,0	3,5	3,5	3,5	7,0	6,0	3,5	
	Accessibility of key services	100,00	100,00	100,00	100,00	106,34	103,61	100,00	3,0	3,0	3,0	3,0	7,0	6,0	3,0	
	Low income zones non-car accessibility	100,00	100,00	100,00	100,00	111,24	109,88	100,00	3,0	3,0	3,0	3,0	7,0	6,0	3,0	
	Number of accidents	100,00	100,95	100,95	101,00	100,86	101,78	100,95	7,0	4,0	4,0	2,0	6,0	1,0	4,0	
	CO2	100,00	99,44	99,44	99,46	99,25	100,11	99,44	2,0	5,0	5,0	3,0	7,0	1,0	5,0	
	NOx	100,00	99,72	99,72	99,74	99,55	100,42	99,72	2,0	5,0	5,0	3,0	7,0	1,0	5,0	
	PM	100,00	99,34	99,34	99,36	99,15	100,01	99,34	2,0	5,0	5,0	3,0	7,0	1,0	5,0	
	Land take index	100,00	100,00	100,00	100,00	100,00	100,00	100,00	-	-	-	-	-	-	-	
	Benefits costs ratio (BCR)	-	-	0,00	-0,82	2,30	0,72	N.C.	-	-	-	5,0	7,0	6,0	-	
	Capital costs	-	-	0	17	75	255	N.C.	-	-	-	7,0	6,0	5,0	-	

<i>Vienna</i>	Indicator	Vienna scores														
		M0	MW0	MW1	MW2	MW3	MW4	MW5	M0	MW0	MW1	MW2	MW3	MW4	MW5	
	Non-car modal share peak	55,2%	58,1%		58,5%		58,2%	58,1%	3,0	4,5	-	7,0	-	6,0	4,5	
	Non-car modal share off-peak	57,7%	58,5%		58,8%		58,7%	58,5%	3,0	4,5	-	7,0	-	6,0	4,5	
	Accessibility of key services	100,00	100,00		101,09		100,09	100,00	4,0	4,0	-	7,0	-	6,0	4,0	
	Low income zones non-car accessibility	100,00	100,00		101,95		100,34	100,00	4,0	4,0	-	7,0	-	6,0	4,0	
	Number of accidents	100,00	96,33		96,38		96,22	96,33	3,0	5,5	-	4,0	-	7,0	5,5	
	CO2	100,00	95,04		95,03		94,93	95,04	3,0	4,5	-	6,0	-	7,0	4,5	
	NOx	100,00	95,22		95,21		95,11	95,22	3,0	4,5	-	6,0	-	7,0	4,5	
	PM	100,00	94,91		94,91		94,80	94,91	3,0	5,0	-	5,0	-	7,0	5,0	
	Land take index	100,00	100,00		100,00		100,00	100,00	-	-	-	-	-	-	-	
	Benefits costs ratio (BCR)	-	-		-0,65		-0,96	N.C.	-	-	-	7,0	-	6,0	-	

Capital costs	-	-	95	381	N.C.	-	-	-	7,0	-	6,0	-
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<u>Multi</u>	City						MCA scores				
		MW1	MW2	MW3	MW4	MW5	MW1	MW2	MW3	MW4	MW5
<u>Criteria</u>	Gateshead	0,22	0,88	0,51	0,16	N.C.	5,0	7,0	6,0	4,0	-
<u>analysis</u>	Madrid		0,60		0,62	N.C.	-	6,0	-	7,0	-
	Trondheim	N.C.	0,41	0,89	0,24	N.C.	-	6,0	7,0	5,0	-
	Vienna		0,44		0,55	N.C.	-	6,0	-	7,0	-

A2.5. Outer Suburb to City Centre and Outer Suburb to Inner Suburb applications

1.1.8 Without complementary measures

<u>Cross cities</u>	Indicator	Cross cities scores		
		M0	M4	M5
	Non-car modal share peak	11/14	14/14	11/14
	Non-car modal share off-peak	11/14	14/14	11/14
	Accessibility of key services	10,5/14	14/14	11,5/14
	Low income zones non-car accessibility	10,5/14	14/14	11,5/14
	Number of accidents	12,5/14	12/14	11,5/14
	CO2	12/14	12/14	12/14
	NOx	12,5/14	12/14	11,5/14
	PM	11,5/14	12/14	12,5/14
	Land take index	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	-	N.C.
	Capital costs	-	-	N.C.
	MCA	-	-	N.C.
	Total score	46/56	52/56	46/56

