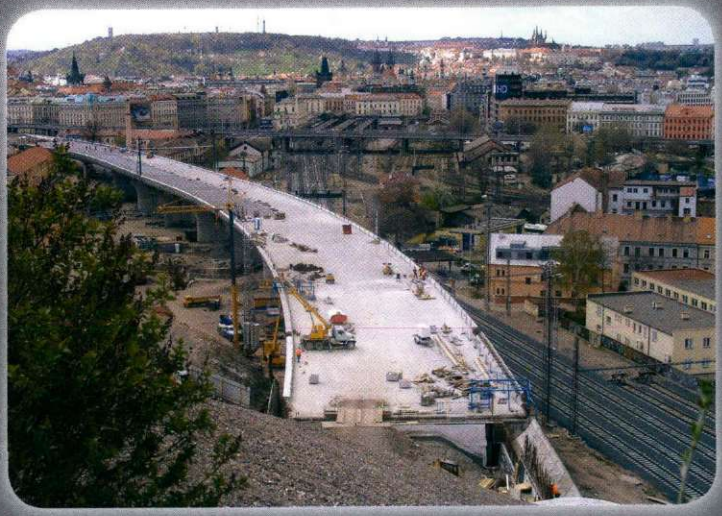
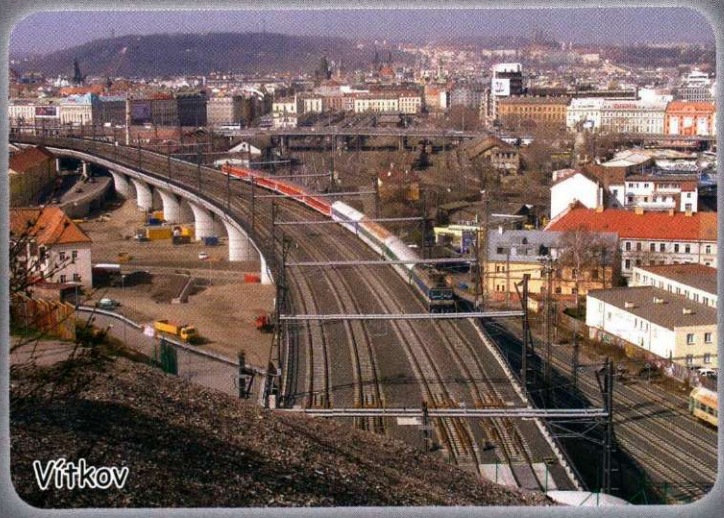
THE TECHNICAL ADMINISTRATION OF ROADS OF THE CITY OF PRAGUE
Department of Transportation Engineering

THE YEARBOOK OF TRANSPORTATION

PRAGUE 2008


Radlická

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THE TECHNICAL ADMINISTRATION OF ROADS OF THE CITY OF PRAGUE
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THE YEARBOOK OF TRANSPORTATION PRAGUE 2008

Dear readers,

each year, the Yearbook of Transportation is published in order to inform the wider public of the state of transport in Prague and the changes that occurred during the previous year. The yearbook for 2008 was prepared, after the merger of the Institute of Transportation Engineering of the City of Prague and the Technical Administration of Roads of the City of Prague that occurred on 1 January 2008, by the Transportation Engineering Division of the Technical Administration of Roads of the City of Prague (TSK-ÚDI).

The year 2008 on one hand could be characterized as exhibiting a certain stagnation in the growth of traffic and transport operations on the city territory and, on the other hand, as a progressive onset of the development of the city's transport infrastructure. This was enabled by significantly higher sources of funding for the development of transport investments (4 billion CZK increase compared to 2007) and even for extensive reconstructions and repairs of transport constructions and facilities (0,5 billion CZK increase).

The 4,6 km long extension of Metro line C of, comprising three new stations which was put into operation in May 2008, as the key transportation investment completed in 2008. Two stations in the Prosek district solved the servicing of this residential area, previously entirely dependent on bus transportation. The terminal station Letňany significantly contributed not only to the improvement of public transportation but also to the car traffic from the city's northeast districts and the adjacent Central Bohemian Region. A bus terminal and P + R facility at this station allowed for the reduction of traffic intensity on the radial communication roads of the city and helped to improve the environment in this part of Prague.

Other newly opened transport facilities (new tram line in Radlice, another section of the Rohan Embankment, bicycle paths) as well as extensive road reconstructions in 2008 contributed to the improvement of the quality of transport in Prague.

One also cannot overlook participation of the state in financing of transportation infrastructure in Prague. An opening of the so-called New railway connection, the continuing reconstruction of the Prague Main Railway Station, the connection of R6 motorway to the Prague Ring-road, the construction of the southern section of the Prague Ring-road, which in 2008 required substantial investment funds, already have or after their completion will have enormous importance for the improvement of transport and the environment in Prague.

Radovan Šteiner
City of Prague Transportation Councillor

Prague, 1 May, 2009

Dear Reader,

you may be a regular subscriber of Prague Transportation Yearbooks, or you may obtain it for the first time. In any case you may appreciate a brief comparison with earlier yearbooks to facilitate your reading. You are going to find out the yearbook offers you more data with an improved coverage.

The original composition is preserved, yet it augments the content with information concerning operations of the Technical Administration of Roads of the City of Prague as the administrator of roads and other traffic infrastructure included in the property of Prague.

The fundamental difference from 2007 was a significant rise in capital expenses for Prague traffic in both the national and municipal budgets. That in turn affected the scale of redevelopment projects (+21 %) and especially made possible to invest in the municipal (+73 %) and national development projects. Thanks to it the year 2008 saw completion of many technically and financially demanding constructions as well as commencement of other traffic structures. You may find out over individual chapters of the yearbook that the fundamental change had an effect on the infrastructure development of all means of transport in Prague.

It should be stressed that improving the traffic infrastructure is an important way to solve the main problems of the ever growing traffic in Prague. While the increase of traffic and transportation demands in Prague has slowed down in 2008 comparing the previous years, it still keeps growing in passenger transport. A drop was seen only in the transport of goods, including even the road haulage (by less than 1 %).

Under the conditions of growing passenger car traffic demands and increased building activity requiring occupation of roads and restriction of traffic it is vital to pay more attention to the mobility management, especially driver and passenger information systems. Examples of this are the equipment of two local control sites provided in 2008, the traffic light controlled junctions increased by 5 %, the number of tram priority and bus priority junctions multiplied by 11 % and even 88 %, respectively. Facilities informing drivers on current travel times have been introduced to three locations.

You may find more detail concerning the Prague transportation development and its condition in 2008 inside the yearbook. We have put all efforts into making its content comprehensive and as precise as possible. It is our hope you may find the information on the traffic in Prague most helpful.

Prague, 1 May, 2009

Ing. Luděk Dostál
Director

Ing. Ladislav Pivec
First Deputy Director

CONTENTS

BASIC DATA

1.1 The Capital of Prague

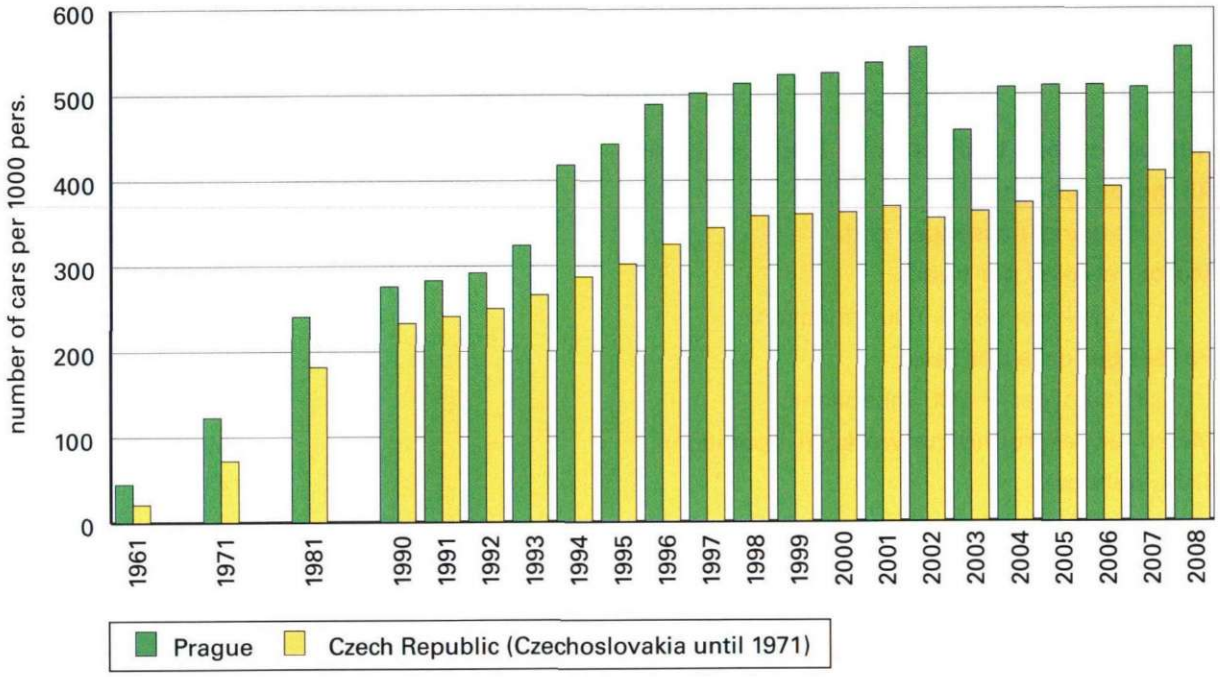
Selected data on the Capital of Prague as of 31. 12. 2007

City area	496 km^2
Population	1 233 000
Total road network	3 815 km
specifically, motorways within the city	10 km
other urban motor roads	76 km
Number of bridge structures in the road network	593
specifically, across the river	27
grade-separated intersections	215
underpasses	123
Number of road tunnels (total length 4 553 m)	7
All motor vehicles	906 571
including passenger cars	678 056
Motor vehicles per head	
in vehicles per 1 000 inhabitants	735
Passenger cars per head	
in cars per 1 000 inhabitants	550
Metro (underground) network (in operation)	59,1 km
Tram network	141,6 km
specifically, dedicated trackbed	52 %
Public Transport bus network	690,0 km
Traffic signals	532
specifically, separate pedestrian crossings	86
Vehicle kilometres travelled (VKT) throughout motor car traffic	
in an average workday	21,0 mil. VKT
annually	6,9 bn. VKT
Modal split – motor transport (based on all trips in the city on a workday)	
public transport	57 %
car transport	43 %
Modal split – motor and non-motor transport (based on all trips in the city on a workday)	
public transport	43 %
car transport	33 %
bicyclists	1 %
pedestrians	23 %
Traffic accidents	30 251
Traffic accident injuries	
fatal	38
serious	334
slight	1 941
Relative accident rate (accidents per 1 million VKT)	4,7

1.2 Prague compared with the Czech Republic

		Prague	CZ	Prague/CZ (%)
Area (km^2)		496	78 864	0.6
Population (mil.)		1.233	10.468	11.8
	specifically, the workforce (mil.)	0.645	5.015	12.9
Motor vehicles (000s)		907	5 944	15.3
	specifically, passenger cars (000s)	678	4 423	15.3
Motor vehicles per head	(motor vehicles per 1000 persons	735	568	-
	(persons per 1 motor vehicle)	1.4	1.8	-
Passenger cars per head	(passenger cars per 1000 persons)	550	423	-
	(persons per 1 passenger car)	1.8	2.4	-

Passenger cars per head, 1961 – 2008



Vehicle kilometres 1990 – 2008 (mil. VKT / avg. workday 0-24 h)

	1990	2000	2005	2006	2007	2008	Index 08/90 (%)	Index 08/07 (%)
Prague*	7.3	16.6	19.9	20.3	20.9	**21.0**	288.0	100.5
CZ+	80.9	131.2	148.5	156.6	162.4	**167.3****	206.8**	103.0**

* throughout the whole network; + motorways & roads, class 1, 2 & 3 incl. sections inside Prague; ** preliminary data

Vehicles in front of the Kolbenova – Kbelská crossroads

A new segment of the R6 freeway at Jeneč

CAR TRAFFIC

2.1 Development in number of motor vehicles and cars

The total number of motor vehicles registered in Prague rose steeply until 1999, then the rise has slowed down.

Registered motor vehicles in 1961 – 2008 (100 % = 1990)

Year	Prague					Czech Republic (Czechoslovakia till 1971)				
	Population (000s)	Motor vehicles		Passenger cars		Population (000s)	Motor vehicles		Passenger cars	
		number	%	number	%		number	%	number	%
1961	1 007	93 106	22	44 891	13	13 746	1 326 801	-	291 680	-
1971	1 082	203 519	48	133 129	40	14 419	2 931 629	-	1 041 137	-
1981	1 183	367 007	86	284 756	85	10 306	3 449 300	85	1 872 694	79
1990	1 215	428 769	100	336 037	100	10 365	4 039 606	100	2 411 297	100
1995	1 210	641 590	150	535 805	159	10 321	4 728 859	117	3 113 476	129
2000	1 181	746 832	174	620 663	185	10 267	5 230 846	129	3 720 316	154
2005	1 180	749 786	175	602 339	179	10 247	5 401 917	134	3 954 769	164
2006	1 188	761 071	178	605 774	180	10 287	5 613 943	139	4 098 114	167
2007	1 212	780 738	182	612 879	182	10 381	5 882 312	146	4 269 231	177
2008	**1 233**	**906 571**	**211**	**678 056**	**202**	**10 468**	**5 943 953**	**147**	**4 423 370**	**183**

Numbers of motor vehicles and cars per head, 1961 – 2008

Year	PRAGUE				Czech Republic (Czechoslovakia till 1971)			
	Vehicles per head		Passenger cars per head		Vehicles per head		Passenger cars per head	
	Veh. per 1 000 pers.	Pers. per 1 vehicle	Cars per 1 000 pers.	Pers. per 1 car	Veh. per 1 000 pers.	Pers. per 1 vehicle	Cars per 1 000 pers.	Pers. per 1 car
1961	92	10.8	45	22.4	97	10.4	21	47.1
1971	188	5.3	123	8.1	203	4.9	72	13.8
1981	310	3.2	241	4.2	335	3.0	182	5.5
1990	353	2.8	276	3.6	390	2.6	233	4.3
1995	530	1.9	443	2.3	458	2.2	302	3.3
2000	632	1.6	525	1.9	510	2.0	362	2.8
2005	635	1.6	510	2.0	527	1.9	386	2.6
2006	640	1.6	510	2.0	546	1.8	398	2.5
2007	644	1.6	506	2.0	567	1.8	411	2.4
2008	**735**	**1.4**	**550**	**1.8**	**568**	**1.8**	**423**	**2.4**

The data for years 2005-2007 in Prague are encumbered by an error in the records of registration.

2.2 Motor car traffic volumes on workdays

An increase in car traffic with its impacts started to show in Prague as early as in 1930s. The city saw a drop in car traffic for a time due to the World War II and the post-war development (e.g. the 1937 figures of 1 passenger car in 32 persons in Prague were achieved again following the war and post-war decline only in 1959).

Since 1960s, the number of motor cars started to grow significantly in Prague, causing problems in traffic mainly due to insufficient capacities of key crossroads. Up to late 1980s, however, these issues affected only a small number of crossroads, most of them in the city centre, and occurred chiefly during traffic peaks. The explosion rise in car traffic in 1990s created a new condition. It was especially from 1992 to 1997 when the car traffic grew in the city with a rate unparalleled in European cites, except the ones in the former East Germany.

The Capital of Prague assumes a special position in the Czech Republic in car traffic, manifested in extraordinary densities and VKT in comparison with other Czech cities or motorways and roads in the country.

The basic aggregated parameter for the development of car traffic in Prague is VKT (vehicle kilometres travelled) throughout the road network. The VKT is monitored from as early as 1978. In addition to VKT, Prague car traffic development trends are monitored by means of cordon surveys, i.e. periodic traffic counts taken on spots which together make a rounded-off cordon over all the important in-roads entering a defined area. The inner city traffic development is monitored via the central cordon, the extra-urban traffic development is monitored through the outer cordon. The two cordons' time arrays have been collected and available since 1961.

Note: all VKT data relate to a 24 h average of a normal workday; all car traffic data exclude public transport buses.

In the year 2008 covered the total of 21 040 000 km VKT throughout the whole Prague area around the clock on an average workday. The passenger cars' share of it was 19 139 000 km VKT i.e. 91 %. Comparing with the previous year, it means motor cars covered 110 000 km VKT more in Prague daily which is 0.5 % above 2007. Comparing with 1990, car traffic in the city increased by 188 % i.e. almost three times. Comparing with the car traffic growth on motorways and roads in the Czech Republic, the growth in Prague was approximately 1.5 times higher in the period.

Vehicles entering the Vítězné náměstí roundabout

The north portal of the Mrázovka tunnel

In the greater central area of the city, the volume of car traffic was lower; comparing it with the previous year. The intensity of car traffic in the greater city centre area rose annually until 1998 when it reached its peak and, since then, it has stagnated with slight variations in both directions. 307 000 vehicles including 292 000 passenger cars entered the greater inner city area during the 24 h of an average workday.

In the middle zone of the city, the car traffic volume increased by 0 to 1 % over the previous year. The traffic in this zone has been growing steadily and significantly since 1990. It has multiplied three to four times on some roads over 1990.

In the outer zone of the city, the car traffic volume grew by 1.6 % over the previous year. Comparing it with 1990, 3.7 times more vehicles (+266 %) entered Prague daily from its environs (suburban zone, other regions in the nation, abroad). The car traffic in the outer zone of the city has been rising steadily since 1990. About 282 000 vehicles including 245 000 passenger cars entered Prague around the clock on an average workday of 2008.

The heaviest volumes in sections of Prague road network in 2008 were carried by *Barrandov* Bridge with its 137 000 vehicles passing daily (0-24 h), the heaviest split-level junction was the *5. května – Jižní spojka* (Southern Connection) junction (216 000 vehicles daily) and the heaviest level-junction was *Poděbradská – Kbelská* (74 000 vehicles daily).

Traffic volume on central and outer cordon, 1961 – 2008

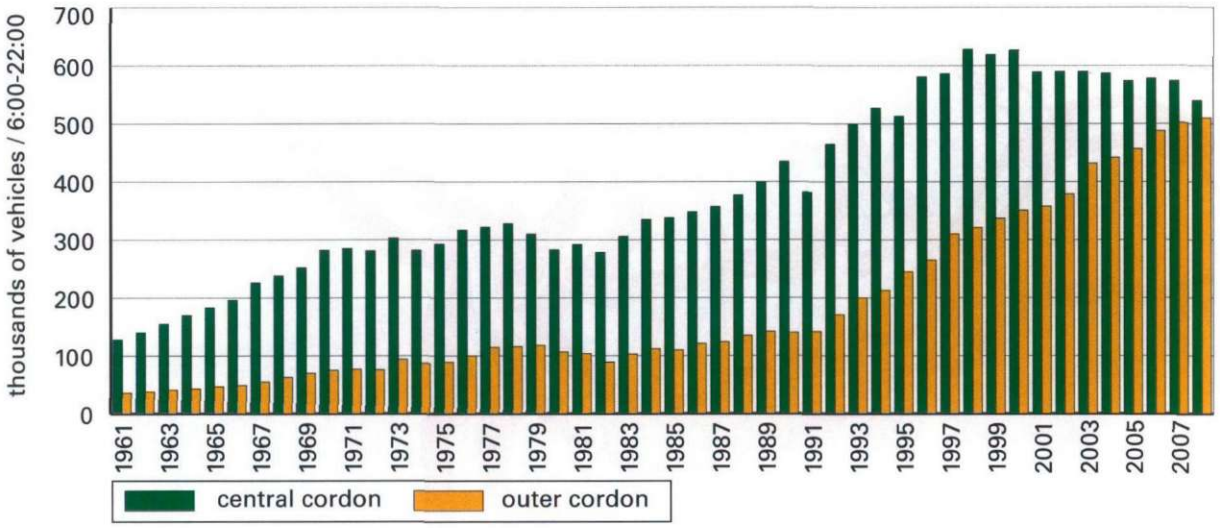
Workday, both directions total, 6 a.m. to 10 p.m.

