



Transportation problems in urban planning

Examples from Krakow



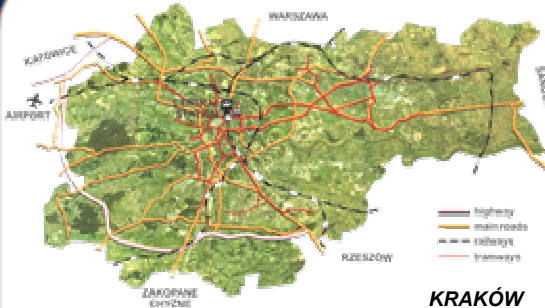
Wieslaw Wańkowicz

KRAKOW TRANSPORTATION NETWORK



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KRAKOW TRANSPORTATION NETWORK



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GENERAL INDICATORS

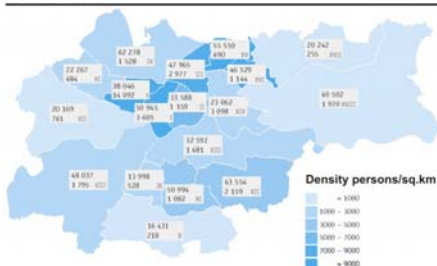
POPULATION			
	2001	2002	2003
TOTAL	748 523	746 745	746 175
MAN	399 260	398 845	398 791
WOMAN	349 263	347 900	347 384
PERMANENT RESIDENCE			
TOTAL	709 170	707 950	706 749
MAN	378 776	378 590	378 214
WOMAN	330 394	329 360	328 535
TEMPORARY RESIDENCE			
TOTAL	39 353	38 795	39 426
MAN	20 484	20 255	20 577
WOMAN	18 869	18 540	18 849

SOURCE: Raport of city conditions, 2003, Municipality of Krakow

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GENERAL INDICATORS

POPULATION



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GENERAL INDICATORS

DEMOGRAPHIC FORECAST

1000 PERSONS					
Year	Permanent residence	Temporary residence	Total	Migration	Total
2003	-	694,0	-	78,4	772,4
2008	-4,6	689,4	10,0	88,4	777,8
2013	-8,0	681,4	10,0	98,4	779,8
2018	-10,5	670,9	3,0	101,4	772,3
2020	-6,2	664,7	1,2	102,4	767,3
2023	-12,1	652,6	1,8	104,4	757,0

SOURCE: Raport of city conditions, 2003, Municipality of Krakow
A.Zborowski, Demographic forecast, MZBD Krakow

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GENERAL INDICATORS

NUMBER OF CARS

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1000 vehicles	173,4	203,8	242,7	259,3	270,4	282,5	302,8	306	315,7	332,2
Total										
1000 vehicles	165,1	181,3	204,1	218,2	226,4	236,9	250,1	255,1	259,0	260,2
Individual cars										

MOTORIZATION INDEX

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Vehicles/1000 pers.	289	303	328	347	362	379	396	410	426	445
	102,5	105	108	106	105	105	105	104	104	104,5

SOURCE: Raport of city conditions, 2003, Municipality of Krakow

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GENERAL INDICATORS

ROAD NETWORK

	2001	2002	2003
Highways, km	16,8	22,7	24,7
National, km	69	69	69,6
Regional, km	25	25	25,4
Subregional, km	196	212	214,8
Municipal, km	741	760	761,8
Number of bridges, tunnels etc.	127	151	151
Number of footbridges	9	9	9
Number of pedestrian tunnels	16	16	16

SOURCE: Raport of city conditions, 2003, Municipality of Krakow

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GENERAL INDICATORS

PUBLIC TRANSPORT

	2001	2002	2003
Tramways, km	167	167,5	167,5
Number of tramlines	23	23	23
Tramlines, km	286	286	286
Number of buslines	119 + 6	120	119
Buslines, km	1525,7	1414	1386
Number of minibus lines	6	6	8
Minibus lines, km	75	78,7	115
Number of passengers, mln per year	333,4	331,17	314,30