<u>Madrid</u>	Indicator	Madrid scores					
		M0	M4	M5	M0	M4	M5
	Non-car modal share peak	53,9%	54,5%	53,9%	5,5	7,0	5,5
	Non-car modal share off-peak	68,2%	68,9%	68,2%	5,5	7,0	5,5
	Accessibility of key services	100,00	100,51	100,02	5,0	7,0	6,0
	Low income zones non-car accessibility	100,00	101,05	100,02	5,0	7,0	6,0
	Number of accidents	100,00	99,22	100,08	6,0	7,0	5,0
	CO2	100,00	99,08	100,00	5,5	7,0	5,5
	NOx	100,00	99,11	100,01	6,0	7,0	5,0
	PM	100,00	99,07	99,99	5,0	7,0	6,0
	Land take index	100,00	100,00	100,00	-	-	-
	Benefits costs ratio (BCR)	-	-0,82	N.C.	-	-	-
	Capital costs	-	3622	N.C.	-	-	-

<u>Trondheim</u>	Indicator	Trondheim scores					
		M0	M4	M5	M0	M4	M5
	Non-car modal share peak	43,4%	43,5%	43,4%	5,5	7,0	5,5
	Non-car modal share off-peak	41,1%	42,0%	41,1%	5,5	7,0	5,5
	Accessibility of key services	100,00	103,61	100,00	5,5	7,0	5,5
	Low income zones non-car accessibility	100,00	109,88	100,00	5,5	7,0	5,5
	Number of accidents	100,00	100,81	100,00	6,5	5,0	6,5
	CO2	100,00	100,67	100,00	6,5	5,0	6,5
	NOx	100,00	100,69	100,00	6,5	5,0	6,5
	PM	100,00	100,66	100,00	6,5	5,0	6,5
	Land take index	100,00	100,00	100,00	-	-	-
	Benefits costs ratio (BCR)	-	0,72	N.C.	-	-	-
	Capital costs	-	255	N.C.	-	-	-

<u>Multi</u> <u>Criteria</u> <u>analysis</u>	City	MCA scores			
		M4	M5	M4	M5
	Madrid	0,61	N.C.		
	Trondheim	0,24	N.C.		

1.1.9 With complementary measures

<u>Cross cities</u>	Indicator	Cross cities scores			
		M0	MW0	MW4	MW5
	Non-car modal share peak	8/14	11/14	14/14	11/14
	Non-car modal share off-peak	8/14	11,5/14	14/14	10,5/14
	Accessibility of key services	10/14	9/14	14/14	11/14
	Low income zones non-car accessibility	11/14	9/14	14/14	10/14
	Number of accidents	11/14	11,5/14	11/14	10,5/14
	CO2	9/14	12/14	11/14	12/14
	NOx	9/14	12,5/14	11/14	11,5/14
	PM	9/14	11,5/14	11/14	12,5/14
	Land take index	N.V.	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	N.C.	-	N.C.
	Capital costs	-	N.C.	-	N.C.
	MCA	-	N.C.	-	N.C.
	Total score	36,5/56	46/56	48,5/56	45/56

<u>Madrid</u>	Indicator	Madrid scores							
		M0	MW0	MW4	MW5	M0	MW0	MW4	MW5
	Non-car modal share peak	53,9%	55,6%	56,2%	55,6%	4,0	5,5	7,0	5,5
	Non-car modal share off-peak	68,2%	68,7%	69,3%	68,6%	4,0	6,0	7,0	5,0
	Accessibility of key services	100,00	99,99	100,50	100,01	5,0	4,0	7,0	6,0

Low income zones non-car accessibility	100,00	99,98	101,03	99,99	6,0	4,0	7,0	5,0
Number of accidents	100,00	99,70	98,84	99,78	4,0	6,0	7,0	5,0
CO2	100,00	98,63	97,64	98,63	4,0	5,5	7,0	5,5
NOx	100,00	98,87	97,91	98,89	4,0	6,0	7,0	5,0
PM	100,00	98,52	97,52	98,51	4,0	5,0	7,0	6,0
Land take index	100,00	100,00	100,00	100,00	-	-	-	-
Benefits costs ratio (BCR)	-	-	-0,82	N.C.	-	-	-	-
Capital costs	-	-	3622	N.C.	-	-	-	-