Year	Central cordon						Outer cordon					
	Passenger cars		Lorries		All vehicles		Passenger cars		Lorries		All vehicles	
	number	%	number	%	number	%	number	%	number	%	number	%
1961	69 000	18	32 000	82	128 000	29	14 000	14	14 000	41	36 000	26
1971	241 000	63	38 000	97	299 000	69	50 000	50	23 000	68	77 000	55
1981	247 000	64	39 000	100	292 000	67	67 000	66	31 000	91	104 000	74
1990	385 000	100	39 000	100	435 000	100	101 000	100	34 000	100	140 000	100
1995	474 000	123	31 000	79	513 000	118	204 000	201	36 000	106	245 000	175
2000	594 000	154	23 000	59	627 000	144	304 000	301	43 000	126	351 000	251
2005	547 000	142	17 000	44	574 000	132	394 000	390	56 000	165	457 000	326
2006	551 000	143	15 000	38	578 000	131	421 000	417	60 000	176	489 000	349
2007	547 000	142	15 000	38	573 000	132	438 000	434	59 000	173	504 000	360
2008	**530 000**	**138**	**15 000**	**38**	**558 000**	**128**	**445 000**	**441**	**58 000**	**171**	**512 000**	**366**

100 % = 1990

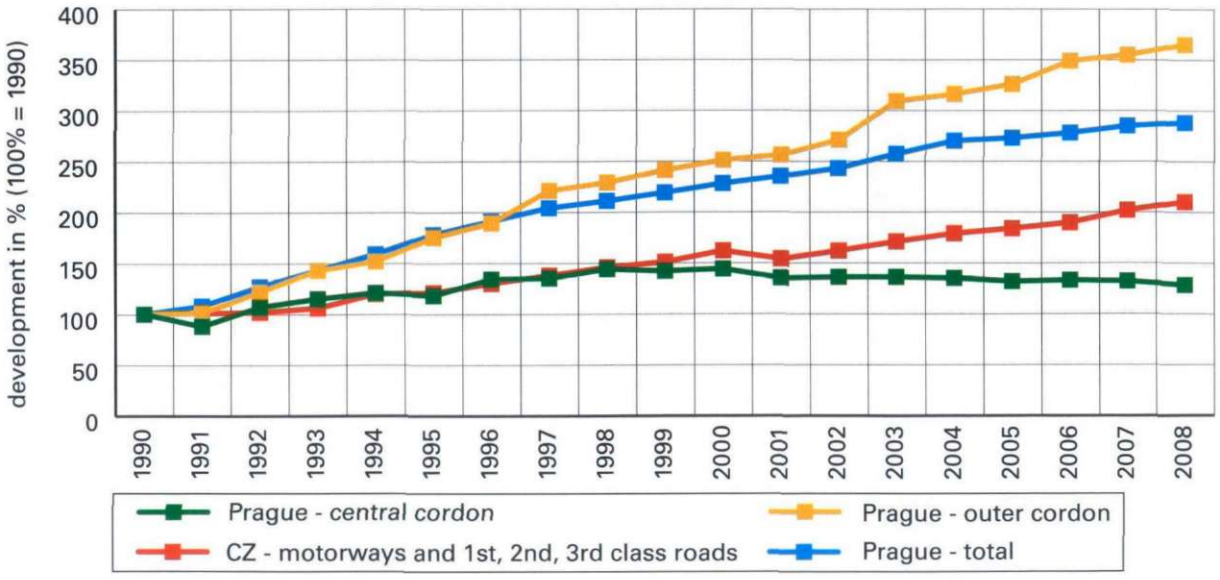
Traffic volumes on central and outer cordon, 1961 – 2008

An average workday, both directions total, 6 a.m. to 10 p.m.

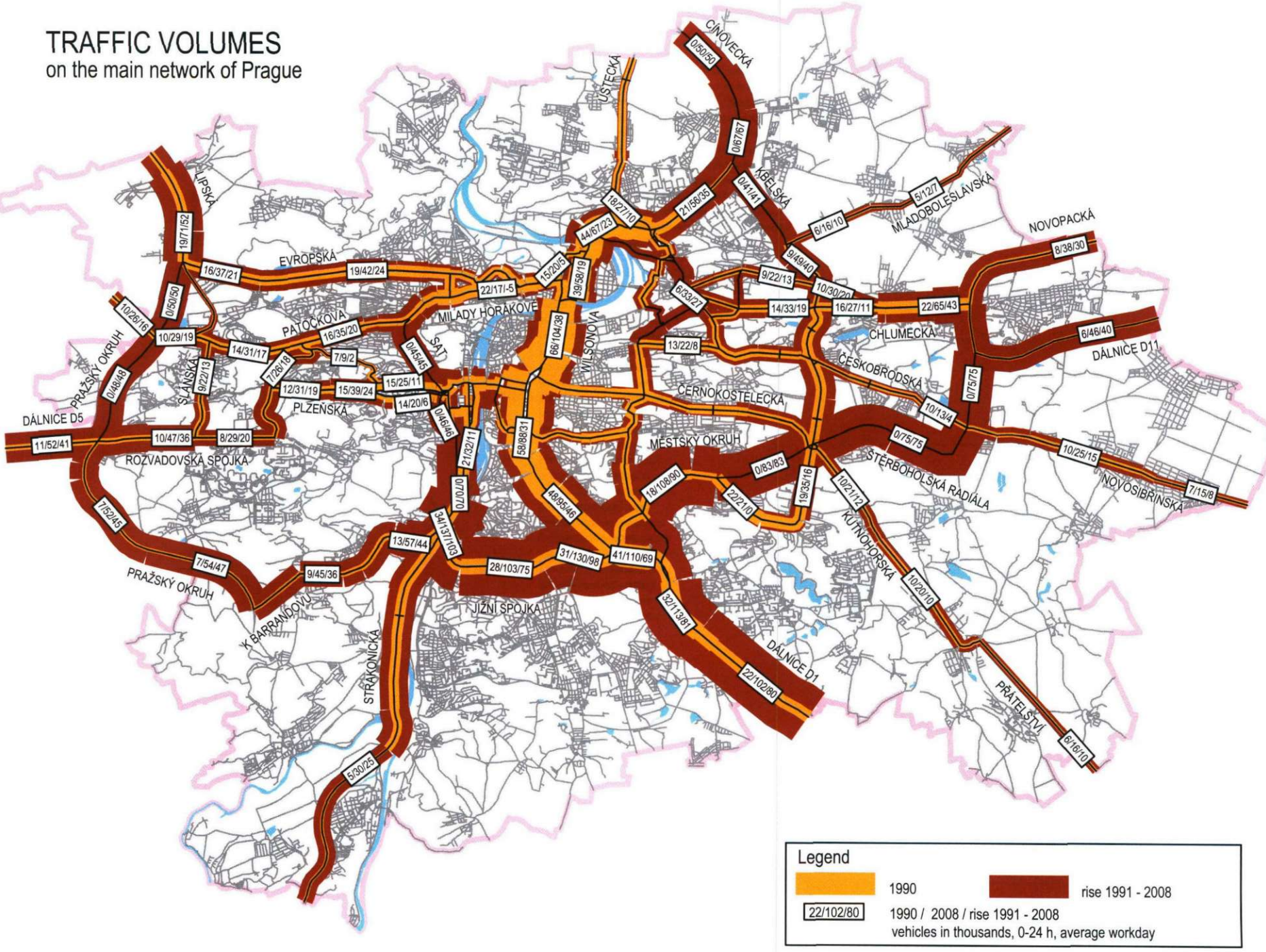


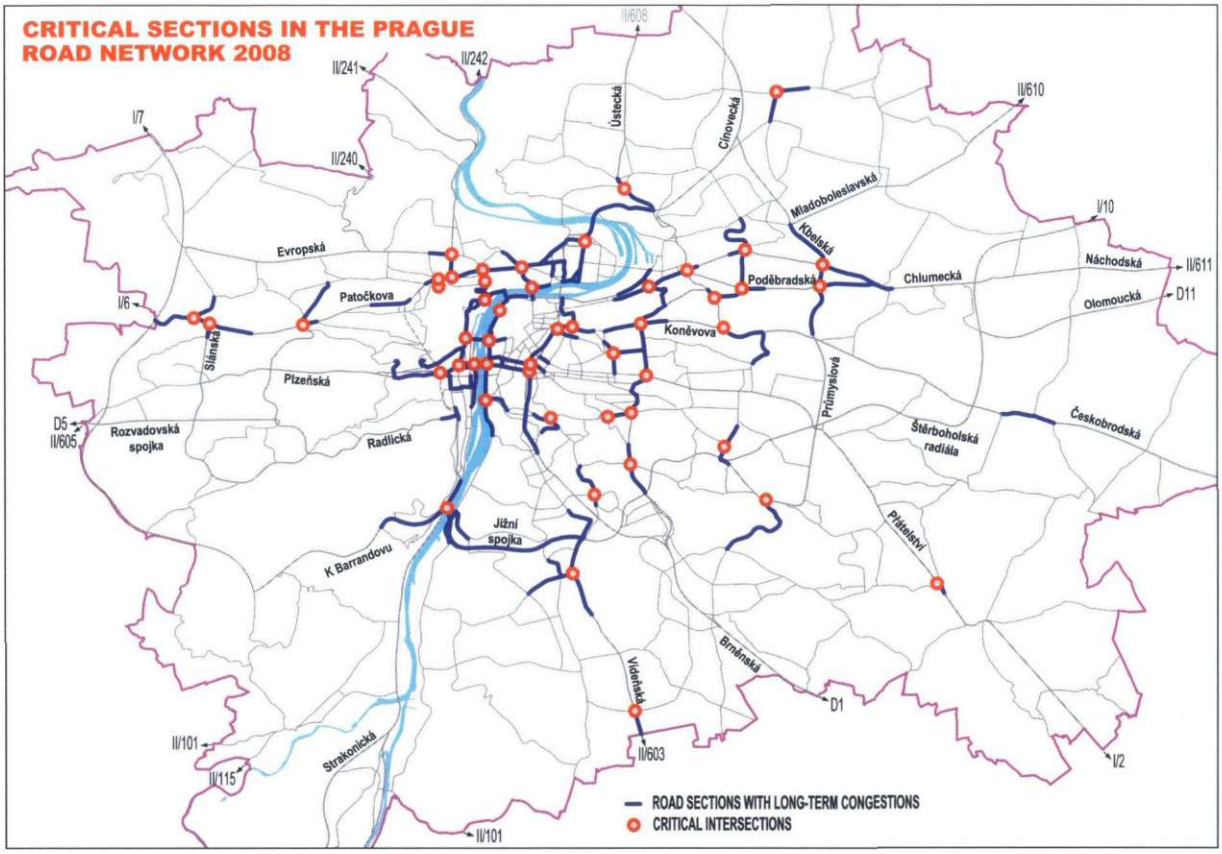
Car traffic volume development in Prague and the Czech Republic, 1990 – 2008

An average workday



TRAFFIC VOLUMES
on the main network of Prague





The pace of the VKT growth in car traffic in Prague was the highest after 1990 as shown by comparison of the average year-on-year growth of the daily VKT throughout the overall urban road network:

1981 – 1990	y-o-y	+192 000 VKT/day
1991 – 1995	y-o-y	+1 134 000 VKT/day
1996 – 2000	y-o-y	+736 000 VKT/day
2001 – 2005	y-o-y	+652 000 VKT/day
2006 – 2008	y-o-y	+380 000 VKT/day

Most of the rise in the car traffic in Prague following 1990 has been due to passenger cars. During 1991 to 2008, the VKT per vehicle in Prague grew as follows:

passenger cars	+227 %
lorries and buses	+32 %
all vehicles	+188 %

The car traffic grows differently in different city zones. From 1991 to 2008 the car traffic increased in the following way:

all-network average	+188 %
the greater inner city	+28 %
the outer zone	+266 %
the middle zone of the city	+100 to +300 %

Average Vehicle Occupancy (AVO) – persons per passenger car

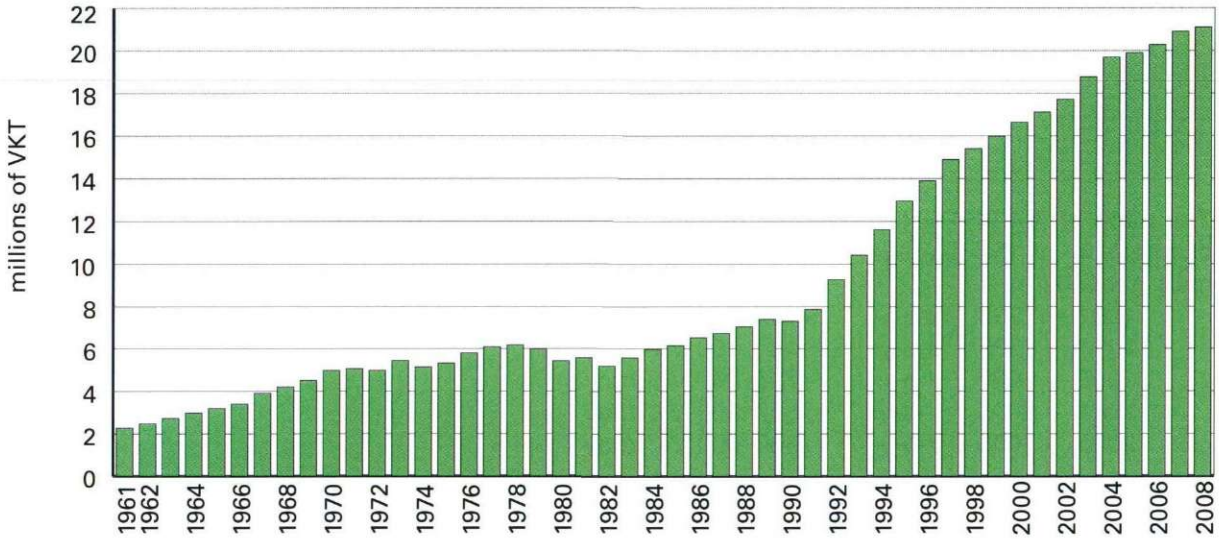
Year	Inner city (central cordon)	Outer zone (outer cordon)	All Prague
1990	1.57	1.90	1.71
1995	1.45	1.60	1.50
2000	1.37	1.49	1.44
2005	1.35	1.42	1.40
2006	1.35	1.40	1.38
2007	1.35	1.39	1.38
2008	**1.33**	**1.37**	**1.36**

Vehicle kilometres travelled in Prague, 1961 – 2008 (100 % = 1990)
All roads, an average workday, 0-24 h

Year	All motor vehicles		Passenger cars only		VKT percentage of passenger cars
	millions VKT	%	millions VKT	%	
1961	2.273*	31	1.273*	23	56
1971	5.061*	69	3.543*	65	70
1981	5.562	76	4.338	79	78
1990	7.293	100	5.848	100	80
1995	12.961	178	11.509	197	89
2000	16.641	228	15.131	259	91
2005	19.899	273	18.023	308	91
2006	20.278	278	18.330	313	90
2007	20.929	287	19.016	325	91
2008	**21.040**	**288**	**19.139**	**327**	**91**

* an estimate from volume trends on the central and outer cordon (VKT is monitored in Prague since only 1978)

Vehicle kilometres travelled in Prague 1961 – 2008
All roads, an average workday, 0-24 h



2.3 A workday mode share

The traffic flow is made up largely of passenger cars. Concerning the local distribution, the passenger cars get the greater share the closer they are to the city centre. The share in 2008 was in the central cordon 95 %, in the outer cordon 87 % and in the network average 91 %.

Percentage of mode share, 1961 – 2008
Workday, both directions total, from 6 a.m. to 10 p.m.

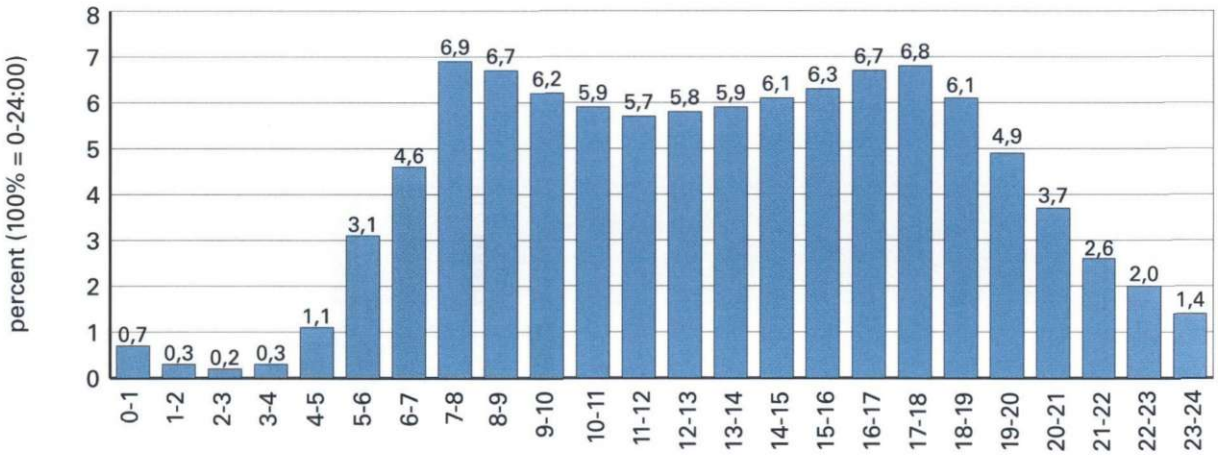
Year	Central cordon				Outer cordon			
	Passenger cars	Motorcycles	Lorries	Buses (exc. PT)	Passenger cars	Motorcycles	Lorries	Buses (exc. PT)
1961	53.7	19.4	29.4	2.0	38.6	22.1	34.4	4.9
1971	79.3	5.6	13.3	1.8	63.2	8.6	25.1	3.1
1981	84.3	0.4	13.2	2.0	65.1	0.6	30.3	4.0
1990	88.6	0.7	9.1	1.6	72.1	0.5	24.0	3.4
1995	92.4	0.3	6.0	1.3	83.4	0.2	14.7	1.7
2000	94.7	0.6	3.7	1.0	86.5	0.2	12.1	1.2
2005	95.4	0.7	2.9	1.0	86.2	0.4	12.2	1.2
2008	**95.0**	**1.1**	**2.7**	**1.2**	**87.0**	**0.5**	**11.3**	**1.2**

2.4 Temporal patterns in motor vehicle traffic

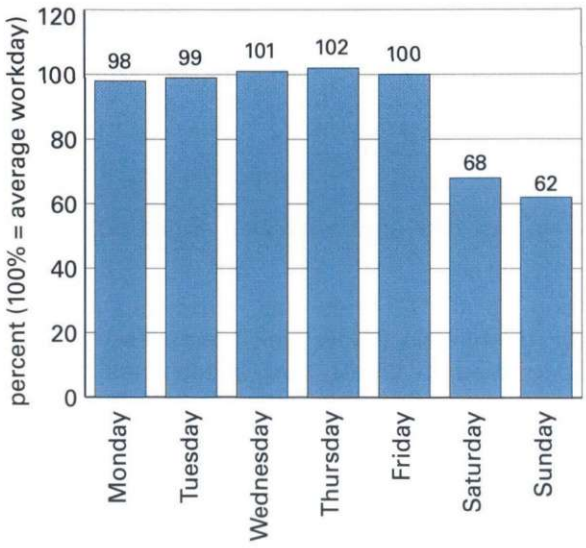
Workday volume variations in motor vehicle traffic show the following characteristics.

- The bulk of the daily traffic volumes is carried out during daylight (74 % from 6 a.m. to 6 p.m., or 80 % from 6 a.m. to 7 p.m.) while the period from 6 a.m. to 10 p.m. covers about 91 %.
- Following 6 p.m., the traffic volume displays a steep and largely linear drop till midnight.
- The morning peak hour comes at 7–8 a.m., the afternoon peak hour is between 5–6 p.m.
- The morning peak hour's share is 6.9 %, the afternoon peak hour's share is 6.8 % (100 % = 0–24 h).
- The differences between peak hour share and off-peak share are not very sharp. The noon sag hour (at 11 – 12 a. m.) is 5.7 % of the whole day.
- Daily traffic density variation in lorries and buses (excluding public transport) displays a different characteristic from the overall profile. Their peak hour is 10–11 a.m., making 8.5 % of the all-day goods vehicle and bus volumes. Following 11 a.m. there comes a mild and more or less regular decrease without any sag or next peak until midnight.
- Consequently, the share of lorries and buses in the traffic flow changes significantly during the day:
  - the all-day average is 9 %,
  - it rises up to 15 % in the morning,
  - it descends to 7 % in the afternoon,
  - evening and night values range between 4 to 10 %.

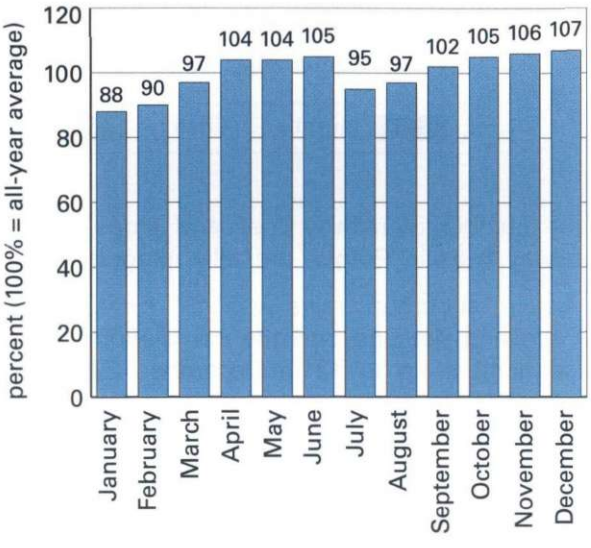
Daily variation, 2008 – Prague, all network



Weekly variation, 2008 – Prague, all network



Annual variation, 2008 – Prague, all network



3

PUBLIC TRANSPORT

3.1 Prague Integrated Transport *(PID)*

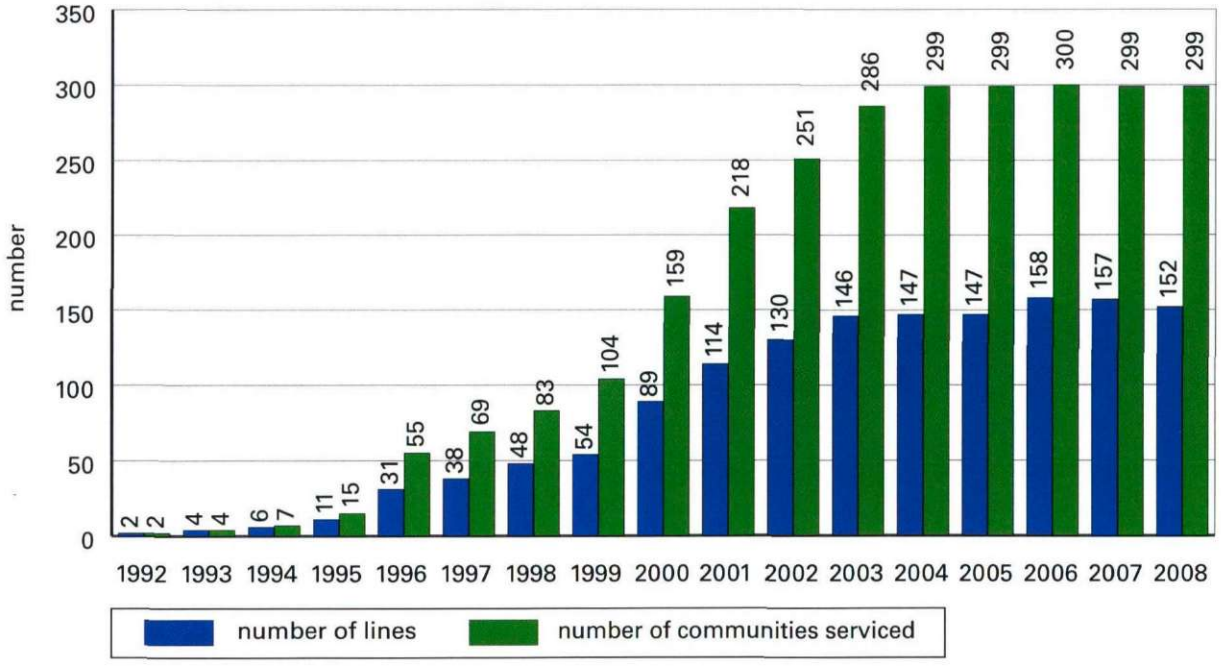
3.1.1 Basic data and the *PID* system development

The *PID* integrated system is a modern integrated public transport system covering the Prague metropolitan area extended to adjacent regions of the *Středočeský kraj* heartland that are vital for the urban mobility.