SOURCE: Raport of city conditions, 2003, Municipality of Krakow

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GENERAL INDICATORS

RAILWAY

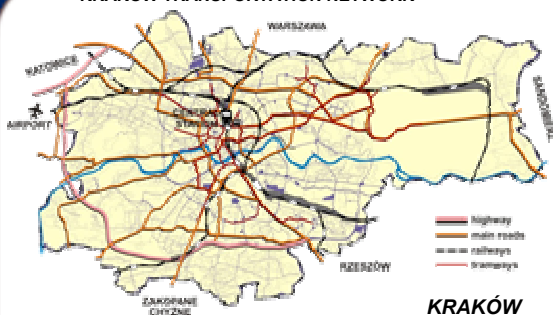
	2000	2001	2002	2003
Railways, km	109	109	109	109
Number of passengers stations	8	8	8	8
Number of passengers stops	9	9	9	9
Number of passengers-goods stations	5	5	5	4
Number of sidings	25	67	8	13*

SOURCE: Raport of city conditions, 2003, Municipality of Krakow

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KRAKOW TRANSPORTATION NETWORK



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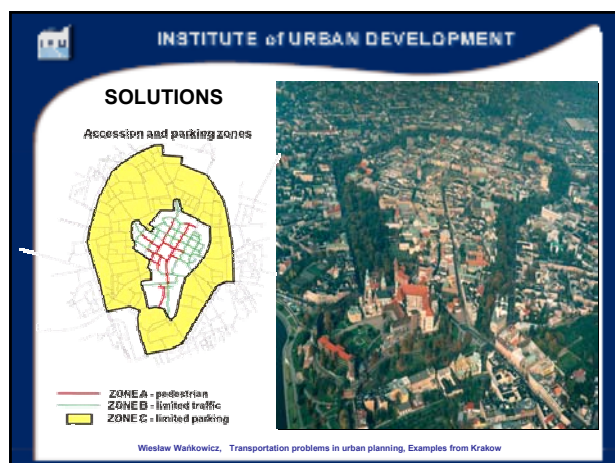
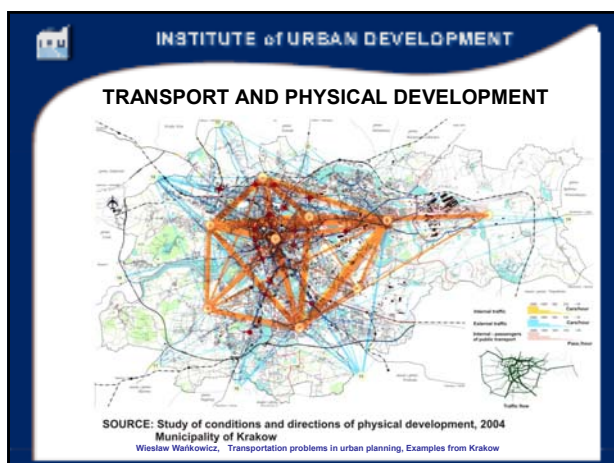
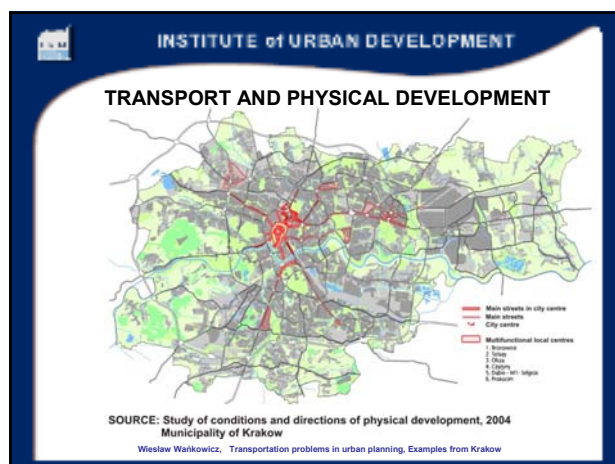
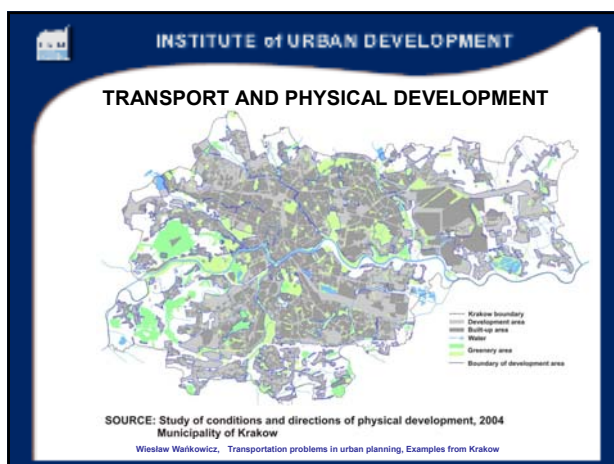
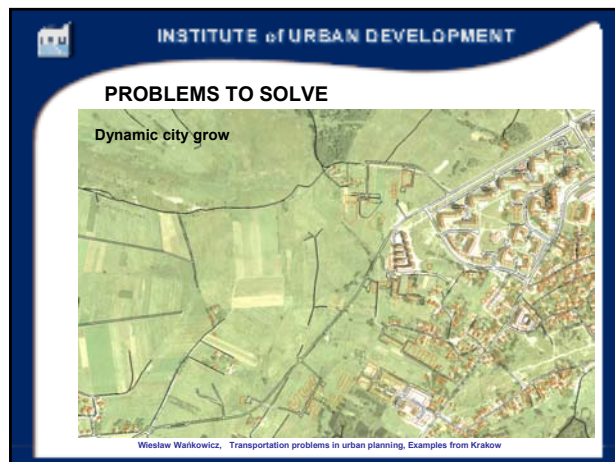
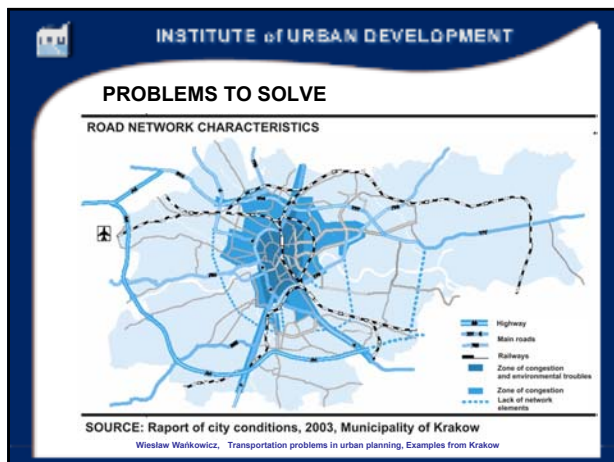
PROBLEMS TO SOLVE