<u>Trondheim</u>	Indicator	Trondheim scores							
		M0	MW0	MW4	MW5	M0	MW0	MW4	MW5
	Non-car modal share peak	43,4%	44,3%	44,4%	44,3%	4,0	5,5	7,0	5,5
	Non-car modal share off-peak	41,1%	41,5%	42,5%	41,5%	4,0	5,5	7,0	5,5
	Accessibility of key services	100,00	100,00	103,61	100,00	5,0	5,0	7,0	5,0
	Low income zones non-car accessibility	100,00	100,00	109,88	100,00	5,0	5,0	7,0	5,0
	Number of accidents	100,00	100,95	101,78	100,95	7,0	5,5	4,0	5,5
	CO2	100,00	99,44	100,11	99,44	5,0	6,5	4,0	6,5
	NOx	100,00	99,72	100,42	99,72	5,0	6,5	4,0	6,5
	PM	100,00	99,34	100,01	99,34	5,0	6,5	4,0	6,5
	Land take index	100,00	100,00	100,00	100,00	-	-	-	-
	Benefits costs ratio (BCR)	-	-	0,72	N.C.	-	-	-	-
	Capital costs	-	-	255	N.C.	-	-	-	-

<u>Multi</u>	City	MCA scores			
		MW4	MW5	MW4	MW5
<u>Criteria</u>	Madrid	0,62	N.C.	-	-
<u>analysis</u>	Trondheim	0,24	N.C.	-	-

A2.6. Corridor to City Centre and Corridor to Inner Suburb applications

1.1.10 Without complementary measures

<u>Cross cities</u>	Indicator	Cross cities scores		
		M0	M4	M5
	Non-car modal share peak	22/28	24/28	22/28
	Non-car modal share off-peak	22/28	24/28	22/28
	Accessibility of key services	21,5/28	24/28	22,5/28
	Low income zones non-car accessibility	21,5/28	24/28	22,5/28
	Number of accidents	23,5/28	26/28	22,5/28
	CO2	23/28	26/28	23/28
	NOx	23,5/28	26/28	22,5/28
	PM	22,5/28	26/28	23,5/28
	Land take index	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	-	N.C.
	Capital costs	-	-	N.C.
	MCA	-	-	N.C.
	Total score	43,5/56	56/56	44,5/56

<u>Gateshead</u>	Indicator	Gateshead scores					
		M0	M4	M5	M0	M4	M5
	Non-car modal share peak	34,3%	34,4%	34,3%	5,5	7,0	5,5
	Non-car modal share off-peak	41,7%	41,8%	41,7%	5,5	7,0	5,5
	Accessibility of key services	100,00	100,34	100,00	5,5	7,0	5,5
	Low income zones non-car accessibility	100,00	100,73	100,00	5,5	7,0	5,5
	Number of accidents	100,00	99,85	100,00	5,5	7,0	5,5

CO2	100,00	99,83	100,00	5,5	7,0	5,5
NOx	100,00	99,84	100,00	5,5	7,0	5,5
PM	100,00	99,82	100,00	5,5	7,0	5,5
Land take index	100,00	100,00	100,00	-	-	-
Benefits costs ratio (BCR)	-	-0,16	N.C.	-	-	-
Capital costs (M€)	-	453	N.C.	-	-	-

<u>Madrid</u>	Indicator	Madrid scores					
		M0	M4	M5	M0	M4	M5
	Non-car modal share peak	53,9%	54,5%	53,9%	5,5	7,0	5,5
	Non-car modal share off-peak	68,2%	68,9%	68,2%	5,5	7,0	5,5
	Accessibility of key services	100,00	100,51	100,02	5,0	7,0	6,0
	Low income zones non-car accessibility	100,00	101,05	100,02	5,0	7,0	6,0
	Number of accidents	100,00	99,22	100,08	6,0	7,0	5,0
	CO2	100,00	99,08	100,00	5,5	7,0	5,5
	NOx	100,00	99,11	100,01	6,0	7,0	5,0
	PM	100,00	99,07	99,99	5,0	7,0	6,0
	Land take index	100,00	100,00	100,00	-	-	-
	Benefits costs ratio (BCR)	-	-0,82	N.C.	-	-	-
	Capital costs	-	3622	N.C.	-	-	-