The integrated transport in Prague includes the Metro underground, trams, urban and suburban bus lines, railroads, the *Petřín* hill funicular and ferries. What adds a competitive edge to the public transport over individual transport options is the growing possibility to make a trip with a single travel document regardless of the means of transport and carrier. The attractiveness of the integrated system is decided by time, price, comfort, reliability and safety criteria.

The start of the PID system was in 1991. In order to coordinate and, later, arrange the *PID* system, the Municipality of Prague established the Prague Integrated Transport Regional Organizer (*ROPID*), an allowance organization, in 1993. A zoned tariff has been introduced since 1. 6. 1996. The coverage of the included suburban bus lines expanded gradually in both number and length of the lines, the serviced area and number of joined communities grew as did the number of tariff zones.

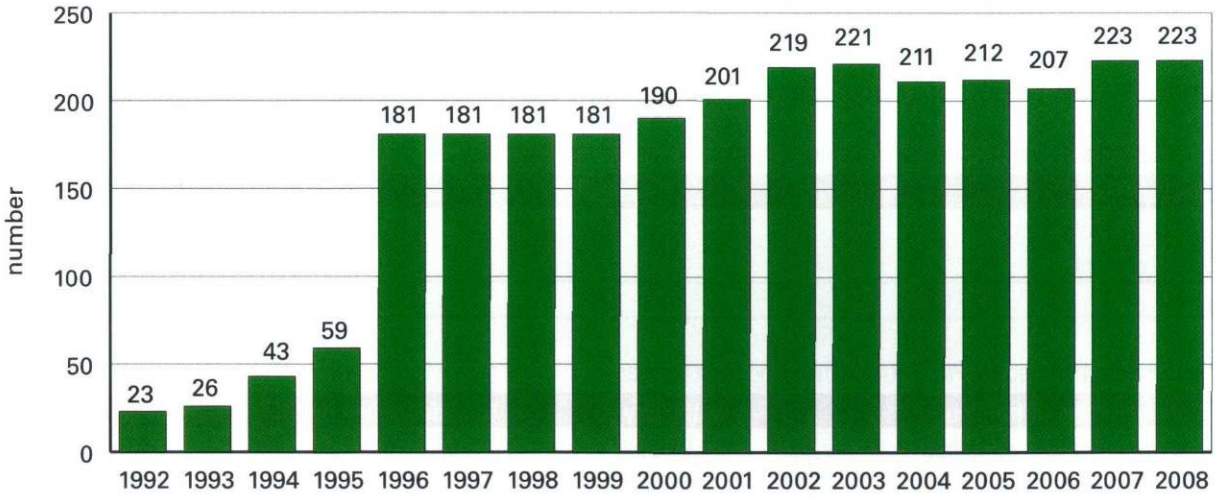
Development of suburban PID bus lines



The number of railway lines and stops in the *PID* system has grown as well. Eight out of ten railway lines in Prague are fully integrated now.

Marking suburban trains with "S" symbols and setting up 10 "S" lines was introduced in 2007. A growing demand and the completion of the *Vítkov* hill tunnels ("New Link") increased the "S" line number up to 12 in December, 2008, and also caused to create new speed lines marked with "R".

Number of railway stations and stops integrated in *PID*



The operation of public transport lines is supported from the funds of the municipality of Prague as well as many other communities, notably the *Středočeský kraj* regional authority. The chief *PID* carriers are Prague Public Transit, Co. Inc. (*Dopravní podnik hl. m. Prahy, a. s.*), that operates the Metro underground, trams, the funicular and most bus lines, as well as Czech Railways, Co. Inc. (*České dráhy, a. s.*), operating the railways. Additional twelve private carriers share in operating the bus lines. The integrated transport system includes also five ferries. The total number of *PID* carriers is 17.

A suburban PID line, Dejvická stop

A City Elefant suburban train at the Praha-Libeň station

The most important Prague carrier was Prague Public Transit (*DP*) with its 159 operated bus lines in the end of 2008. The majority of lines in the regional coverage was operated by *Veolia Transport Praha, s. r. o.* (43 lines), and *ČSAD Střední Čechy, a. s.*, bus operator (30 lines).

Basic data on Prague Integrated Transport *(PID)*, 1998 – 2008

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Number of communities served by suburban *PID* buses	83	104	159	218	251	278	299	299	300	299	**299**
Number of railway stations and stops included in *PID*	181	181	190	200	219	221	211	212	207	223	**223**
Number of suburban *PID* bus lines	48	54	89	114	133	146	147	147	158	157	**152**
Millions of VKT in suburban *PID* bus lines	5.03	7.99	9.36	12.91	15.79	18.48	20.20	22.2	22.4	23.6	**24.3**
Millions of VKT in all the *PID* lines except railway (ie. Metro+tramway+urban and suburban buses)	149	156	157	163	161.6	172.9	177.8	178.9	187.1	188.6	**194.3**
Passenger percentage using *PID* tickets on railway lines included in *PID*	35.6	37.2	39.2	43.0	52.1	56.5	57.7	59.7	60.4	63.3	**63.8**

Three Metro lines operated within the territory of the capital at the end of 2008 as well as 25 day and 9 night tram lines and as much as 174 bus lines. The number includes 13 night lines, 20 school ones and 2 lines for persons with limited mobility. Operated in the *PID* system were also 152 regional bus lines, including 88 city-to-region lines (81 day and 7 night lines) and 64 lines solely outside of the municipal region.

***PID* bus lines by carrier** (including overnight, school and limited mobility lines)

Carrier	City territory	Region territory
DP hl. m. Prahy, a. s.	159	16
Other carriers	15	136
Total	174	152

Passengers handled by *PID*, 2008 (in thousand persons/year)

Carrier, means of transport	In the city	Outside of the city	Total
Dopravní podnik, a. s. Metro	596 893	-	596 893
tramway	356 834	-	356 834
buses	297 884	10 228	308 112
Contractor carriers buses	59 633	45 579	105 212
České dráhy, a.s. (with *PID* tickets)	17 278	3 270	20 548
Ferries	343	-	343
Total	1 328 865	59 077	1 387 942

The *ROPID* regional organiser was restructured in 2008 in order to improve public and partner relations. A new *PID* tariff has been valid since summer 2008 responding to new trends in technology of passenger handling.

Extending the C line of Metro from *Ládví* to *Letňany* has largely rearranged traffic in the urban north-east. New seasonal ferries P4 and P5 started operation. Launching Opencard prepayment cards was a significant step towards an electronic fare.

3.1.2 Municipal Public Transport *(MHD)*

The **Metro** underground makes a backbone network of the public transport system. It consists of three lines with a total operational length 59.1 km and 57 stations (including three interchanges counted as two stations each).

An average commercial speed of the Metro trains is 35.5 km/h with an average station-to-station distance of 1 094 m. The Metro share in transported persons reached 45.9 % of the public transit total in 2008.

A barrier-free entry through personal elevators or rail platforms is possible in 32 stations. They are 5 out of 13 stations on the A line, 13 out of 24 stations on the B line and 14 out of 20 stations on the C line. More stations are accessible with adjusted freight elevators.

An M1 type Metro train at the new Střížkov station

An 81-71M type Metro train at the Depo Hostivař station

The 8 May 2008 saw a new C line section opened between the *Ládví* and *Letňany* stations. It measures 4.6 kilometres (including turn and lay-by tracks) and offers three new stations to the passengers.

The *Střížkov* station has side platforms on the second level under ground. The level one and the ground level have footbridges to cross the tracks. The station is a single-nave single-vestibule hall. It handles 23 620 passengers between 5 a.m. and midnight on a workday.

The *Prosek* station is a reinforced concrete monolith construction with side platforms on the second level under ground. The level one is a subterranean vestibule and subways under the *Vysočanská* and *Prosecká* streets. The station handles 11 970 passengers from 5 a.m. to midnight.

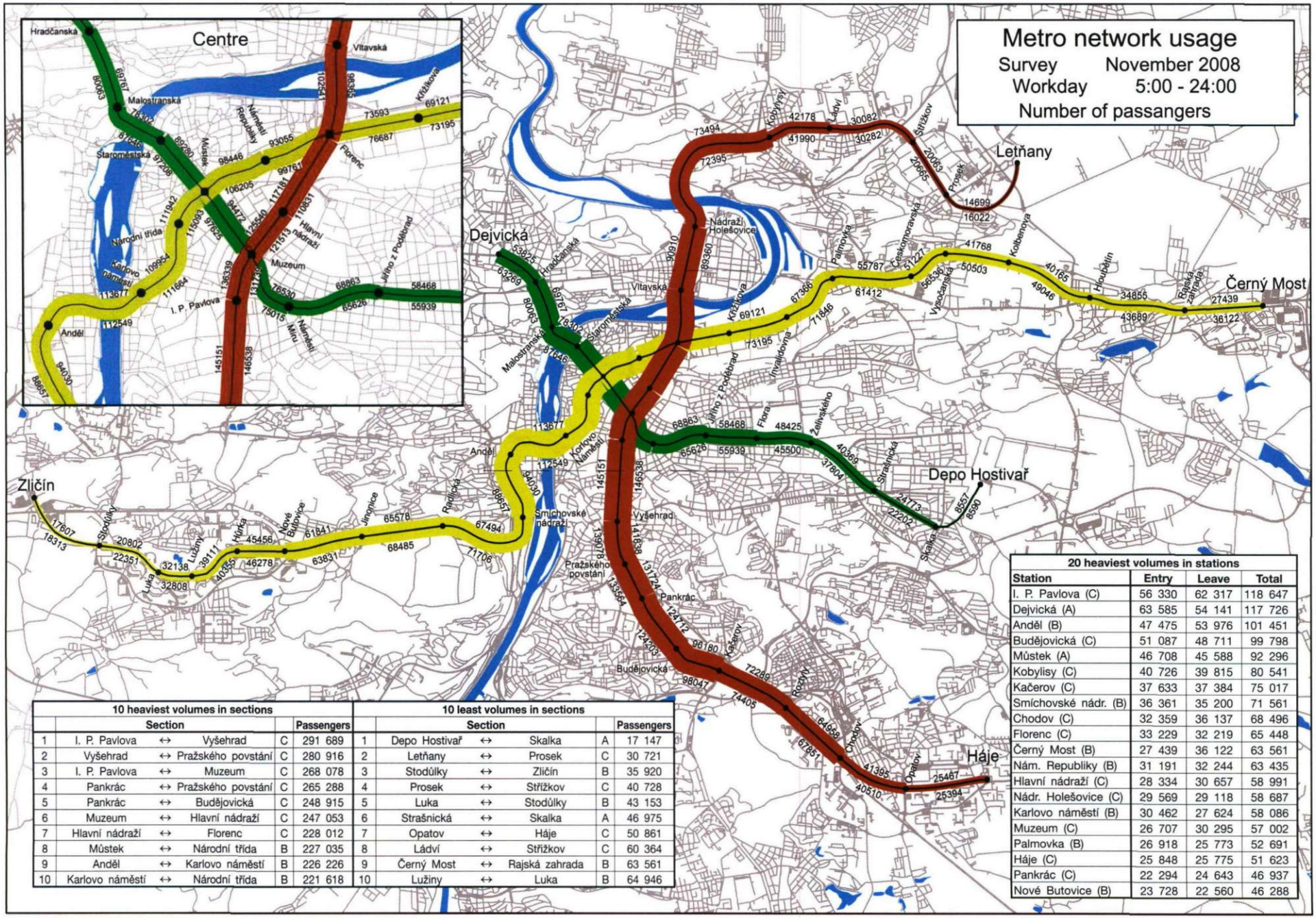
The *Letňany* terminus has a central platform on the level two under ground, with adjoining lay-by and service tracks. It is a reinforced concrete monolith construction. The underground level one has a vestibule, commercial spaces and stairs ascending to stops of 16 metropolitan and suburban bus lines servicing Prague north-east and close country. Additionally to the bus terminal, the station construction has provided a two-level Park-and-Ride parking facility (comprising 633 parking places) and places for a Kiss-and-Ride type of stopping. The station handles 30 720 passengers from 5 a.m. to midnight.

Interior of the new station Prosek on the line C

The M1 type Metro cars to operate the new section of the line was obtained by the Public Transit company in the previous years, no new trains were delivered in 2008. Additional 55 cars of the type 81-71 were modernised into an 81-71M type. These trains gradually replace the remaining original Russian-made trains that still run on the line B. The oldest 24 cars of the 81-71 type were scrapped in 2008. An average age of the cars in Metro operation is 5.3 years.

The November 2008 "Comprehensive Metro transit survey" results have shown the heaviest usage have the stations A line *Můstek* counting 188 081 passengers per day (including transfers) and C line *Muzeum* counting 161 915 passengers per day (including transfers). The total 569 000 passengers went through all the interchange Metro stations (*Můstek, Muzeum* and *Florenc*) entering, leaving and changing.

The highest enter/leave passenger count have *I. P. Pavlova* station (118 647 passengers per day), *Dejvická* (117 726 passengers per day) and *Anděl* (101 451 passengers per day).



10 heaviest volumes in sections						Passengers
	Section					
1	I. P. Pavlova	↔	Vyšehrad	C		291 689
2	Vyšehrad	↔	Pražského povstání	C		280 916
3	I. P. Pavlova	↔	Muzeum	C		268 078
4	Pankrác	↔	Pražského povstání	C		265 288
5	Pankrác	↔	Budějovická	C		248 915
6	Muzeum	↔	Hlavní nádraží	C		247 053
7	Hlavní nádraží	↔	Florenc	C		228 012
8	Můstek	↔	Národní třída	B		227 035
9	Anděl	↔	Karlovo náměstí	B		226 226
10	Karlovo náměstí	↔	Národní třída	B		221 618

10 least volumes in sections						Passengers
	Section					
1	Depo Hostivař	↔	Skalka	A		17 147
2	Letňany	↔	Prosek	C		30 721
3	Stodůlky	↔	Zličín	B		35 920
4	Prosek	↔	Střížkov	C		40 728
5	Luka	↔	Stodůlky	B		43 153
6	Strašnická	↔	Skalka	A		46 975
7	Opatov	↔	Háje	C		50 861
8	Ládví	↔	Střížkov	C		60 364
9	Černý Most	↔	Rajská zahrada	B		63 561
10	Lužiny	↔	Luka	B		64 946

20 heaviest volumes in stations			
Station	Entry	Leave	Total
I. P. Pavlova (C)	56 330	62 317	118 647
Dejvická (A)	63 585	54 141	117 726
Anděl (B)	47 475	53 976	101 451
Budějovická (C)	51 087	48 711	99 798
Můstek (A)	46 708	45 588	92 296
Kobylisy (C)	40 726	39 815	80 541
Kačerov (C)	37 633	37 384	75 017
Smíchovské nádr. (B)	36 361	35 200	71 561
Chodov (C)	32 359	36 137	68 496
Florenc (C)	33 229	32 219	65 448
Černý Most (B)	27 439	36 122	63 561
Nám. Republiky (B)	31 191	32 244	63 435
Hlavní nádraží (C)	28 334	30 657	58 991
Nádr. Holešovice (C)	29 569	29 118	58 687
Karlovo náměstí (B)	30 462	27 624	58 086
Muzeum (C)	26 707	30 295	57 002
Palmovka (B)	26 918	25 773	52 691
Háje (C)	25 848	25 775	51 623
Pankrác (C)	22 294	24 643	46 937
Nové Butovice (B)	23 728	22 560	46 288

The Metro fleet in 2008

Fleet	Inventory	Operation
81 – 71	127	41
81 – 71M	350	305
M 1	240	230
Total	717	576

The **tramway network** was 141.6 km long in the end of 2008. 52 % of the length was run on a dedicated trackbed (a raised embankment in roads, and in some places, on separate track lanes led outside of road). The average stop distance throughout the network is 534 m. The tramway transportation shared 27.4 % of all persons transported in 2008.

A new tram line was launched into regular operation on Saturday, 4. 10. 2008, connecting *Laurová* and the *Radlická* Metro station. The new section is 740 m long, with 3 stops (*Laurová, Škola Radlice, Radlická*). The *Radlická* extension has helped dismantle the unsatisfactory turning place at *Laurová*, where reversing across a busy street was necessary to turn the train. Jointly with the construction, the adjacent tram line section along the *Radlická* street has also been redeveloped with a new stop, *Braunova,* created.

A 14T-type tram at the Vítězné náměstí roundabout

The new Radlická tram turning place

The tram network performance was significantly affected with the Prague Ring Road construction at the *Letná* neighbourhood throughout 2008. This brought about long-term changes in seven lines. Additional lines have been permanently redirected in late August 2008. The line 23 has been discontinued and the parallel line 22 has had its frequencies halved at all times comparing to other lines. The line 7 started to serve the new direction to *Radlická* Metro station and small alterations in routes affected also lines 4, 6, 19 and 24.

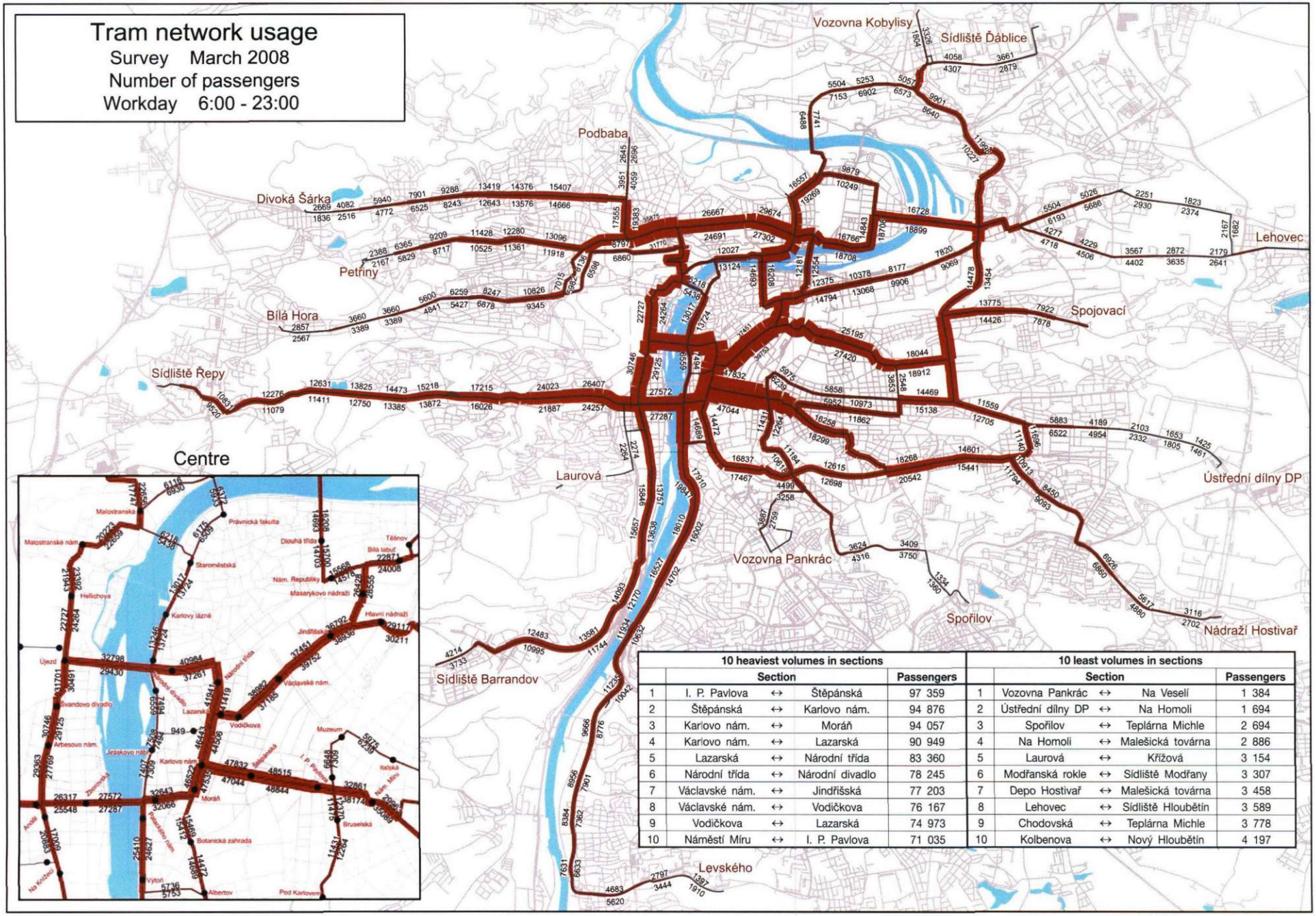
The Prague tram fleet continued to be expanded in 2008 with new low-floor 14T-type cars. An average age of the tram fleet in operation is 12.8 years.