TRAFFIC GROWTH

Year	Internal traffic			Ingoing-outgoing traffic			Transit					
	Ind. Cars	Others	Total	Ind. Cars	Others	Total	Ind. Cars	Others	Total			
1995	24 215	677	24 892	70	8409	1402	9811	27	822	230	1052	3
1996	27 644	1131	28 775	70	9249	1854	11 103	27	997	172	1169	3
1997	31 073	1585	32 658	70	10 089	2306	12 395	27	1172	113	1285	3
1998	34 500	2040	36 540	70	10 930	2760	13 690	27	1350	50	1400	3
1999	36 122	2135	38 257	71	11 444	2889	14 333	27	1413	54	1467	2
2000	37 711	2229	39 940	71	11 948	3016	14 964	27	1475	57	1532	2
2001	39 069	2309	41 378	71	12 378	3125	15 503	27	1528	59	1587	2
2002	39 538	2337	41 875	71	12 527	3162	15 689	26	1546	60	1606	3
2003	40 000	5000	45 000	82	6000	2000	8000	14	1500	500	2000	4

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Accession and parking zones

ZONE A - pedestrian
 ZONE B - limited traffic
 ZONE C - limited parking

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Pedestrian zone

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Limited traffic zone

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Limited traffic zone

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Priorities for pedestrian and for public transport

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Priorities for public transport

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Priorities for public transport




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Priorities for public transport
Roads for buses and trams




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Priorities for public transport
Roads for buses and trams




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SOLUTIONS

Priorities for public transport
Roads for buses and trams



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Traffic calming



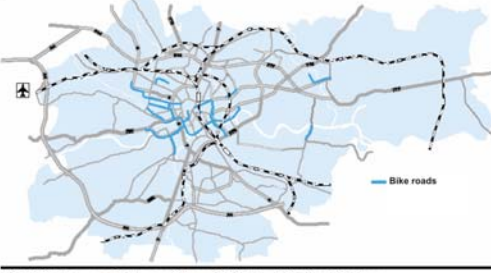
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BIKE ROADS



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Bike roads



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Safety barriers



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New investments



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New investments



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FOR BETTER WAY TO FUTURE



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THANK YOU FOR YOUR ATTENTION



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