<u>Trondheim</u>	Indicator	Trondheim scores					
		M0	M4	M5	M0	M4	M5
	Non-car modal share peak	43,4%	43,5%	43,4%	5,5	7,0	5,5
	Non-car modal share off-peak	41,1%	42,0%	41,1%	5,5	7,0	5,5
	Accessibility of key services	100,00	103,61	100,00	5,5	7,0	5,5
	Low income zones non-car accessibility	100,00	109,88	100,00	5,5	7,0	5,5
	Number of accidents	100,00	100,81	100,00	6,5	5,0	6,5
	CO2	100,00	100,67	100,00	6,5	5,0	6,5

NOx	100,00	100,69	100,00	6,5	5,0	6,5
PM	100,00	100,66	100,00	6,5	5,0	6,5
Land take index	100,00	100,00	100,00	-	-	-
Benefits costs ratio (BCR)	-	0,72	N.C.	-	-	-
Capital costs	-	255	N.C.	-	-	-

<i>Vienna</i>	Indicator	Vienna scores					
		M0	M4	M5	M0	M4	M5
	Non-car modal share peak	55,2%	55,3%	55,2%	5,5	7,0	5,5
	Non-car modal share off-peak	57,7%	57,8%	57,7%	5,5	7,0	5,5
	Accessibility of key services	100,00	100,09	100,00	5,5	7,0	5,5
	Low income zones non-car accessibility	100,00	100,34	100,00	5,5	7,0	5,5
	Number of accidents	100,00	99,92	100,00	5,5	7,0	5,5
	CO2	100,00	99,91	100,00	5,5	7,0	5,5
	NOx	100,00	99,91	100,00	5,5	7,0	5,5
	PM	100,00	99,91	100,00	5,5	7,0	5,5
	Land take index	100,00	100,00	100,00	-	-	-
	Benefits costs ratio (BCR)	-	-0,96	N.C.	-	-	-
	Capital costs	-	381	N.C.	-	-	-

<i>Multi Criteria analysis</i>	City	MCA scores			
		M4	M5	M4	M5
	Gateshead	0,14	N.C.	-	-
	Madrid	0,61	N.C.	-	-
	Trondheim	0,24	N.C.	-	-
	Vienna	0,55	N.C.	-	-

1.1.11 With complementary measures

<u>Cross cities</u>	Indicator	Cross cities scores			
		M0	MW0	MW4	MW5
	Non-car modal share peak	16/28	22/28	28/28	22/28
	Non-car modal share off-peak	16/28	24/28	27/28	21/28
	Accessibility of key services	20/28	19/28	28/28	21/28
	Low income zones non-car accessibility	21/28	19/28	28/28	20/28
	Number of accidents	19/28	22,5/28	25/28	21,5/28
	CO2	17/28	23/28	25/28	23/28
	NOx	17/28	23,5/28	25/28	22,5/28
	PM	17/28	22,5/28	25/28	23,5/28
	Land take index	N.V.	N.V.	N.V.	N.V.
	Benefits costs ratio (BCR)	-	N.C.	-	N.C.
	Capital costs	-	N.C.	-	N.C.
	MCA	-	N.C.	-	N.C.
	Total score	35/56	42/56	56/56	43/56

<u>Gateshead</u>	Indicator	Gateshead scores							
		M0	MW0	MW4	MW5	M0	MW0	MW4	MW5
	Non-car modal share peak	34,3%	35,3%	35,4%	35,3%	4,0	5,5	7,0	5,5
	Non-car modal share off-peak	41,7%	42,4%	42,3%	42,2%	4,0	7,0	6,0	5,0
	Accessibility of key services	100,00	100,00	100,34	100,00	5,0	5,0	7,0	5,0
	Low income zones non-car accessibility	100,00	100,00	100,73	100,00	5,0	5,0	7,0	5,0
	Number of accidents	100,00	99,03	98,86	99,03	4,0	5,5	7,0	5,5
	CO2	100,00	98,75	98,55	98,75	4,0	5,5	7,0	5,5
	NOx	100,00	98,83	98,64	98,83	4,0	5,5	7,0	5,5
	PM	100,00	98,71	98,51	98,71	4,0	5,5	7,0	5,5
	Land take index	100,00	100,00	100,00	100,00				

Benefits costs ratio (BCR)	-	-	-0,16	N.C.
Capital costs	-	-	453	N.C.