The tram fleet in 2008

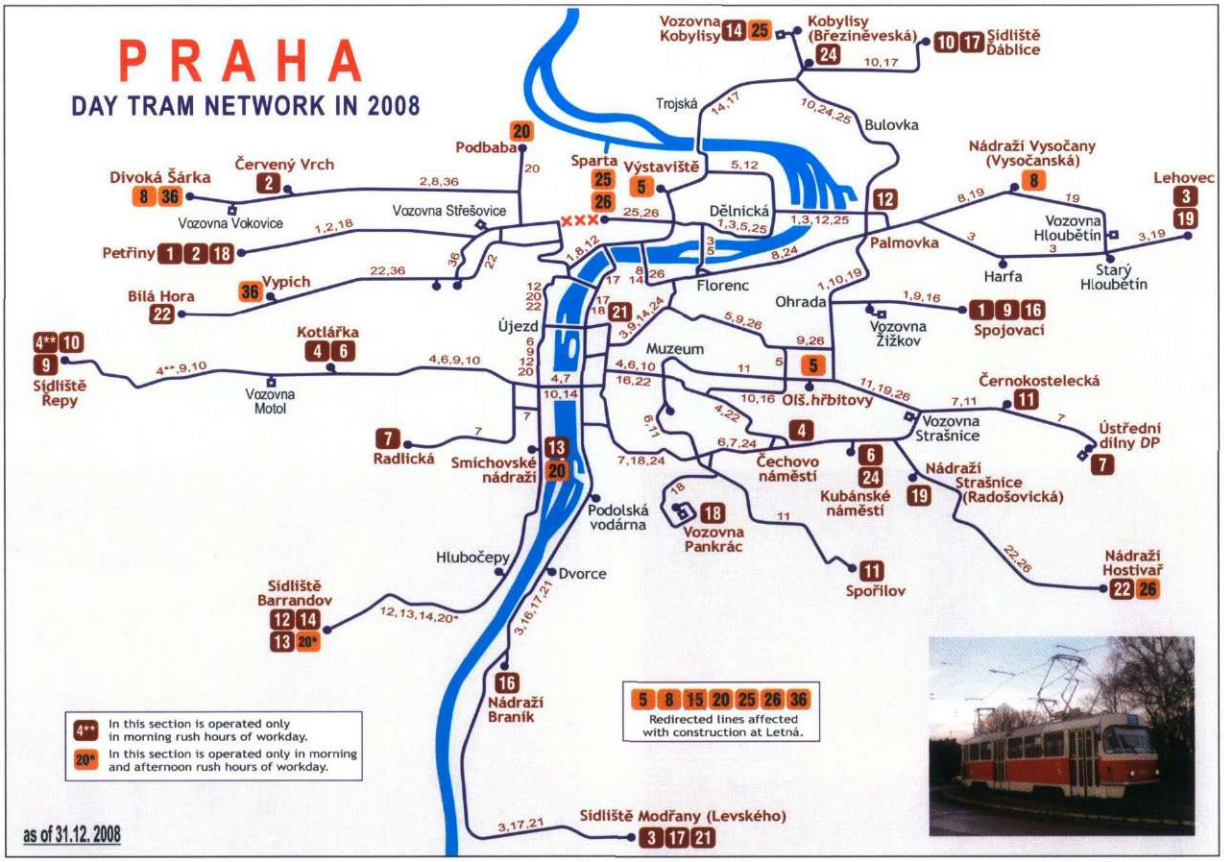
Fleet	Inventory	Operation
standard (T3, T3M, T3R, T3R.PV, T6)	859	847
low-floor (T3R.PLF)	12	12
standard articulated two-way (KT8D5)	24	23
low-floor articulated two-way (KT8N2)	23	23
low-floor articulated one-way (14T, RT6N)	55	51
Total	973	956

Tram network usage

Survey March 2008
Number of passengers
Workday 6:00 - 23:00



10 heaviest volumes in sections					10 least volumes in sections				
	Section			Passengers		Section			Passengers
1	I. P. Pavlova	↔	Štěpánská	97 359	1	Vozovna Pankrác	↔	Na Veselí	1 384
2	Štěpánská	↔	Karlovo nám.	94 876	2	Ústřední dílny DP	↔	Na Homoli	1 694
3	Karlovo nám.	↔	Moráň	94 057	3	Spořilov	↔	Teplárna Michle	2 694
4	Karlovo nám.	↔	Lazarská	90 949	4	Na Homoli	↔	Malešická továrna	2 886
5	Lazarská	↔	Národní třída	83 360	5	Laurová	↔	Křížová	3 154
6	Národní třída	↔	Národní divadlo	78 245	6	Modřanská rokle	↔	Sídliště Modřany	3 307
7	Václavské nám.	↔	Jindřišská	77 203	7	Depo Hostivař	↔	Malešická továrna	3 458
8	Václavské nám.	↔	Vodičkova	76 167	8	Lehovec	↔	Sídliště Hloubětín	3 589
9	Vodičkova	↔	Lazarská	74 973	9	Chodovská	↔	Teplárna Michle	3 778
10	Náměstí Míru	↔	I. P. Pavlova	71 035	10	Kolbenova	↔	Nový Hloubětín	4 197



The **bus transport** makes a complementary network to the Metro and trams, providing a coverage service across certain areas as well as important tangential links, especially in the outer zone of the city. The operational length of the bus transportation network within the city territory is 690 km. An average distance between stations and stops is 634 m. The bus share of the total persons transported by public service was 26.7 % in 2008.

Due to sector surveys made in 2007 as well as the Metro C line having been extended as far as Letňany, many bus lines have been rerouted in 2008. The north-east sector of the city saw changes in May simultaneously with launching the Metro extension. After the changes were evaluated, rerouting has been adjusted at the end of August.

An MHD bus goes on a newly built street, Beladova

The Letňany Metro station bus terminal

Night bus lines were also rerouted as of 30. 8. 2008. A direct nocturnal link have been introduced between the *Ruzyně* airport and the inner city by means of the 510 line. A tangential function of night lines has also been significantly enhanced.

An average age of the Public Transit (*DP Praha*) operated buses was 8.4 years as of 31. 12. 2008, specifically 8.0 years of standard buses and 9.4 years of articulated buses. The number of buses in operation that serve over 7 years is 776 including 233 articulated ones.

Prague Public Transit *(DP)* buses, 2008

Fleet	Inventory	Operation
standard	492	476
articulated	265	263
standard low-floor	342	342
articulated low-floor	52	51
E91 midibus	6	6
Total	1 157	1 138

A **funicular** provides a connection between the *Újezd* street, the *Nebozízek* place and the *Petřín* hilltop. Two tow-line cars in capacities of 100 passengers move along a railway 510 m long with an average speed of 6.12 km/h, climbing to the height of 130.45 m. The funicular transported almost 2 million passengers in 2008.

A funicular to Petřín at the intermediate stop of Nebozízek

A diversion boat while the Vyšehradský tunnel was redeveloped

Ferries across the *Vltava* river are the most recent addition to the *PID* transportation system, being auxiliary by nature. Five ferries were in service in 2008. The one labelled P1 connects the banks of the *Vltava* between *Sedlec* and *Zámky*, the P2 ferry runs between *Podbaba* and *Podhoří* and the P3 ferry links *Lihovar* with *Dvorce* (the right bank pier was moved from the *Veslařský ostrov* island to the *Žluté lázně* bath in 2008).

Two new ferries, P4 and P5, were established in August, 2008, that have linked the *Vltava* river banks and islands at the inner city. The P4 ferry provides the transit along the line *Národní divadlo (Hollar)* – *Střelecký ostrov* island – *Slovanský ostrov (Žofín)* island – *Dětský ostrov* island while the P5 ferry operates along the *Jiráskovo náměstí* square – the *Botel Admirál* hotel boat – the *Výtoň* quay – the *Císařská louka* meadow.

The ferry transit linking *Výtoň* with *Podolská vodárna* served a specific purpose in 2008. The X-21 line transported passengers of the temporarily discontinued tram link due to the *Vyšehradský* tunnel redevelopment in November, 2008.

Prague ferries operated in 2008, selected parametres

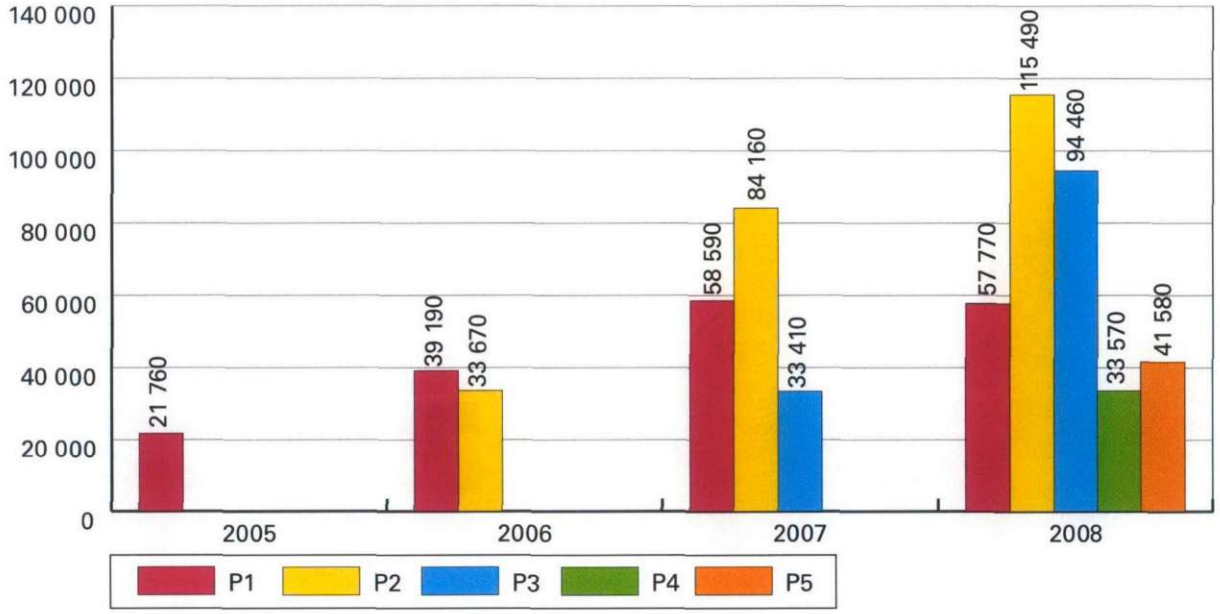
Name	Route	Started	Season	Months	Operator	Capacity in persons	Transported persons in 2008
P1	*Sedlec – Zámky*	1.7.2005	year-round	Jan.-Dec.	PVČS s.r.o.*	11	57 770
P2	*V Podbabě – Podhoří*	1.7.2006	year-round	Jan.-Dec.	PVČS s.r.o.*	11	115 490
P3	*Lihovar – Dvorce (Žluté lázně)*	17.7.2007	seasonal	Apr.-Oct.	Vittus group s.r.o.	12	94 460
P4	*Národní divadlo (Hollar) – Střelecký ostrov – Slovanský ostrov (Žofín) – Dětský ostrov*	1.8.2008	seasonal	Apr.-Oct.	PVČS s.r.o.*	20	33 570**
P5	*Jiráskovo náměstí – Botel Admirál – Výtoň – Císařská louka*	1.8.2008	seasonal	Apr.-Oct.	PVČS s.r.o.*	50	41 580**

* First General Boating Company *(První Všeobecná Člunovací Společnost, s.r.o.)*
** data for 3 months of operation (August – October)

A P4 ferry boat at the Národní divadlo (Hollar) pier

A P5 ferry boat arrives at the Výtoň quay

Persons transported by *PID* ferries in 2005 – 2008



Basic data on Prague Integrated Transport, 2008 (operated by *DP hl. m. Prahy, a. s.*)

	Metro	Trams	Buses	Total
Operational network length (km)	59.1	141.6	690.0	890.7
including on dedicated trackbed (%)	100	52	-	-
Operational network length outside Prague (km)	-	-	132.0	132.0
Average station/stop distance (m)	1 094	534	634	-
Average commercial speed (km/h)	35.5	18.5	25.7	-
Annual VKT in Prague (000s)	52 780	48 704	61 991	163 475
Annual VKT outside Prague (000s)	-	-	1 540	1 540
Annual passengers transported in Prague (000s)	596 893	356 834	297 884	1 251 611
Annual passengers transported outside Prague (000s)	-	-	10 228	10 228
Employees of *DP hl. m. Prahy, a. s.*	11 553			
Revenue from tickets (mil. czk)	4 554			
Operational costs (mil. czk)	14 180			
Revenue/costs ratio (%)	32.1			

Development of selected characteristics of public transport (operated by *DP hl. m. Prahy, a. s.*)

Year	Operational network length (km+)			Average commercial speed (km/h)			Traffic and transport performance on an average workday	
	Metro	Trams	Buses	Metro	Trams	Buses	Seat-km (mil.)	Passengers (000s)
1981	19.3	122.9	545.0	32.2	15.7	23.8	46.7	3 638
1990	38.5	130.5	607.3	34.6	18.7	23.7	57.6	4 189
1995	43.6	136.2	671.4	34.9	19.0	23.3	53.4	3 409
2000	49.8	136.4	812.4*	35.7	18.9	25.2*	56.0*	3 290++
2001	49.8	137.5	806.8*	35.4	19.2	25.9*	56.8*	3 468++
2002	49.8	137.5	818.0*	35.4	19.5	25.9*	56.4*	3 492++
2003	49.8	140.9	819.8*	35.7	19.6	26.3*	58.3*	3 530++
2004	53.7	140.9	822.1*	34.6	19.3	26.1*	61.3*	3 599++
2005	53.7	140.9	810.6*	34.6	18.7	25.9*	62.8*	3 774++ (3 628)
2006	54.7	140.9	817.0*	34.6	18.9	25.8*	63.1*	3 900++ (3 747)
2007	54.7	140.9	820.2*	35.8	18.8	25.7*	63.0*	3 970++ (3 783)
2008	**59.1**	**141.6**	**822.0***	**35.5**	**18.5**	**25.7***	**66.9***	**3 980++ (3 820)**

\+ The operational length is the total length of regularly operated lines that are available to passengers, measured along the line axis, or street axis with bus lines. With Metro, it is the total length of the lines from terminal platform midpoint.

* incl. suburban *PID* lines operated by Prague Public Transit, Co. Inc. *(DP hl. m. Prahy, a. s.)*

++ persons transported inside Prague (in parentheses: persons transported only by *DP hl. m. Prahy, a. s.).*

The line 23 (discontinued in 2008) crosses the Míru square

A SOR- type bus at the Malešice suburbs

Comprehensive transport surveys throughout the Metro and day tram networks were conducted in 2008. Partial rerouting and operational parameter adjustments in individual lines were made early in September and in December based on evaluation of the surveys. The tram and Metro network usage in 2008 is laid out on preceding pages of the chapter 3.

3.1.3 Suburban public transport inside Prague

The suburban public transport included in *PID* inside and outside of Prague is provided by railway and bus lines.

The suburban railway transport is operated by Czech Railways, Co. Inc. (*České dráhy, a. s.*) on all the 10 routes entering Prague. 8 routes are completely incorporated into the Integrated Transport System in Prague. A complete incorporation means the lines acknowledge both prepaid coupons and individual *PID* tickets (the stations are equipped with yellow validating machines). The length of the routes throughout Prague territory is 160 km, with 43 stations and stops. The highest volumes transported are achieved by the railways on the lines *Praha – Kolín* (route 011 / line S1) and *Praha – Beroun* (route 171 / line S7).

Passengers transported by railways with *PID* tickets in Prague

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Passengers (000s.)	10 048	14 932	15 700	16 032	15 998	16 584	16 531	17 192	**17 278**

Using railways for trips to the inner city has great advantages for passengers travelling from the outskirts of Prague, especially due to introducing "S" railway lines (*"Esko – Spojení pro město"*, Es – get to city with noblesse) in operation from later 2007. Jointly with the "New Link" connection (launched on the nation-wide new timetable day of 14. 12. 2008), the ten "S" lines with regular frequencies and departure times easy to remember were joined with two additional "S" lines and parallel three "R" speed lines.

A series 451 suburban train at the Praha-Kolovraty stop

"City Elefant" suburban trains at the Masarykovo nádraží station

S and R (speed) railway lines crossing in to Prague (since 14. 12. 2008)

S1	***Praha Masarykovo nádraží*** *– Praha-Libeň – Praha-Klánovice – Poříčany – Velim –* ***Kolín***
S2	***Praha Masarykovo nádraží*** *– Praha-Vysočany – Praha-Horní Počernice – Nymburk – Poděbrady –* ***Kolín***
S3	***Praha-Vršovice*** *– Praha hlavní nádraží – Praha-Čakovice – Neratovice –* ***Všetaty***
S4	***Praha Masarykovo nádraží*** *– Praha-Bubeneč – Praha-Sedlec – Roztoky u Prahy –* ***Kralupy nad Vltavou***
S5	***Praha Masarykovo nádraží*** *– Praha-Dejvice – Praha-Ruzyně – Hostivice –* ***Kladno***
S6	***Praha-Smíchov*** *– Praha-Holyně – Praha-Řeporyje – Rudná u Prahy –* ***Beroun***
S7	***Praha hlavní nádraží*** *– Praha-Smíchov – Praha-Radotín – Karlštejn –* ***Beroun***
S8	***Praha-Vršovice*** *– Praha-Braník – Praha-Zbraslav – Vrané nad Vltavou –* ***Čerčany***
S9	***Praha hlavní nádraží*** *– Praha-Hostivař – Praha-Kolovraty – Říčany – Strančice –* ***Benešov u Prahy***
S29	***Praha-Vysočany*** *– Praha hlavní nádraží – Praha-Hostivař – Praha-Kolovraty – Říčany –* ***Strančice***
S41	***Praha-Libeň*** *– Praha-Holešovice – Praha-Sedlec –* ***Roztoky u Prahy***
S80	***Praha-Vršovice*** *– Praha-Braník – Praha-Zbraslav – Vrané nad Vltavou –* ***Dobříš***
R3	***Praha-Vršovice – Všetaty***
R4	***Praha Masarykovo nádraží – Kralupy nad Vltavou***
R5	***Praha Masarykovo nádraží – Kladno***

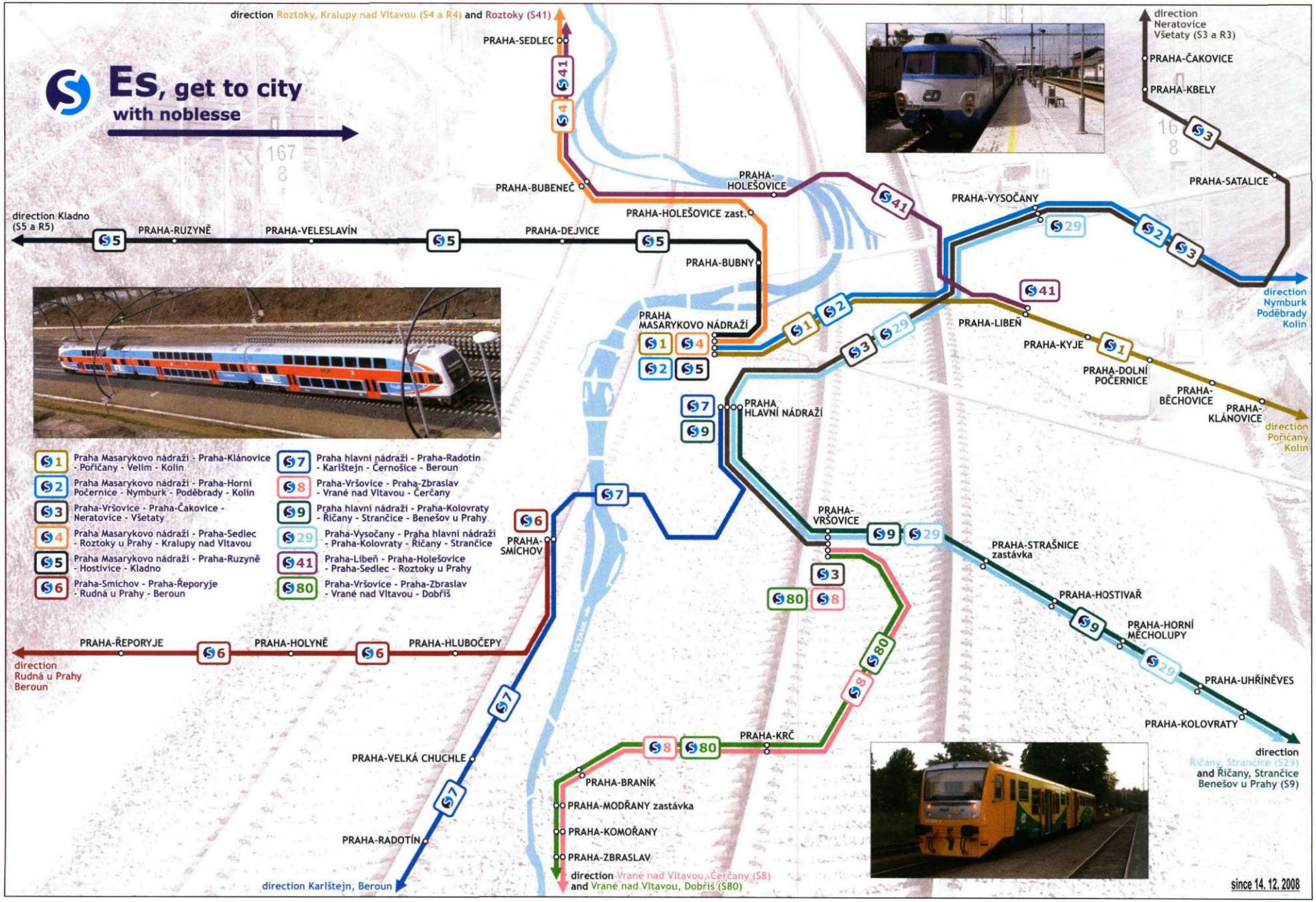
Stops in bold are terminals. The underlined stops are the first/last ones inside Prague.

The transport duration between the last stop inside Prague and the inner city as well as an average frequency in traffic peaks (sometimes different for morning and afternoon peaks) are given in the following table for the six most important railway routes:

Transport characteristics on the most important sections of Prague railways (since 14. 12. 2008)

Railway route	Average peak frequency	Average travel duration	Distance
Praha-Klánovice – Praha Masarykovo nádraží (S1)	30 min	25 min	18 km
Praha-Kolovraty – Praha hlavní nádraží (S9, S29)	15 min	24 min	17 km
Praha-Radotín – Praha hlavní nádraží (S7)	10 min / 15 min*	18 min	13 km
Praha-Sedlec – Praha Masarykovo nádraží (S4)	30 min	13 min	9 km
Praha-Horní Počernice – Praha Masarykovo nádraží (S2)	20 min / 30 min*	16 min	15 km
Praha-Ruzyně – Praha Masarykovo nádraží (S5)	30 min / 60 min*	25 min	13 km

* morning and afternoon peaks

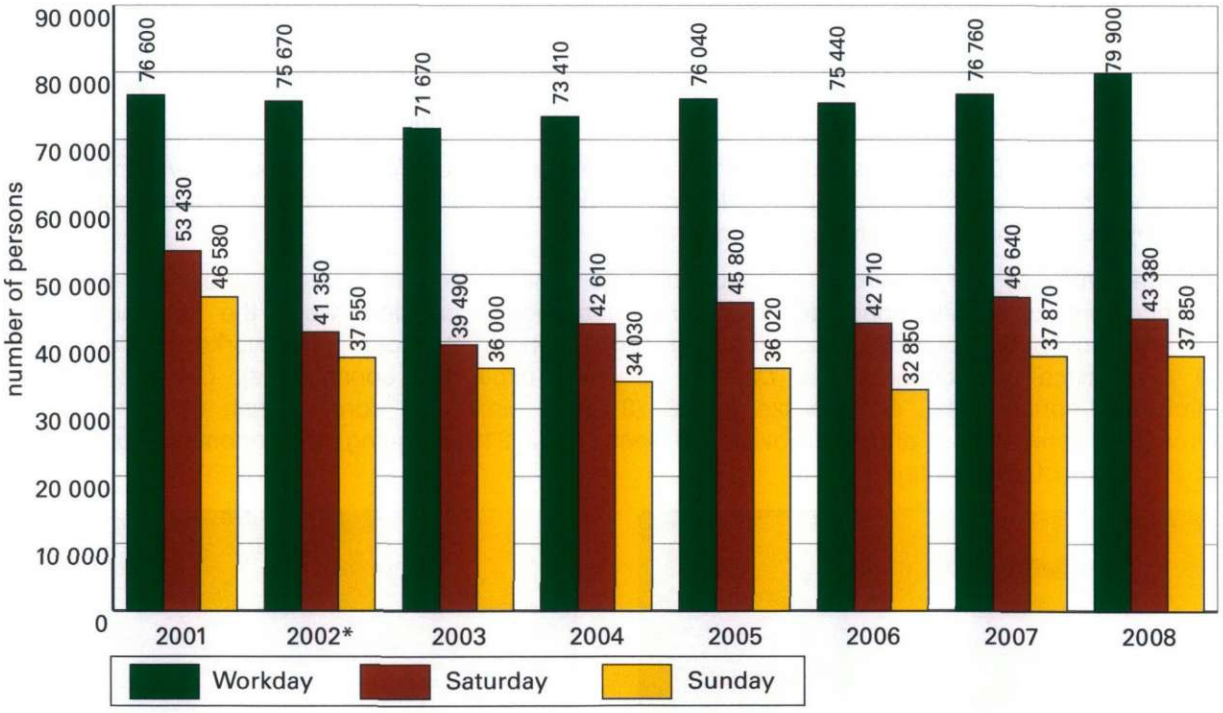

Es, get to city
with noblesse
direction Roztoky, Kralupy nad Vltavou (S4 a R4) and Roztoky (S41)
PRAHA-SEDLEC
PRAHA-BUBENEČ
PRAHA-HOLEŠOVICE
PRAHA-HOLEŠOVICE zast.
direction Kladno (S5 a R5)
PRAHA-RUZYNĚ
PRAHA-VELESLAVÍN
PRAHA-DEJVICE
PRAHA-BUBNY
PRAHA MASARYKOVO NÁDRAŽÍ
PRAHA HLAVNÍ NÁDRAŽÍ
PRAHA-VYSOČANY
PRAHA-LIBEŇ
PRAHA-KYJE
PRAHA-DOLNÍ POČERNICE
PRAHA-BĚCHOVICE
PRAHA-KLÁNOVICE
direction Poříčany Kolin
direction Neratovice Všetaty (S3 a R3)
PRAHA-ČAKOVICE
PRAHA-KBELY
PRAHA-SATALICE
direction Nymburk Poděbrady Kolin
PRAHA-VRŠOVICE
PRAHA-STRAŠNICE zastávka
PRAHA-HOSTIVAŘ
PRAHA-HORNÍ MĚCHOLUPY
PRAHA-UHŘÍNĚVES
PRAHA-KOLOVRATY
direction Říčany, Strančice (S29) and Říčany, Strančice Benešov u Prahy (S9)
PRAHA-SMÍCHOV
PRAHA-ŘEPORYJE
PRAHA-HOLYNĚ
PRAHA-HLUBOČEPY
direction Rudná u Prahy Beroun
PRAHA-VELKÁ CHUCHLE
PRAHA-RADOTÍN
direction Karlštejn, Beroun
PRAHA-KRČ
PRAHA-BRANÍK
PRAHA-MODŘANY zastávka
PRAHA-KOMOŘANY
PRAHA-ZBRASLAV
direction Vrané nad Vltavou, Čerčany (S8) and Vrané nad Vltavou, Dobříš (S80)
S1 Praha Masarykovo nádraží - Praha-Klánovice - Poříčany - Velim - Kolín
S2 Praha Masarykovo nádraží - Praha-Horní Počernice - Nymburk - Poděbrady - Kolín
S3 Praha-Vršovice - Praha-Čakovice - Neratovice - Všetaty
S4 Praha Masarykovo nádraží - Praha-Sedlec - Roztoky u Prahy - Kralupy nad Vltavou
S5 Praha Masarykovo nádraží - Praha-Ruzyně - Hostivice - Kladno
S6 Praha-Smíchov - Praha-Řeporyje - Rudná u Prahy - Beroun
S7 Praha hlavní nádraží - Praha-Radotín - Karlštejn - Černošice - Beroun
S8 Praha-Vršovice - Praha-Zbraslav - Vrané nad Vltavou - Čerčany
S9 Praha hlavní nádraží - Praha-Kolovraty - Říčany - Strančice - Benešov u Prahy
S29 Praha-Vysočany - Praha hlavní nádraží - Praha-Kolovraty - Říčany - Strančice
S41 Praha-Libeň - Praha-Holešovice - Praha-Sedlec - Roztoky u Prahy
S80 Praha-Vršovice - Praha-Zbraslav - Vrané nad Vltavou - Dobříš
since 14. 12. 2008

Transported persons in Prague (P+0+B zones) **in 24 hours by routes and lines**
workday (averages of spring and autumn annual surveys)

Route (line)	2001	2002*	2003	2004	2005	2006	2007	2008
011 (S1)	17 510	19 080	17 450	17 600	18 270	19 040	17 120	17 580
070 (S3)	1 950	1 940	1 690	1 790	1 790	1 740	2 190	2 260
091 (S4)	9 120	7 810	6 990	8 640	9 100	9 700	9 410	10 030
120 (S5)	5 010	4 980	4 350	4 170	4 520	4 500	3 920	4 310
122	200	130	320	290	240	190	210	200
171 (S7)	14 500	13 780	13 610	13 410	14 230	14 230	15 740	16 450
173 (S6)	420	430	490	330	350	390	420	510
210 (S8)	2 820	2 000	2 450	2 410	2 200	2 070	2 090	1 830
221 (S9)	16 490	15 380	14 760	15 290	14 390	12 420	12 810	13 780
231 (S2)	8 580	10 140	9 560	9 480	9 880	10 040	10 480	11 060
ML (S41)	0	0	0	0	1 070	1 120	1 750	1 890
Total	76 600	75 670	71 670	73 410	76 040	75 440	76 140	79 900

* data exclude shuttle transport operated due to floods

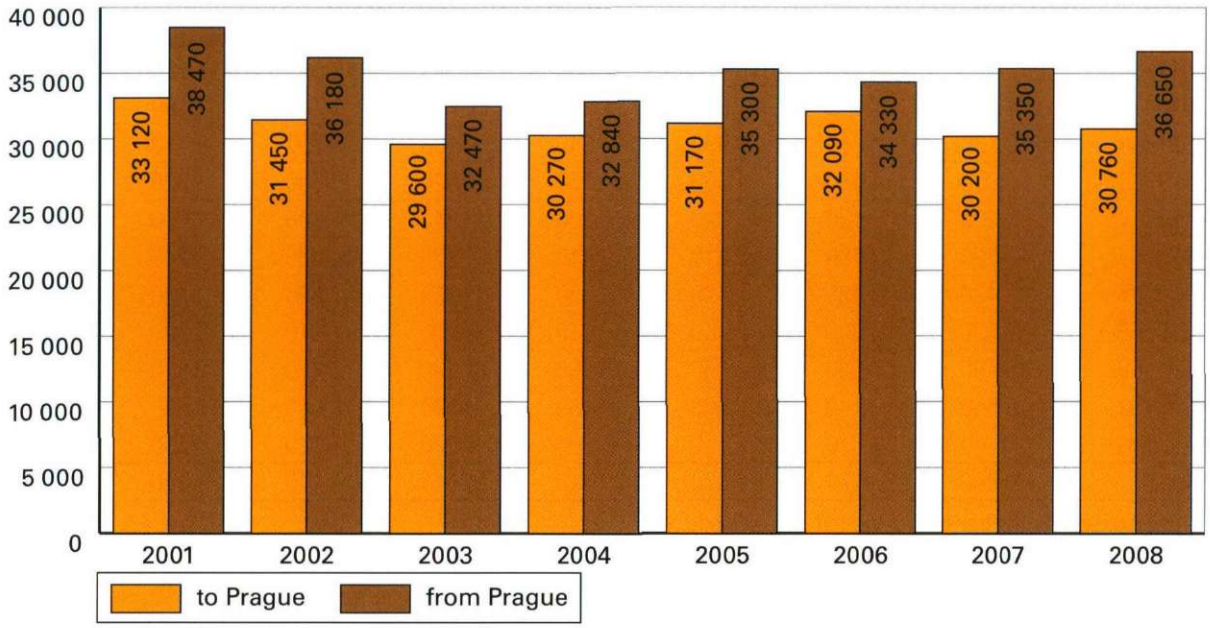
Transported persons in Prague (P+0+B zones) **in 24 hours by trains included in *PID***



* data exclude shuttle transport operated due to floods

The Prague border profiles exposed the most in 2008 were the section *Úvaly – Praha-Klánovice* (route 011 / line S1) with a daily total of 13 230 passengers both ways and the section *Černošice – Praha-Radotín* (route 171 / line S7) with a daily total of 13 010 passengers both ways. The border profiles with the least exposure in 2008 were the section *Hostivice – Praha-Zličín* (route 173) with a daily total of 190 passengers both ways and the section *Zbuzany – Praha-Řeporyje* (route 122 / line S6) with a daily total of 390 passengers both ways.

Passengers crossing boundary of Prague in *PID* system trains on a workday (0-24 h)



The suburban *PID* bus transport consisted of 152 lines as of 31. 12. 2008, out of which 88 provided connection from the *Středočeský kraj* region to the Capital of Prague. Almost 3 700 connections crossed the city borders both ways on the lines on an average workday in 2008. They transported the total of about 88 000 passengers. On the other hand, 64 *PID* bus lines run only inside the region outside of Prague as of the end of 2008.

The suburban *PID* bus transport used 22 locations in Prague for their departure/terminal sites to serve the outer region in 2008. Following introduction of the new Metro C line section, the *Letňany* bus terminal was also put in operation.

The terminals of the suburban *PID* bus transport inside Prague that are important the most in numbers of connections departed and passengers handled were the terminals *Zličín* (12 lines, circa 500 outgoing and incoming connections in 24 hours of a workday), *Černý Most* (9 lines, circa 400 connections), *Dejvická* (8 lines, circa 420 connections), *Letňany* (7 lines, circa 400 connections), *Smíchovské nádraží* (8 lines, circa 300 connections), *Opatov* (9 lines, circa 380 connections) and *Budějovická* (9 lines, circa 310 outgoing and incoming connections in 24 hours of a workday).

The Depo Hostivař stop before the December changes took place

A suburban bus No. 316 on the Evropská street

The largest drop in outgoing lines in 2008 was seen at the *Depo Hostivař* terminal where only two of the previous seven lines continued to arrive following 14. 12. 2008. The end stop of three lines approaching the *Depo Hostivař* from the east was transferred to the *Háje* Metro station, one line started to arrive at the *Skalka* Metro station and one line was discontinued. The reason was to help make their frequencies more regular by diverting these lines away from the *Kutnohorská* street, overloaded with private traffic.

3.2 Public transport in Prague not included in PID

Additionally, public transport of passengers is provided in Prague apart from the *PID* system and financed from other sources. It is the bus transport servicing the airport *Praha-Ruzyně* (the AE line), servicing large shopping parks and centres as well as providing connections for special purposes.

The AE line in front of the Hlavní nádraží building and its departure stop

After the "New Link" was opened in the end of 2008, long-distance train connections have been transferred from the *Holešovice* railway station to the *Praha hlavní nádraží* main station. For that reason the AE line heads for the *Ruzyně* airport from this very station. The line has two intermediate stops, *Dejvická* and *Masarykovo nádraží*. The airport-bound *Dejvická* stop serves for boarding only, the city-bound stops provide exit only.

Bus lines serving large shopping parks and centres offer free service to passengers. Prague had 17 such lines in the end of 2008, operating for seven Prague shopping premises (*Letňany, Zličín, Štěrboholy, Černý Most, Stodůlky, Šestka-Ruzyně, Butovice*).

A GLOBUS liner at the Zličín bus terminal

A WBC Zličín – Chrášťany liner

3.3 Outer public transport

3.3.1 Railway transportation

The railway transportation covers primarily the transport relations between Prague and places outside by means of local and long-distance trains. The engineering infrastructure of the transportation is provided by the governmental Railway Track Authority (*Správa železniční dopravní cesty*), the operation is run by Czech Railways, Co. Inc. (*České dráhy, a. s.*).

The handled passengers trend in 2008, again, was affected with the "New Link" construction as well as the redevelopment of the I. to IV. platforms at the *Praha hlavní nádraží* main station. The two constructions were completed in December, 2008, and put in full operation on the nation-wide new timetable day.

Redevelopment of the I. to IV. platform at the Praha hlavní nádraží station and the IV. platform revamped

Trains dispatched from Prague railway stations, 2002 – 2008

		2002	2003	2004	2005	2006	2007	2008
Trains	outgoing	162 578	170 706	159 681	159 524	161 193	160 360	174 615
	incoming	162 990	170 324	160 888	160 731	163 510	160 665	174 947
	total	325 568	341 030	320 569	320 255	324 703	321 025	349 562

Performance of Prague key railway stations in 2008

	Persons getting on (000s/year)	Persons getting off (000s/year)	Total (000s/year)	Trains at railway station
Praha hlavní nádraží	8 636	7 444	16 080	76 531
Praha Masarykovo nádraží	5 841	4 088	9 929	46 511
Praha-Smíchov	2 127	2 040	4 167	38 201
Praha-Vršovice	756	904	1 660	85 400
Praha-Libeň	461	651	1 112	66 121
Praha-Vysočany	672	824	1 496	45 741
Praha-Holešovice	1 859	2 022	3 881	26 283

An express train going through the Praha-Uhříněves station

A Pendolino train at the Praha hlavní nádraží station

3.3.2 Coach services

Public coach services connecting Prague with other territories of region (except *PID*) and the rest of the nation are offered by many operators from all over the Czech Republic, some international lines are also offered by foreign operators.

A detailed survey repeated again in 2007 has shown the Prague border was crossed both ways by almost 57 000 persons in regular connections of the long-distance coaches and regional buses (excluding *PID* connections) on a workday.

Almost 2 700 coaches and buses crossed a Prague boundary either way in 24 hours of an average workday according to the 2007 data. Included were about 1 450 regional transport connections (excluding *PID*), over 1 000 long-distance coaches as well as almost 250 international coaches. The most heavily loaded border profile is the D1 motorway section with its 18.5 % of the total connections.

The *Florenc* terminal coach station for regular outbound coach transportation (*ÚAN Florenc*) is long time the most heavily utilized terminal.

Development of selected characteristics of the Florenc coach terminal, 2003 – 2008

	2003	2004	2005	2006	2007	2008
Annual number of connections	230 000	220 000	220 000	210 000	200 000	**180 000**
Connections per an average workday – total	700	700	660	650	620	**550**
including: international connections	110	150	140	140	140	**120**
domestic long-distance connections	590	550	520	510	480	**430**
Number of operators	100	95	90	90	90	**85**

More connections are dispatched and terminated at coach terminals *Černý Most, Dejvická, Hradčanská* (while the Inner Ring is under construction, coaches leave from the *Na valech* street, the *Dejvická* Metro station and the *Zličín* terminal), *Nádraží Holešovice, Smíchovské nádraží, Na Knížecí, Roztyly* and *Zličín.*

A long-distance coach at the ÚAN Florenc terminal

A SID regional connection at the Zličín terminal

Regional and suburban in character are also lines that link Prague with the surrounding country. These lines are not included in the Prague Integrated Transport (*PID*) system, their tariffs belong to the regional integrated transport system of *Středočeská integrovaná doprava* (*SID*).

The *SID* lines crossing over to Prague are labelled with letters A (*Kladno* region), B (*Rakovník* region), C (*Beroun* region), D (*Příbram* region), E (*Benešov* region) and F (*Kutná Hora* region) followed with the number of the line. They arrive mostly to the Metro stations of *Dejvická, Roztyly, Nové Butovice, Anděl (Na Knížecí), Hradčanská, Černý Most* as well as the *Letiště Praha-Ruzyně* airport.

4

MOBILITY MANAGEMENT AND TELEMATICS

4.1 Telematics in traffic

Telematics integrates IT and communications in traffic with transportation engineering in order to optimise performace, safety and quality of mobility in the extant infrastructure, often already overloaded with traffic. Telematics in mobility is becoming an umbrella effort in recent years in what formerly were specific domains of central mobility management, traffic light operations, supervisory and warning systems. Possibilities of this developing technology are being ever more explored for both private and public transportation.

"Principles for the development of telematics in traffic for the Capital of Prague", approved in 2002, define 11 areas where telematics is gradually developed in Prague since 2002, viz. Area 1: Road traffic management, Area 2: Information for traffic and travel, Area 3: Parking systems, Area 4: Public transport, Area 5: Systems of supervision and warning, Area 6: Safety and rescue systems, Area 7: Electronic payments, Area 8: Vehicle systems, Area 9: Haulage, Area 10: Data collection and management, Area 11: Traffic infrastructure administration.

The accent, in 2008, was put especially on Area 1 (TSD), 2 (Travel time systems, maps update for dynamic navigators), 5 (section speed measurement, red light violation control device refurbishment) and 10 (data collection for traffic management and information).

4.2 Construction and renovation of traffic signals

The effort to renew and install new traffic signal devices (TSD) continued in 2008, drawing on the conditions set in the tender in 2006. The *Eltodo DS, s. r. o.,* company with their subcontractors went on to bring to completion the system of local mobility management centres (*ODŘÚ*) and coordination cables on the territory of the Capital of Prague, complying with the new concept of division of traffic areas approved in 2007.

New *ODŘÚ* local control centres are set up in or close to Metro stations from where links are made to the Principal mobility management centre (*HDŘÚ – Hlavní dopravní řídící ústředna Praha*). New development concept was worked out in 2008 to channel the cables in Metro tunnels as well as inside roads of the City and Prague Ring Roads and radial ones.