Madrid	Indicator	Madrid scores							
		M0	MW0	MW4	MW5	M0	MW0	MW4	MW5
	Non-car modal share peak	53,9%	55,6%	56,2%	55,6%	4,0	5,5	7,0	5,5
	Non-car modal share off-peak	68,2%	68,7%	69,3%	68,6%	4,0	6,0	7,0	5,0
	Accessibility of key services	100,00	99,99	100,50	100,01	5,0	4,0	7,0	6,0
	Low income zones non-car accessibility	100,00	99,98	101,03	99,99	6,0	4,0	7,0	5,0
	Number of accidents	100,00	99,70	98,84	99,78	4,0	6,0	7,0	5,0
	CO2	100,00	98,63	97,64	98,63	4,0	5,5	7,0	5,5
	NOx	100,00	98,87	97,91	98,89	4,0	6,0	7,0	5,0
	PM	100,00	98,52	97,52	98,51	4,0	5,0	7,0	6,0
	Land take index	100,00	100,00	100,00	100,00	-	-	-	-
	Benefits costs ratio (BCR)	-	-	-0,82	N.C.	-	-	-	-
	Capital costs	-	-	3622	N.C.	-	-	-	-

Trondheim	Indicator	Trondheim scores							
		M0	MW0	MW4	MW5	M0	MW0	MW4	MW5
	Non-car modal share peak	43,4%	44,3%	44,4%	44,3%	4,0	5,5	7,0	5,5
	Non-car modal share off-peak	41,1%	41,5%	42,5%	41,5%	4,0	5,5	7,0	5,5
	Accessibility of key services	100,00	100,00	103,61	100,00	5,0	5,0	7,0	5,0
	Low income zones non-car accessibility	100,00	100,00	109,88	100,00	5,0	5,0	7,0	5,0
	Number of accidents	100,00	100,95	101,78	100,95	7,0	5,5	4,0	5,5
	CO2	100,00	99,44	100,11	99,44	5,0	6,5	4,0	6,5
	NOx	100,00	99,72	100,42	99,72	5,0	6,5	4,0	6,5
	PM	100,00	99,34	100,01	99,34	5,0	6,5	4,0	6,5
	Land take index	100,00	100,00	100,00	100,00	-	-	-	-
	Benefits costs ratio (BCR)	-	-	0,72	N.C.	-	-	-	-

Capital costs	-	-	255	N.C.	-	-	-	-
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<u>Vienna</u>	Indicator	Vienna scores							
		M0	MW0	MW4	MW5	M0	MW0	MW4	MW5
	Non-car modal share peak	55,2%	58,1%	58,2%	58,1%	4,0	5,5	7,0	5,5
	Non-car modal share off-peak	57,7%	58,5%	58,7%	58,5%	4,0	5,5	7,0	5,5
	Accessibility of key services	100,00	100,00	100,09	100,00	5,0	5,0	7,0	5,0
	Low income zones non-car accessibility	100,00	100,00	100,34	100,00	5,0	5,0	7,0	5,0
	Number of accidents	100,00	96,33	96,22	96,33	4,0	5,5	7,0	5,5
	CO2	100,00	95,04	94,93	95,04	4,0	5,5	7,0	5,5
	NOx	100,00	95,22	95,11	95,22	4,0	5,5	7,0	5,5
	PM	100,00	94,91	94,80	94,91	4,0	5,5	7,0	5,5
	Land take index	100,00	100,00	100,00	100,00	-	-	-	-
	Benefits costs ratio (BCR)	-	-	-0,96	N.C.	-	-	-	-
	Capital costs	-	-	381	N.C.	-	-	-	-

<u>Multi</u> <u>Criteria</u> <u>analysis</u>	City	MCA scores			
		MW4	MW5	MW4	MW5
	Gateshead	0,16	N.C.	-	-
	Madrid	0,62	N.C.	-	-
	Trondheim	0,24	N.C.	-	-
	Vienna	0,55	N.C.	-	-