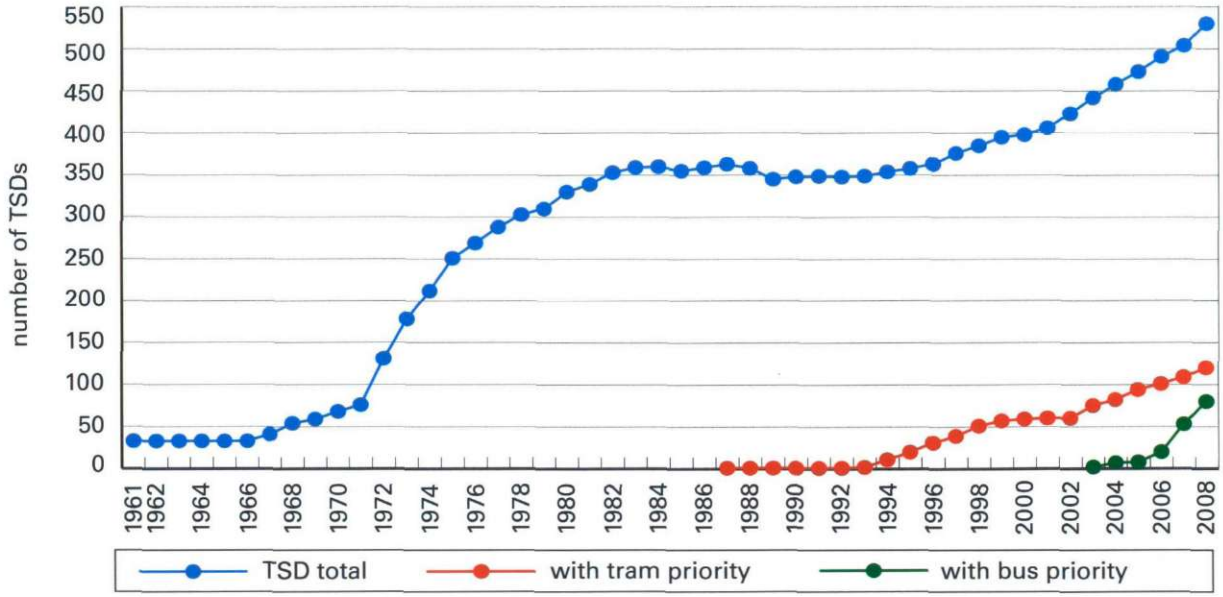
A make-up TSD on Milady Horákové – tram passage

A renewed TSD at Sokolovská – U Rustonky

The total of 532 TSDs were in service throughout the territory of Prague as of 31. 12. 2008. 30 TSDs were installed, 2 TSDs were dismantled during the past twelve months.

Altogether 78 autonomous signalled pedestrian crosswalks were in the Capital in the end of 2008. Nine autonomous crosswalks were introduced. Acoustic signal devices for the blind are implemented at 390 crossroads. 213 TSDs serve on the tram network, including 121 TSDs (56,8 %) operating with tram priority, 50 of which (23,5 %) offer an absolute priority. Also public buses can use priority features at 81 TSDs.

Traffic signals in Prague, 1961 – 2008



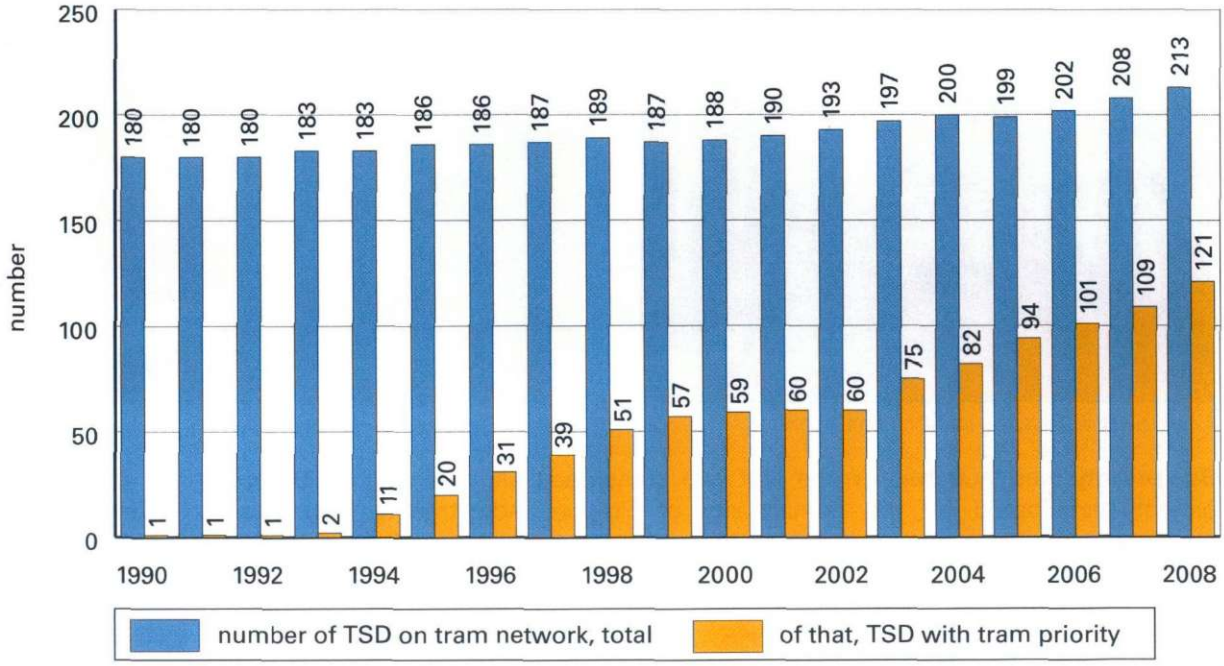
Basic data on TSDs, 1961 – 2008

	1961	1971	1981	1990	2000	2005	2006	2007	2008
TSD total (controllers counted from 2005)	33	76	339	348	398	473	491	504	**532**
including pedestrian crosswalks	-	9	37	45	57	72	76	78	**86**
with tramway priority	-	-	-	1	59	94	101	109	**121**
with bus priority	-	-	-	-	-	8	20	53	**81**

4.3 TSD priority for public transport vehicles

New and renovated TSDs are equipped with devices that offer both dynamic control on demand from vehicles and pedestrians as well as priority for the public transport vehicles (PT). PT vehicles then may take preference and have the Go signal prolonged in real time in keeping with their requirements at the moment so as to go through the TSD-controlled crossroads with minimum or no delays.

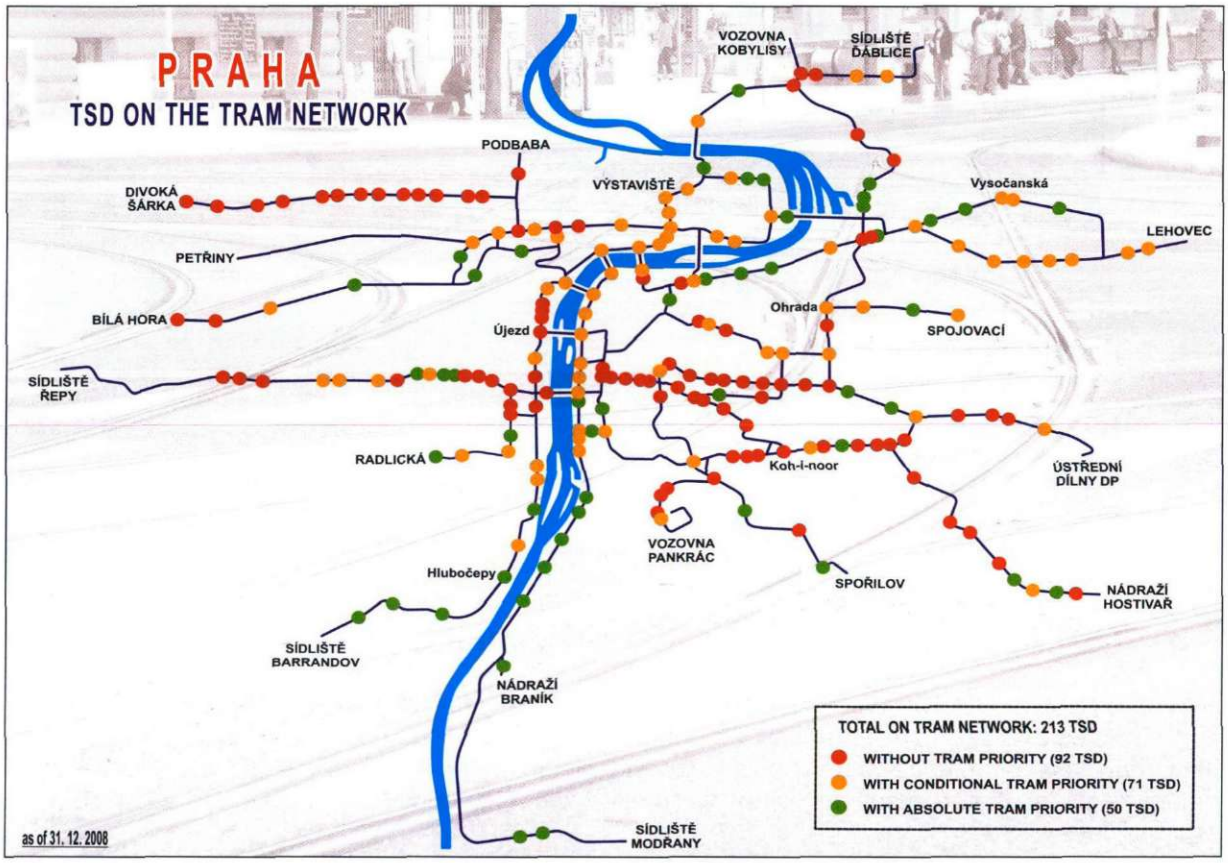
TSD on the tram network in Prague, 1990 – 2008



The number of TSDs with **tram priority** grew by additional 12 locations during 2008. Seven new TSDs appeared on the tramway network with simultaneously introduced priority (an absolute priority in three of them).

Priority for trams started to apply also on six older crossroads (a conditional priority on five of them, an absolute one on another crossroad). Two TSDs were dismantled as car traffic was lifted along the *Invalidovna* tram stop.

The control or detection systems were altered from an absolute preference to a conditional one on 4 TSDs (*Plzeňská – Podbělohorská*, *Poděbradská – Podkovářská*, *Poděbradská – U Elektry* and *Poděbradská – Hloubětínská*).



A new TSD at Na Zlíchově – Nad Zlíchovem

A new TSD at Radlická – the tram loop

Bus priority was launched on the first two crossroads as early as in 2003 under the Trendsetter project participated by the municipality of Prague. Adjustments were made to enable bus priority on the TSDs each time close to a newly opened Metro C line segment from *Holešovice* neighbourhood to *Kobylisy, Ládví, Prosek* and *Letňany* from 2004 to 2007. The total of bus priority TSDs in the capital was 81, specifically 74 ones with an active detection and 7 with a passive detection as of 31. 12. 2008.

The passive detection registers the bus in the dedicated lane by means of a vehicle loop or video detection. The bus priority active detection system operates on radio communication of the vehicle and the TSD controller. An infra-transmitter placed at an adequate offset from the stop line is used to spot vehicles approaching the crossroads. A device inside the vehicle transmit a preference request to the controller.

A bus passes a TSD at Beladova – Listova

An active detection bus at a TSD (circled)

4.4 Control centres

The "Urban road mobility management system" kept expanding and updating in 2008. Based on a tender to upgrade the Principal mobility management centre Prague (*Hlavní dopravní řídící ústředna – HDŘÚ Praha*), a new management system started to be delivered. New control modules were supplied for data processing and evaluation, traffic condition calculation, warning messages, graphic presentation and supervision of the current condition of traffic, running scenarios and influencing traffic as well as producing and editing traffic information.

It is the Technical Administration of Roads of the City of Prague (*Technická správa komunikací hl. m. Prahy*) that is responsible for maintaining the central mobility management system in the city. The *HDŘÚ* control is installed at the Public Transport Central Control (*Centrální dispečink MHD*) building at the *Na bojišti* street, *Praha 2*. It was operated by the Prague Constabulary of the Police of the Czech Republic (*Policie ČR – Správa hl. m. Prahy*) in 2008.

Under the mobility management system, the site was connected to 231 TSDs via several local controls (*ODŘÚ*) as of 31. 12. 2008. Local controls employ *VRS 2100, Migra* and *Scala* systems. The oldest system, *ADT*, was closed in 2008. All crossroads that had been linked to it were rewired to a new Scala system – 53 TSDs in the neighbourhoods of *Vinohrady, Vršovice* and *Nové Město* as well as 21 TSDs along the *Evropská* street (these TSDs are planned to belong to the *"SZ"* (Northwest) control). Included in the new *ODŘÚ* control development were deliveries of the "S" (North) control with 3 TSDs connected so far close to a new Metro station, *Letňany,* and a "JZ" (Southwest) control.

Number of TSDs connected to the *HDŘÚ* centre via local *ODŘÚ* sites at the end of 2008:

- area "C1" (Centrum 1 – right bank) – 104 TSDs
- area "C2" (Centre 2 – left bank) – 65 TSDs
- area "C3" (Centre 3 – *Holešovice*) – 27 TSDs
- area "V" (East) – 32 TSDs
- area "S" (North) – 3 TSDs

4.5 Mobility Information Centre (DIC) Prague

Mobility Information Centre (*DIC*) Prague has been in operation since 1. 7. 2005. The Centre currently offers information services in monitoring and classifying traffic load, providing information on planned long-term closures and emergencies in the road network and supplying outputs from municipal information databases, notably to web pages. The data on which provided information is based are drawn out of the *HDŘÚ* mobility management systems as well as a number of devices installed on streets.

A RDS-TMC (Radio Data System – Traffic Message Channel) system is the fourth service for drivers by the *DIC Praha*. It is capable of displaying current traffic information in the navigation maps in vehicles and adjust the guidance accordingly. The message format is fully standardised in line with the ALERT C international standards (the broadcast is provided jointly with *Český rozhlas,* a nationwide radio broadcasting station). The RDS-TMC broadcast for Prague area started on 1. 7. 2005 as the first one in the nation and in the countries formerly known as post-communist ones.

A localising database of the Prague trunk traffic network was prepared to provide a basis for the broadcast. It was updated and made more precise at the end of 2008. Dynamic information on traffic is attached to particular segments of the trunk network by means of the database.

Information on the current traffic drawn from *DIC Praha* is used in municipal web pages to create traffic density load maps, tables showing traffic in degrees, provide shots from selected traffic TV cameras and information on traffic restrictions (closures).

Stage II of the *DIC Praha* Development Study was concluded in 2008. It deals with options of a follow-up development to improve the services of the centre. It elaborates on ways of providing information and related broadening of the resources that fill the *DIC* databases from the *HDŘÚ Praha* centre.

The *DIC Praha* Development Study was a portion of the last stage III of the project CONNECT that has helped finance many studies of projects related to the *HDŘÚ* and *DIC Praha* development from the EU funds since 2005.

The HDŘÚ Praha control room

A DIC Praha operator site

4.6 TV monitoring systems *(TVD)*

Three TV monitoring system were in operation in Prague at the end of 2008. The Technical Administration of Roads of the City of Prague (*TSK hl. m. Prahy*) operates a *TVD* system supervising chiefly traffic. The *TVD-TSK* system centre is found at the Principal mobility management control (*HDŘÚ*) at the *Na bojišti* street, the main users being the *HDŘÚ* operators.

The *TVD TSK hl. m. Prahy* system had 225 cameras at the end of 2008. Almost half of the number are installed in Prague road tunnels, 86 of them being used there for video detection. More *TSK* cameras are distributed rather unequally across the city territory, mostly having been implemented simultaneously with the construction or redevelopment of roads or TSD facilities.

Another TV system in the city is the Prague Public Transit (*DP hl. m. Prahy*) system that totals over 600 cameras, especially inside the Metro facilities and vestibules. These cameras cannot be used, apart from exceptions, to monitor the traffic on roads.

The most important TV supervision system in Prague is the Municipal TV Circuit System (*Městský kamerový systém – MKS*) with its 491 cameras monitoring overall condition in the city. Most cameras of the system are rotary, with high definition. The *MKS* system integrates 80 *TSK hl. m. Prahy* cameras and 64 *DP Praha, a. s.,* cameras.

The *MKS* project, jointly funded by EU in the framework of the JPD 2 project, aims primarily at increasing safety, enhancing smooth traffic flow, decrease negative environmental impacts by the road traffic as well as the possibility to improve co-ordination among components of the Integrated Rescue System.

4.7 Variable information signs (VIS)

Variable information signs (VIS) have been installed in Prague in order to display current information concerning traffic on connected roads and both short-term and long-term closures, especially related to the Inner Ring tunnels.

Locations of variable information signs (as of 31. 12. 2008) – **2008 changes in red**

Ke Štvanici (towards *Těšnovský tunel*)	*Patočkova* (next to *Pod Drinopolem*, towards *Strahovský tunel*)
Hlávkův most (towards *Muzeum*)	*Jižní spojka* (beyond ARAL petrol st., towards *Barrandov. most*)
Wilsonova (towards *Hlávkův most*)	*Strakonická* (*Pod Barrandovem*, towards *Barrandovský most*)
Na Františku (towards *Těšnovský tunel*)	*Strakonická* (in front of *Zlíchovský tunel*, towards *Mrázovka*)
Rohanské nábřeží (towards *Těšnovský tunel*)	*Dobříšská* (towards the *Mrázovka* tunnel)
Vítězná (towards *Újezd*)	*Dobříšská* (towards the *Zlíchovský* tunnel)
Modřanská (next to *Údolní*, towards *Podolské nábřeží*)	*K Barrandovu* (towards the inner city)
Dienzenhoferovy sady (towards *Kartouzská*)	*Jinonická* (towards *Plzeňská*)
Hořejší nábřeží (next to *Na bělidle*, towards *Jiráskův most*)	*Radlická* (next to *Nad Laurovou*, towards the inner city)
Plzeňská (towards *Strahovský tunel*)	*Karmelitská* (towards *Újezd*)
Patočkova (next to *Střešovická*, towards *Strahovský tunel*)	*5. května* (atypical, footbridge one-line VIS next to Inner Ring)

A Dobříšská VIS message while the Mrázovka tunnel is maintained

A VIS at Hořejší nábřeží

Preparations were made under the Operational Programme "Transport" in 2008 to renovate VIS implementations that are technically outdated, cannot display new graphic symbols and are complicated to maintain. 18 older VIS's are planned for renovation, 4 VIS's to dismantle and about 40 new VIS's are to appear in the streets in the years to come.

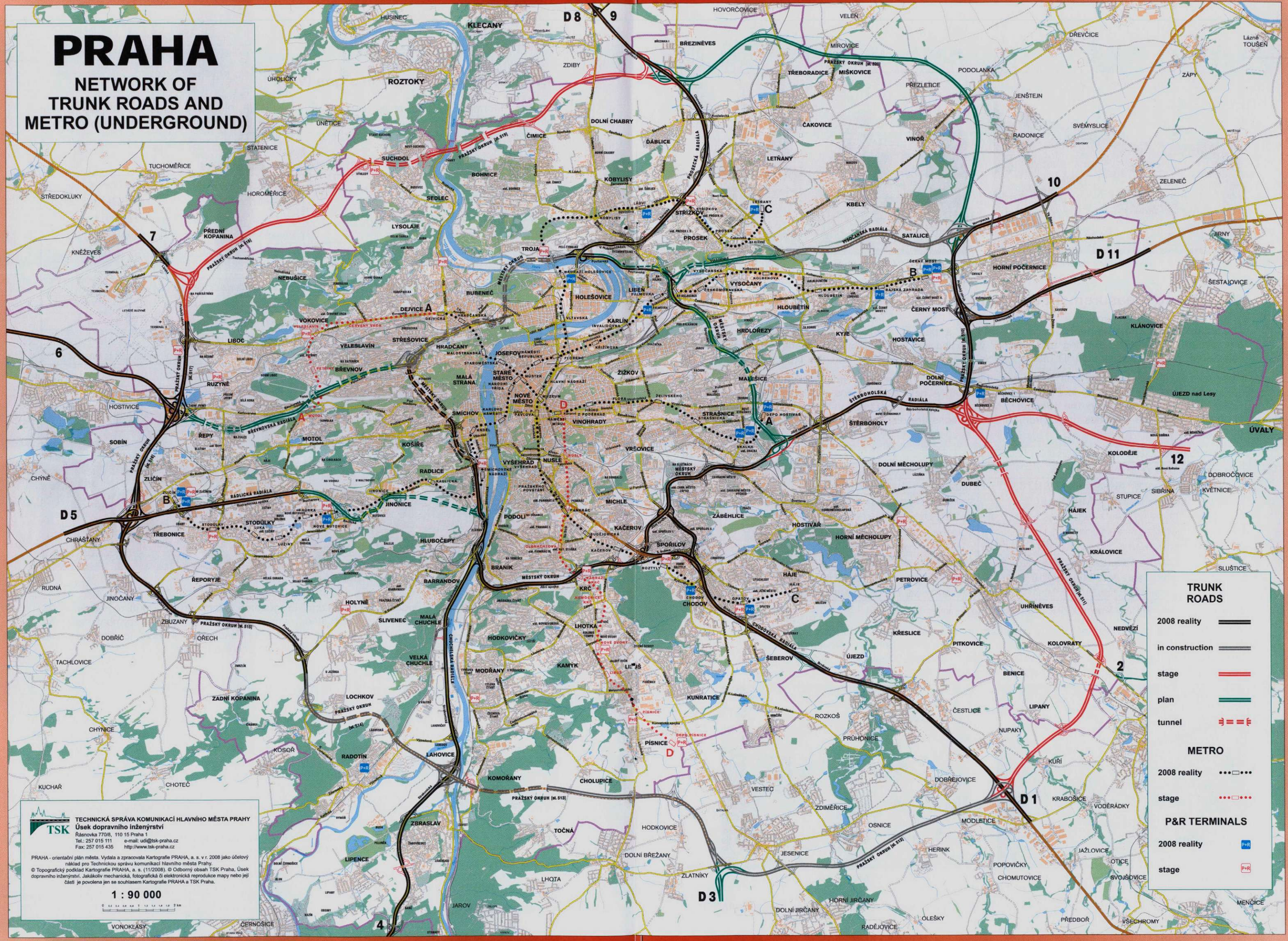
4.8 Travel time information

First facilities offering drivers information on current times of their travel from point to point were being built and put in operation toward the close of 2008. First three segments with travel time measurements are: the *Evropská* street (from *Nová Šárka* down to the *Vítězné náměstí* roundabout) *Jižní spojka – K Barrandovu* (from the cable-stayed bridge up to the bottom of the *K Barrandovu* street) and *K Barrandovu – Jižní spojka* (from the *K Barrandovu – K Holyni* junction down to the *5. května* street).

Travel time measurements employ the same TV technology as section speed measuring of vehicles and traffic light violation recording. Registration number detection serves no restriction in this case, it rather assists drivers. Travel times are calculated automatically from the detected registration numbers with no human intervention and the pictures of the plates are immediately deleted from the system.

PRAHA

NETWORK OF TRUNK ROADS AND METRO (UNDERGROUND)



TRUNK ROADS

- 2008 reality
- in construction
- stage
- plan
- tunnel

METRO

- 2008 reality
- stage

P&R TERMINALS

- 2008 reality
- stage

TSK

TECHNICKÁ SPRÁVA KOMUNIKACÍ HLAVNÍHO MĚSTA PRAHY
Úsek dopravního inženýrství
Řásnovka 770/8, 110 15 Praha 1
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PRAHA - orientační plán města. Vydala a zpracovala Kartografie PRAHA, a. s. v r. 2008 jako účelový náklad pro Technickou správu komunikací hlavního města Prahy.

1 : 90 000

0 0,2 0,4 0,6 0,8 1 1,2 1,4 1,6 1,8 2 km

VIS shape informing on travel times at the K Barrandovu street and at the cable-stayed bridge

4.9 Speed measurement and traffic light violation recording

A **section speed measurement** device consists of a pair of portals with cameras that take one picture of a vehicle entering and another when leaving the section. The average speed is calculated from the registration ID of the vehicle, the distance covered and the time data.

Observance of speed limits was monitored this way on 18 sections (four bidirectional ones are counted as two sections) in Prague later in 2008. A new section was implemented on the *Poděbradská* street close to the *Hloubětín* Metro station (in the direction from the inner city) during the year. The statistics drawn from all the sections are displayed on municipal web pages of Prague.

Section speed measurement in Prague (as of 31. 12. 2008)

Bělohorská – from inner city (from 60.9 % to 3.0 %)	*Poděbradská* – from inner city (since 2008) (from 6.0 % to 5.0 %)
Dobříšská – towards *Barrandovský most* (from 45.4 % to 4.0 %)	*Podolské nábřeží* – towards inner city (from 43.4 % to 7.0 %)
Dobříšská – towards *tunel Mrázovka* (from 29.8 % to 5.0 %)	*Strahovský tunel* – towards *Mrázovka* (from 29.1 % to 6.0 %)
Evropská – towards inner city (from 49.2 % to 5.0 %)	*Strahovský tunel* – towards *Patočkova* (from 13.9 % to 4.0 %)
Jižní spojka 1 – at *Vrbova*, towards *Krč* (from 26.3 % to 0.8 %)	*Strakonická* – towards inner city (from 18.6 % to 0.6 %)
Jižní spojka 2 – from *5. května* to *Chodovská* (from 45.4 % to 3.0 %)	*tunel Mrázovka* – towards *Barrandovský most* (from 29.8 % to 3.0 %)
Jižní spojka 3 – *Průmyslová* to cable bridge (from 13.5 % to 5.0 %)	*tunel Mrázovka* – towards *Strahovský tunel* (from 30.7 % to 6.0 %)
Jižní spojka 4 – sections 1 and 2 (since 2007) (from 40.0 % to 27.0 %)	*Ústecká* – from inner city (from 31.8 % to 2.0 %)
Poděbradská – towards inner city (from 55.0 % to 3.0 %)	*5. května* – towards inner city (from 48.7 % to 3.0 %)

Violation percentage trend from November 2006 (most sections) to December 2008 is in red.

The table presents the list of all the locations in Prague where section speed is measured. Parenthesised percentage decrease in speed violation counts between November 2006 (most locations) and December 2008 follow the sections. The data show a considerable drop from dozens per cent to single digits, sometimes even below the decimal point.

Section speed measurement on the Poděbradská st.

Stationary speed measurement, Evropská st. close to Nová Šárka

Additionally, Prague has 14 stationary speed measuring devices able to detect **momentary speed** of vehicles.

Vehicle speed is measured also in a non-restrictive way in Prague. Drivers are only alerted of their speed with radar signs. The signs (maintained by *TSK*) were installed on 20 locations later in 2008.

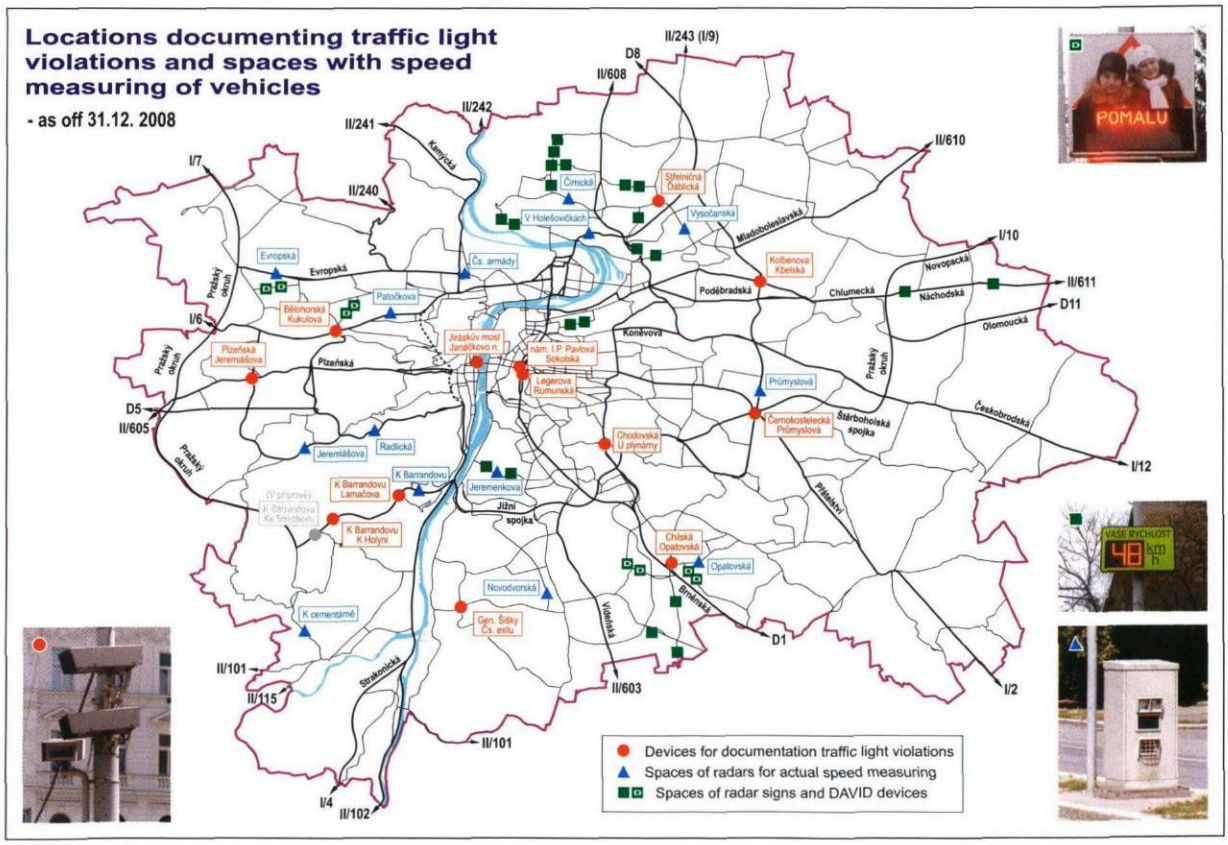
Another "friendly speed measurement" performed with "DAVID" type devices were implemented on four streets in Prague both ways as of 31. 12. 2008. A device of this type does not show a momentary speed of the vehicle, it only signals to the driver with a variable sign "Thank you" or "Slow down".

A radar sign on the Pernerova street

A "DAVID" type device on the Ke Kateřinkám street

Traffic light violation detection and documentation devices linked to offence recording software are put on 13 crossroads throughout the city. Modernisation of the traffic light violation detecting system started in the TSD at the *I. P. Pavlova – Sokolská* crossroads in 2008. New technology makes possible to count vehicles, is capable to help evaluate travel times for vehicles between crossroads and of other functionalities.

As with the section speed measurements, the location whereabouts and violation counts detected on traffic lights are displayed on municipal web pages of Prague.



5

REARRANGING TRAFFIC

Efficient arrangements in transportation aiming at increasing safety and smooth traffic flow, mobility management, solving problems with parking and providing better conditions for PT, pedestrians and bikers is one of the tools to achieve optimum utilisation of traffic infrastructure while volumes and intensities of car traffic steadily rise.

Attention was paid, in 2008, to Prague inner city's zones of paid standing (ZPS) in order to expand them and fine-tune their operation. New neighbourhoods were added to ZPS already established inside *Praha 1* and *Praha 2* city districts in 2008. The introduced ZPS cover a portion of *Praha 3* city district and the whole of *Praha 7*. The fine-tuning of ZPS has been made on evaluation of results of traffic surveys and comments by ZPS users. More data on ZPS expansion and operation please find under 7.1 herein.

Lane access restrictions for heavy vehicles were implemented on several roads in 2008. The traffic regime is marked out by road signs No. IP 21 "Lane access restriction". In two-lane roads in one direction, the left lane is marked out as no access to any heavy vehicle while the right lane is unrestricted. In three-lane roads, the left lane has no access to any heavy vehicle, the middle lane restricts vehicles over 6.0 tons and the right lane shows no restriction.

A rearrangement of traffic that significantly affected especially the north of the city occurred when a new segment of Metro IV C line from *Ládví* to *Letňany* was put in operation. Simultaneously, related PT bus lines were noticeably rerouted.

Makeshift rearrangements continued during 2008 as traffic infrastructure was being built in Prague. Restrictions in traffic related to the construction of the City Ring Road and split-level junctions *Malovanka, Prašný most* and *Špejchar* affected significantly the smooth flow of traffic on the roads of the *Praha 6* district as well as the whole of city north-west.

A critical closure on one of the most heavily utilised road, *Jižní spojka,* the Southern Connection, was the partial closure of the cable-stayed bridge to renew insulation, repair of the reinforced concrete cornice, measure of a possible motion of the steel concrete structure of the bridge. The diversion route for heavy vehicles went through the *Švehlova* and *Průmyslová* streets.

Complications in traffic were also brought about by a complete closure of the *Vyšehradský* tunnel and the adjacent embankment so as to renovate the carriageway, utilities, tramway line and broaden the cycle track.

Other traffic measures notably affecting mobility on the roads of Prague include a complete closure of the *Pražská* street while the *Švehlova – Pražská* crossroads is being reconstructed, a complete closure of the *Radlická* street in the direction from the inner city (a diversion route along the *Plzeňská* street) in order to redevelop the tramway line, the gas mains and the sewer, traffic restrictions in the *Seifertova, Táboritská, Olšanská* streets and on the *Olšanské náměstí* square to replace the rails as well as closures of sections of the *Veselská* street during the construction of the *Letňany* split-level junction.

Local traffic restrictions of some importance include partial restriction due to broadening the road and TSD adjustments on the *Karlovarská* road in the *Slánská – Drnovská* section related to putting the *Řepy* split-level junction to full operation and launching the *Praha – Pavlov* segment of the R 6 freeway.

Restrained traffic on the Radlická street related to the tram line construction

Temporary diversion road at Letná line construction

ROAD TRAFFIC SAFETY

6.1 Traffic accidents

As many as 30 251 accidents (10 % less than in 2007) happened in Prague in 2008, 38 victims died (+15 %) and 2 275 victims were injured (±0 %). Pedestrians were involved in 677 accidents (+3 %) with 20 fatalities (+18 %) and 599 injured (-2 %). Pedestrians themselves were culpable in 326 accidents (+5 %) with 9 fatalities (-31 %) and 263 injured (-3 %). The dominant share in accidents was with the drivers (29 530 out of 30 251 accidents, i.e. 98 %).

The main causes of the drivers' accidents were reckless driving and failure to give way. The number of accidents with culprits intoxicated was 661 (-9 %).

Accidents, impact on health and main causes

	2006	2007	2008	diff. 08/07 (%)
Accidents	34 689	33 484	**30 251**	-10
Fatal injuries	56	33	**38**	+15
Serious injuries	357	352	**334**	-5
Slight injuries	2 047	1 923	**1 941**	+1
Accidents with injuries	2 022	1 943	**1 909**	-2
Accidents without injuries	33 667	31 541	**28 342**	-10
Driver culpable due to	33 759	32 650	**29 530**	-10
specifically reckless driving	20 961	20 677	**18 896**	-9
failure to give way	10 034	9 819	**8 725**	-11
speeding	2 511	1 968	**1 767**	-10
wrong overtaking	253	186	**142**	-24
Caused by road defects	167	115	**77**	-33
Caused by cyklists	65	64	**45**	-30
Caused by pedestrians	328	311	**326**	+ 5

General trend in 2008 accidents: a slight drop in the accident count comparing to the previous year, an increase in death casualty count, a mild drop in serious and increase slight injury count.

Consideration of the long-term trends in traffic accidents leads to the conclusion that the 1960s to 1980s enjoyed a long-lasting, relatively favourable tendency in accident rate since the accident count kept in proportion to the VKT development and grew slower than the VKT parameter.

A crash of two vehicles and a tram at the Olšanské square

A crash in the Bolzanova – Opletalova crossroads

The overall trend in the development turned unfavourable in 1990s when accidents started to increase more that the VKT, making also the accident risk rate grow as expressed in the relative accident rate (accidents per one million VKT travelled).

Since 2001, the number of reported accidents has been going down in spite of ever growing volumes of car traffic, making the relative accident rate go down along with it (by 36 % in 2008 comparing to 2000).

The decrease in registered traffic accidents since 2001 was also affected by the regulation of the Road Traffic Act No. 361/2000 Coll. that reduces the obligation to report to the police, since January, 2001, only the accidents with either injuries or the obvious material damage in excess of CZK 20 000, while up to the end of 2000, obligatory was to report to the police the accidents with injuries or the obvious material damage over CZK 1 000. The Road Traffic Act No. 361/2000 Coll. amendment, in effect since July, 2006, has further limited the obligation to report to the police the accidents with injuries or the obvious material damage over CZK 50 000.

The all-Prague average was 4.7 reported accidents in 1 million of vehicle-kilometres covered in 2008.

A favourable trend in traffic safety is an ongoing significant decrease in fatal, severe as well as slight injuries in accidents in the last 8 years in spite of the urban car traffic continually growing. The total number of injuries in accidents decreased to 2 313 injuries in 2008 from the earlier 3 861 injuries in 2000, i.e. by 40 %, while the car traffic grew by 26 % in the same period in Prague.

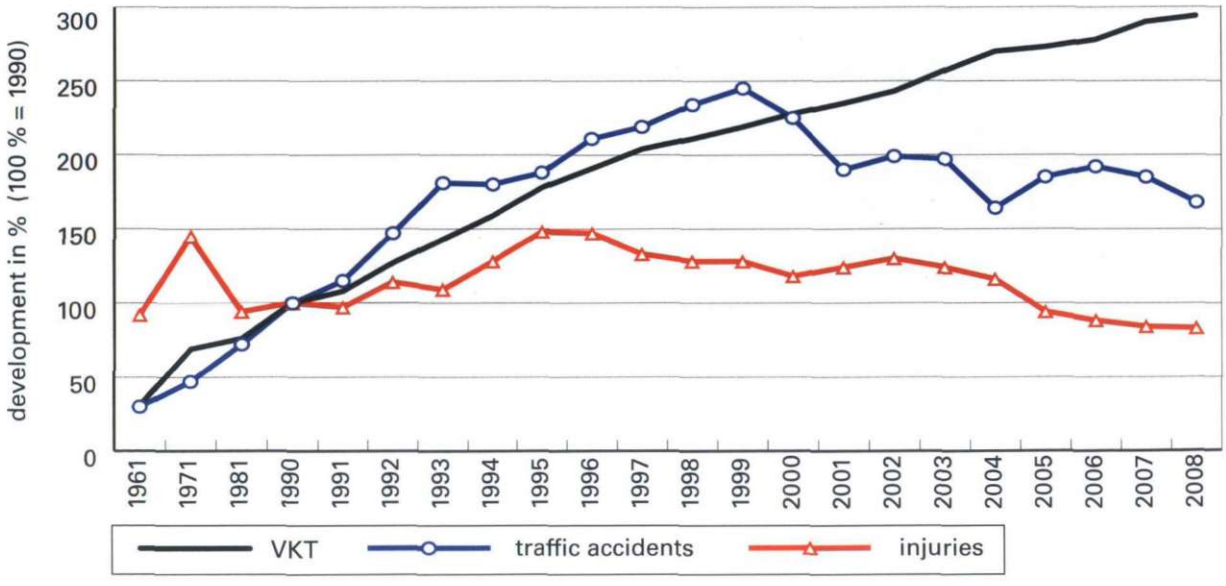
Even more favourably compares the long-term development in injury count to the car traffic intensities. Comparing to 1990, the urban car traffic has increased almost three times (by 188 %) in the last 18 years, while the injury count in traffic accidents has decreased by 29 % (from 3 269 injuries in 1990 to 2 313 injuries in 2008), covering all types of injuries – fatal, serious and slight ones.

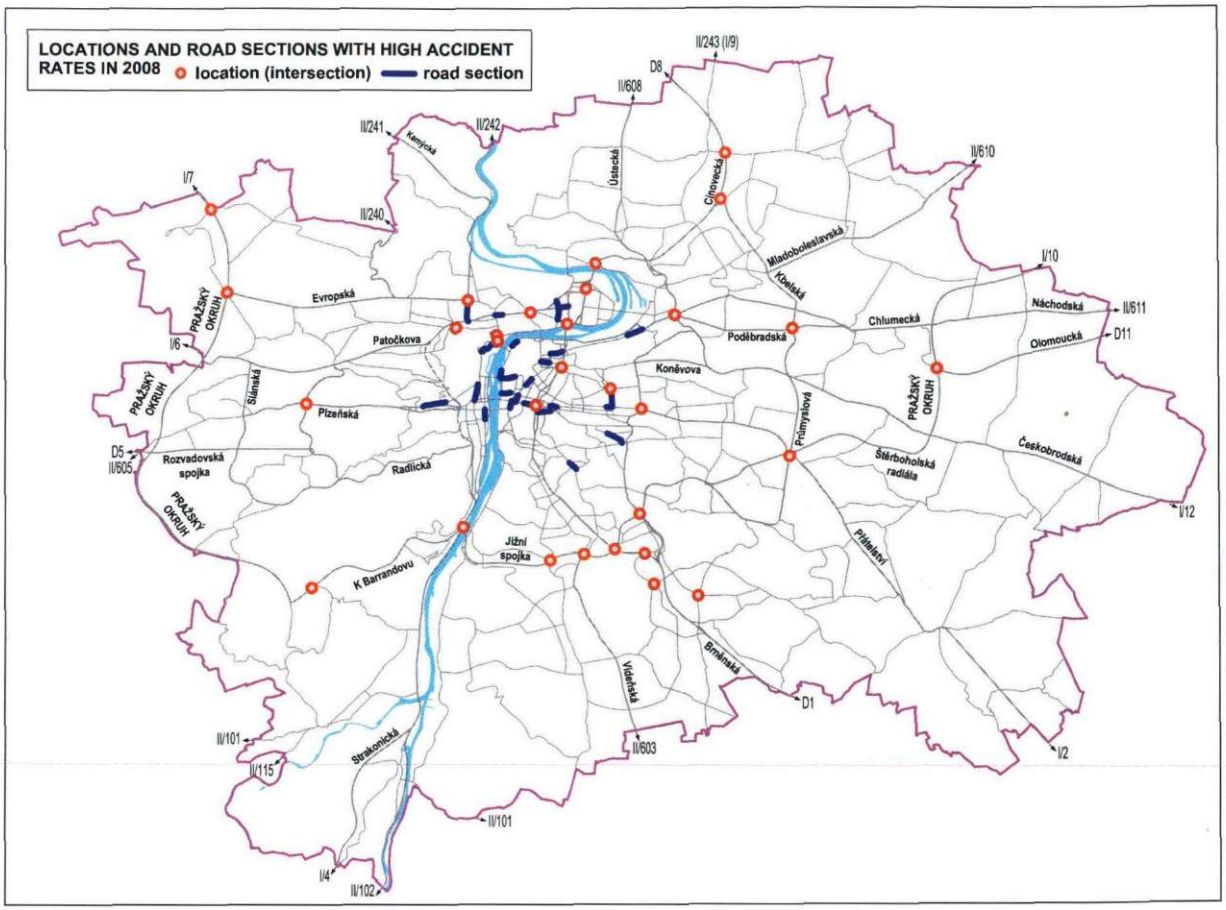
Traffic accidents, injuries and relative accidents rate, 1961 – 2008

Year	Total accidents		Fatal injuries		Severe injuries		Slight injuries		Relative accident rate	% VKT
	count	%	count	%	count	%	count	%		
1961	5 495	30	63	69	580	157	2 361	84	7.3	31
1971	8 496	47	123	135	567	154	4 046	144	5.1	69
1981	13 064	72	81	89	401	109	2 572	92	7.1	76
1990	18 024	100	94	100	369	100	2 806	100	7.5	100
1995	33 898	188	123	131	679	184	4 044	144	7.9	178
2000	40 560	225	80	85	521	141	3 260	116	7.4	228
2005	33 349	185	61	65	393	107	2 603	93	5.1	273
2006	34 689	192	56	60	357	97	2 047	73	5.2	278
2007	33 484	186	33	35	352	95	1 923	69	4.8	287
2008	**30 251**	**168**	**38**	**40**	**334**	**91**	**1 941**	**69**	**4.7**	**288**

100 % = 1990
Relative accident rate = accident count per one million VKT (averages, all roads)
VKT = vehicle kilometres travelled, all roads

Accidents, injuries and VKT in Prague, 1961 – 2008
All roads, annual summaries





Traffic accidents with pedestrian involvement, 2005 – 2008

	2005	2006	2007	2008	diff. 08/07 (%)
Pedestrian involved accidents	742	649	656	**677**	+3
death casualties	35	25	17	**20**	+18
light and serious injuries	711	629	613	**599**	-2
Specifically accidents caused by pedestrians	352	328	311	**326**	+5
death casualties	17	12	13	**9**	-31
light and serious injuries	330	300	272	**263**	-3

Traffic accidents with biker involvement, 2005 – 2008

	2005	2006	2007	2008	diff. 08/07 (%)
Biker involved accidents	147	121	124	**102**	-18
death casualties	3	0	0	**0**	±0
serious injuries	12	13	17	**15**	- 2
light injuries	100	69	70	**59**	-16
Specifically accidents caused by bikers	74	65	64	**45**	-30
death casualties	2	0	0	**0**	±0
serious injuries	6	8	6	**5**	-17
light injuries	47	33	36	**22**	-39

6.2 Traffic education

Many programmes were offered in traffic education of children in 2008, e.g. the systematic training on children's playgrounds programme (*"DDH"*), the starting biker programme (Youth Biker Traffic Contest), traffic-educational broadcasts for children and youth, interactive children's theatrical performances on traffic-educational topics and other events.

There were 8 permanent children's traffic playgrounds in service in the Capital of Prague in 2008. Training went on there in line with the thematic plan of traffic education focused primarily on 4th graders of the elementary school as they start biking in this age. Pupils of other grades of elementary schools or children from kindergartens may also take part at the *DDH* training provided there are vacancies. As many as 23 556 elementary school pupils took an organised training at Prague traffic playgrounds in 2008. Approximately 13 000 children took part in afternoon programmes.

The starting biker programme – Youth Biker Traffic Contest is announced by the Ministry of Transportation of the Czech Republic jointly with the Ministry of Education, Youth and Sports. It consists of four contests: Vehicles Regulation tests, driving practice through the city keeping the Regulations (traffic playgrounds are used for the contest in Prague), driving skills (driving among various obstacles) and First Aid knowledge. Basic rounds of the contest were participated by 3 672 pupils from 42 schools in 2008.

First aid

Another form of traffic accident prevention is a series of traffic-educational performances intended for children from kindergartens, elementary and secondary schools. 32 performances were given jointly with the International Student Theatre Europe and 30 interactive children's theatrical performances "A Fairytale Semaphore" and "Aunt Berta's Bike" was performed on the premises of the Police Museum.

A number of traffic safety efforts was held also for the grown-up road traffic participants in 2008 (spring and autumn driving skills contests, handicapped and hearing-impaired motorists' efforts, lectures etc.).

6.3 Measures to enhance road safety

CZK 11.3 mil. was spent for running expenditures to implement Prague road safety-enhancing measures from the *BESIP* budget in 2008. Running expenditures are primarily intended for adding assembled speed humps, implementing and adjusting guardrails and railings, setting road mirrors, carriageway surface chipping and other traffic safety measures, especially close to schools. CZK 28.9 mil. was spent for capital expenditures earmarked for the purpose of built-in speed humps, building conversion of crossroads to roundabouts and other structural safety measures, especially close to schools and adding lights at crosswalks. Long, built-in speed humps were completed at 8 locations in 2008.

A Libocká street speed hump

A Tomanova street speed hump

Short, assembled (not built-in) speed humps were implemented at 33 locations in keeping with demands of the local road authorities.

Concrete guardrails were put at 28 localities, railings and anti-parking bollards at 15 localities. Road mirrors were installed at 9 localities, road surface chipping was made at 5 localities.

Refuge islands with structural barrier-free and tactile features to increase crossroad pedestrian safety were built at the *Na Zlíchově – Křižová* and *Polabská – Cukrovarská* crossroads.

Kerb extensions to shorten pedestrian crosswalks was implemented on the *Slezská* street at the crossroads with the *Kladská* and *Chodská* streets.

A crosswalk at Na Zlíchově – Křižová redressed

A crosswalk at Slezská – Kladská narrowed

An important feature to enhance pedestrian safety on crosswalks is added lighting. It was installed at 23 locations.

Jointly with the Prague Public Transit Co. Inc. (*Dopravní podnik hl. m. Prahy, a. s.*), raised carriageways (speed tables) were built throughout the *Seifertova* street along the redressed tram island platforms of the *Husinecká* stops.

The Prague Public Transit Co. Inc. has redeveloped tram platforms at the stop *Vozovna Střešovice* on the *Patočkova* street and at the stop *Bořislavka* on the *Evropská* street (to complete in 2009) in order to increase safety of the PT passenger public. The platforms have been expanded, equipped with shelters, protective railings and adjustments to fit the needs of persons with limited mobility and orientation.

The Vozovna Střešovice stop

The Bořislavka stop

7

TRAFFIC AT A STANDSTILL

7.1 The inner city

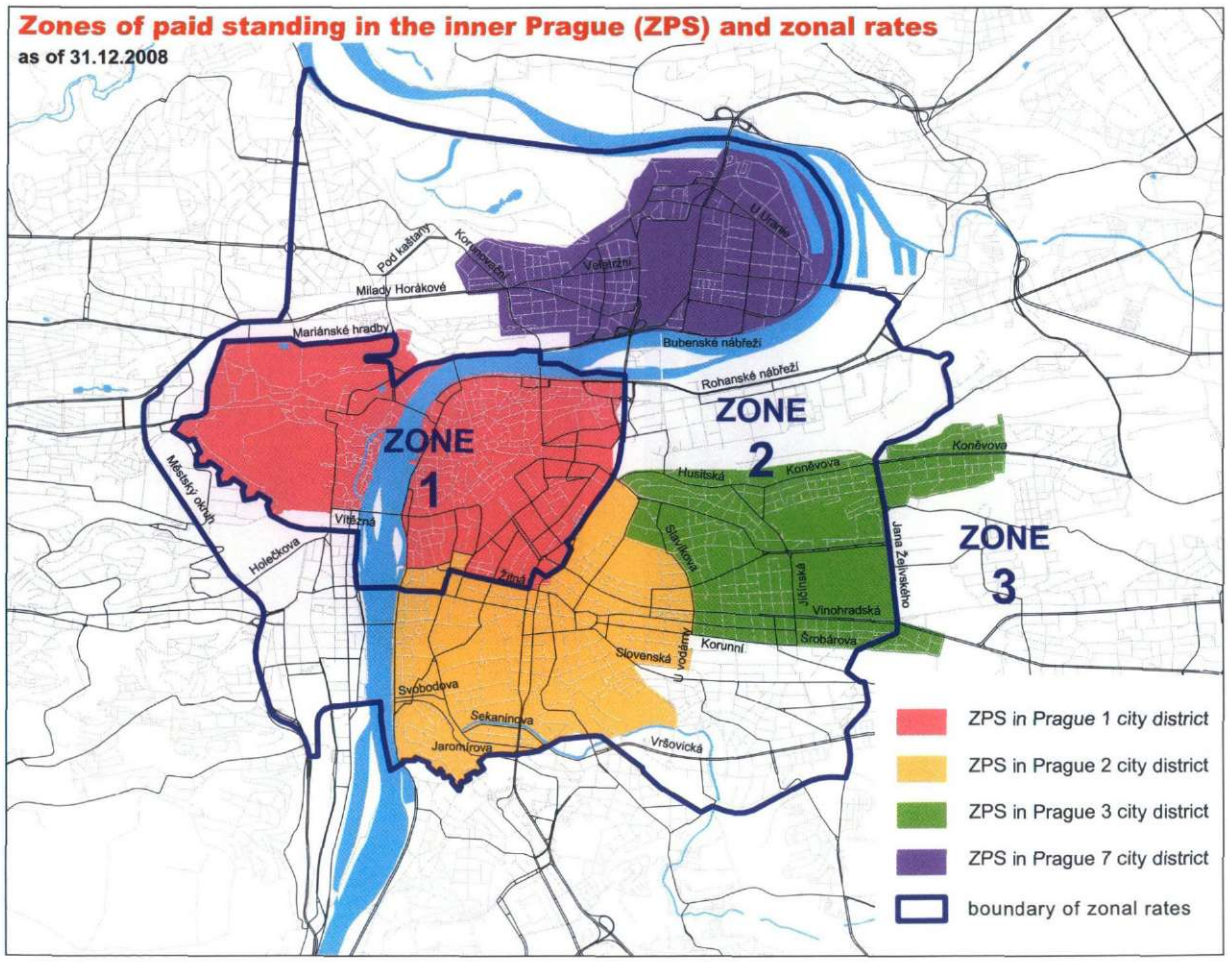
The inner city with its densely developed housing is largely covered by the Prague Conservation Area (PCA) that includes left river bank neighbourhoods of *Hradčany* and *Malá Strana*, and right river bank neighbourhoods of *Josefov*, *Staré Město*, *Nové Město* and *Vyšehrad*. The PCA, in fact, covers the whole of *Praha 1* city district, a large portion of *Praha 2*, and minor portions of *Praha 4, 5, 6* and *7*. The PCA extends on 8.7 km^2 which is 1.7 % of the total urban ground.

Complications with leaving cars to stand in the inner city of Prague are brought about by its rich and varied function, numbers of job opportunities and visitor attractiveness. Over 200 000 jobs and almost 300 000 students of high, college and university education only inside the PCA join its regular 50 000 permanent residents. Additionally, multitudes of visitors from the country and abroad gravitate to this area attracted by its great heritage.

Number of spaces for vehicles of residents and visiting motorists gets continuously adjusted for the PCA in order to make use of all the space suitable and available. Approximately 23 000 parking and stand-by lots are offered inside and around the PCA, structured as follows:

on the streets	16 200 spaces (70 %)
in the yards	2 900 spaces (13 %)
in public parking garages	3 900 spaces (17 %)

The number of spaces does not include spaces in private garages. The total spaces in private parking garages is not known. Many structures in the inner city assume new functions and see new garage spaces created inside related to the functional changes. That is why a slow and steady gradual growth in private garage spaces can be assumed in the inner city.



Zones of paid standing (ZPS) in the inner city were extended in 2007 and 2008, which was considered long time before. The first ZPS was established in April, 1996, and covering circa 3 km^2 on the right bank of the *Vltava* on the area of the *Praha 1* city district, it was augmented in October, 2007, with an additional ground of the *Praha 1* district covering circa 2.4 km^2 on the left bank of the river. A ZPS including the whole of the *Praha 2* district covering circa 4 km^2 was added in November, 2007. All the established ZPS together offered about 23 500 standing spaces available to vehicles on local roads later in 2007, including around 9 900 spaces inside the *Praha 1* district and around 13 600 spaces inside the *Praha 2* district.

More ZPS partially covering the *Praha 3* and the whole of the *Praha 7* city districts were established in 2008. The extent of all the ZPS throughout the area of the Capital of Prague as of the end of 2008 as well as the tariff zone boundaries are shown in the graphics on the previous page.

ZPS in the *Praha 3* city district

A ZPS was established in a portion of the *Praha 3* district adjacent to the historic core of the city on 18 February, 2008. Drivers of motor vehicles may use nearly 13 200 standing spaces, over 85 % of which are apportioned for residential and pre-paid standing. Approximately 14 500 park cards were issued in the first half of 2008, specifically 80 % residential cards and 20 % pre-paid ones.

The blue zone is purposed for standing of permanent residents and estate proprietors as well as business entities (companies, traders, etc.) residing or operating inside the ZPS with a pre-paid park card. The blue zone is in effect from 8:00 a.m. to 6:00 a.m. of the following day. From 6:00 a.m. to 8:00 a.m., the zone may be used for vehicles with no park card. Throughout the day, vehicles may stop for a time not exceeding 3 minutes.

The orange zone is made for short-term standing of visitor vehicles under 2 hours. It is in effect on workdays from 8:00 a.m. to 6:00 p.m. All vehicles have free access with no charge from 6:00 p.m. to 8:00 a.m. The time of operation and prices for standing are listed on the information plate on parking meters.

The green zone is for medium-time standing of visiting vehicles for a maximum of 6 hours. It operates on workdays from 8:00 a.m. to 6:00 p.m. It is available free of charge for all vehicles between 6:00 p.m. and 8:00 a.m. and throughout weekends. The time of operation and price for standing are listed on the information plate on parking meters.

A „Blue Zone" in Praha 3

ZPS in the *Praha 7* city district

The *Praha 7* have established ZPS over all the area in two steps. A blue zone for residential and pre-paid standing (7 621 spaces) was launched on 1 March, 2008. An orange zone for visitor vehicles standing short-time under 2 hours (430 spaces) and a green zone for visiting vehicles standing medium-time under 6 hours (986 spaces) were established after parking meters had been in place on 15 April, 2008.

Altogether 86 spaces have been allotted to vehicles of severely disabled persons at frequently visited facilities (offices, health, cultural and social centres). More 38 spaces measuring 10.0 m by 2.5 m were marked out for goods delivery vehicles to stop no longer than 15 minutes.

Parking meters in the *Praha 7* district are in operation from Monday to Friday during daytime from 8:00 a.m. to 6:00 p.m. Free of charge it may be parked on visitor spaces at night from 6.00 p.m. to 8:00 a.m., during weekends and bank holidays.

A Praha 7 blue zone

Disability standing space at the Praha 7 municipality

Delivery standing in the Praha 7 district

Monitoring, evaluating and adjusting ZPS operation

ZPS operation is continuously monitored by administrators of each zone, by transportation divisions and metropolitan police. According to the evaluation made in mid September 2008, the greatest observance of traffic regulations in ZPS was inside the *Praha 7* district. The overall observance in the area was 83.2 %, while the highest observance of 86.1 % was inside the blue zone.

Adjustments in ZPS have been made drawing on evaluations of results of traffic surveys and operation experience. The most important include:

- Introduction of "overlap zones", i.e. a blue zone stretching along borders of neighbouring city districts where residential/pre-paid vehicles with valid park cards issued in any neighbouring city district may stand on local streets intended for residential/pre-paid vehicle standing.
- An improved usage of sparsely occupied parking spaces by means of change of the users of the spaces, specifically by changing a blue zone intended for residential and pre-paid standing into a green or orange zone intended for visitor standing, or on the other hand, by replacing a green or orange zone with visitor parking for a blue zone with residential and pre-paid standing.
- An increased accessibility of a blue parking zone for vehicles of delivery and services, of persons caring for disabled or seniors inside the ZPS, for physicians, servicemen and other visitors. Drivers of such vehicles may now use additional rights apart from their right to stop for under 3 min. in order to deliver or load or get passengers in or out in a blue zone.

  Additional conditions in a blue zone are available:

  - stop and stand in a blue zone during the daytime from 6:00 a.m. to 8:00 a.m. with no fee or fine,
  - stand in a blue zone for 2 hours using a two-hour scratch card for CZK 120,
  - stand in a blue zone for 10 hours during daytime from 8:00 a.m. to 6.00 p.m. using a ten-hour parking scratch card for CZK 400.

  The two-hour and ten-hour parking scratch cards are good for all the tariff zones.

An "overlap zone" in the Praha 1–2 ZPS

An "overlap zone" boundary in the Praha 1 ZPS

Transport divisions of particular district councils can also decide on substantiated exceptions for standing of vehicles in the blue zone of persons not resident nor pre-paying. The exceptions can solve problems of elderly or sick persons living in the area unable to care of themselves without aid. Decision on exception may be issued for a particular street or cluster of streets applying for maximum of 3 vehicles of persons close and near to the person in need of care. A handling fee of CZK 100 is paid for an issue of a park card.

7.2 The rest of the city territory

The urban territory outside of the inner city has got so far no arranged vehicle standing on local roads. Most of the urban population park and lay their vehicles by on local roads which lack, however, an adequate capacity of spaces, especially inside post-war housing estates.

City residents and visitors can use multi-level, single-level or individual garages to leave their vehicles. Neither their exact number nor the number of spaces in the garages are known overall the urban area. It is estimated that the capacity of spaces in the garages totals approximately 170 000 spaces, it grows, however, annually as new administrative, commercial and residential structures are built.

Additionally, about 365 locations of extra-road parking lots are registered on the city territory providing an approximate capacity of 39 700 spaces for vehicle standing, including nearly 43 % supervised ones.

7.3 Park and Ride (P+R)

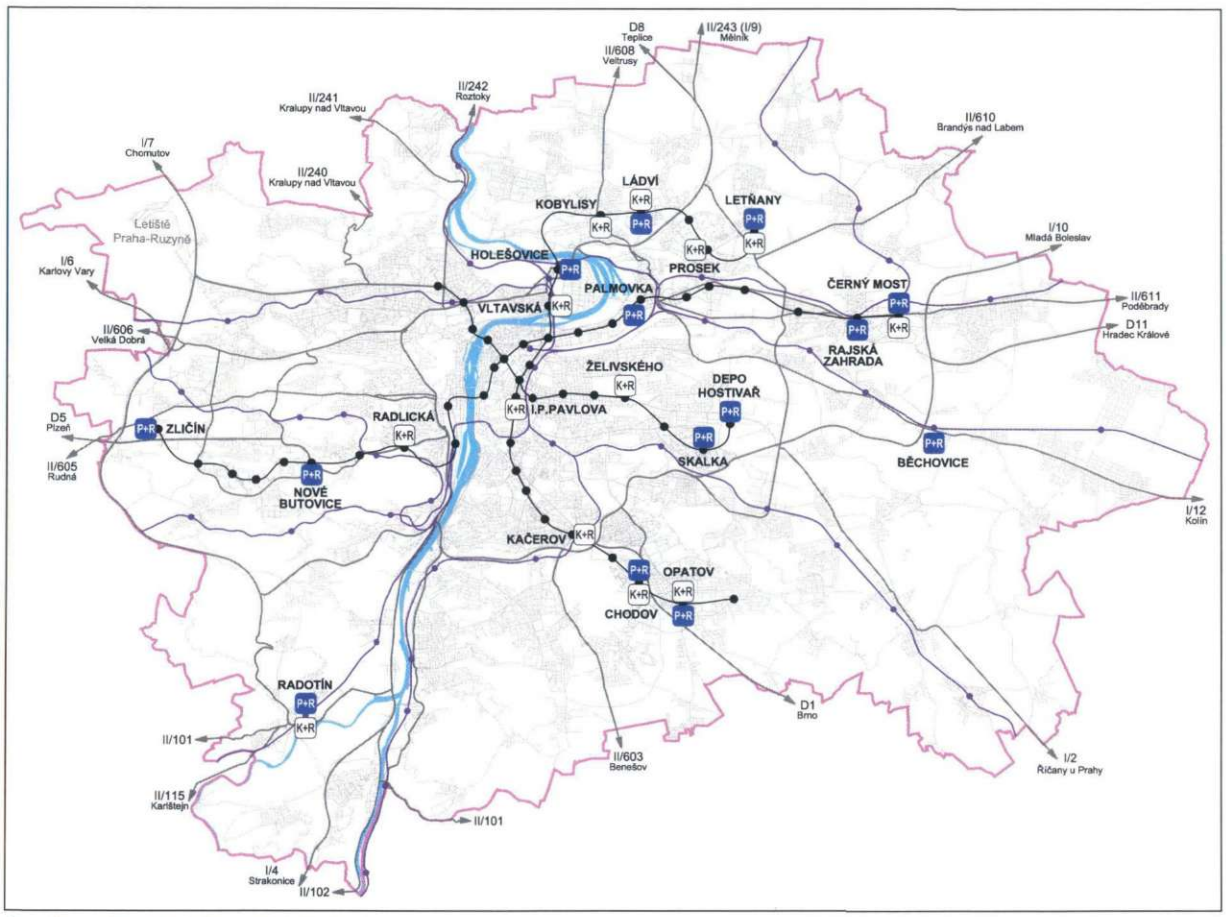
A two-level Park-and-Ride facility was opened in May, 2008, related to the Metro underground C line being extended to the *Letňany* neighbourhood. It offers a capacity of 633 spaces for the basic function of the P+R system.

As much as 2 893 parking spaces of the basic category are available on all the 17 P+R facilities for the fundamental functioning of the system in the end of 2008. The count excludes spaces allotted to the handicapped, residents and special purposes.

Parking spaces for the fundamental function of the P+R system (as of 31. 12. 2008)

Běchovice	Černý Most 1	Černý Most 2	Depo Hostivař	Holešovice	Chodov
86	285	131	169	75	655
Ládví	Letňany	Nové Butovice	Opatov	Palmovka	Radotín
81	633	57	181	168	19
Rajská zahrada	Skalka 1	Skalka 2	Zličín 1	Zličín 2	Total
90	43	74	85	61	**2 893**

The Technical Administration of Roads of the City of Prague earmarked approximately CZK 18.4 mil. in 2008 for operation P+R system and for preparation additional P+R facilities to construct.



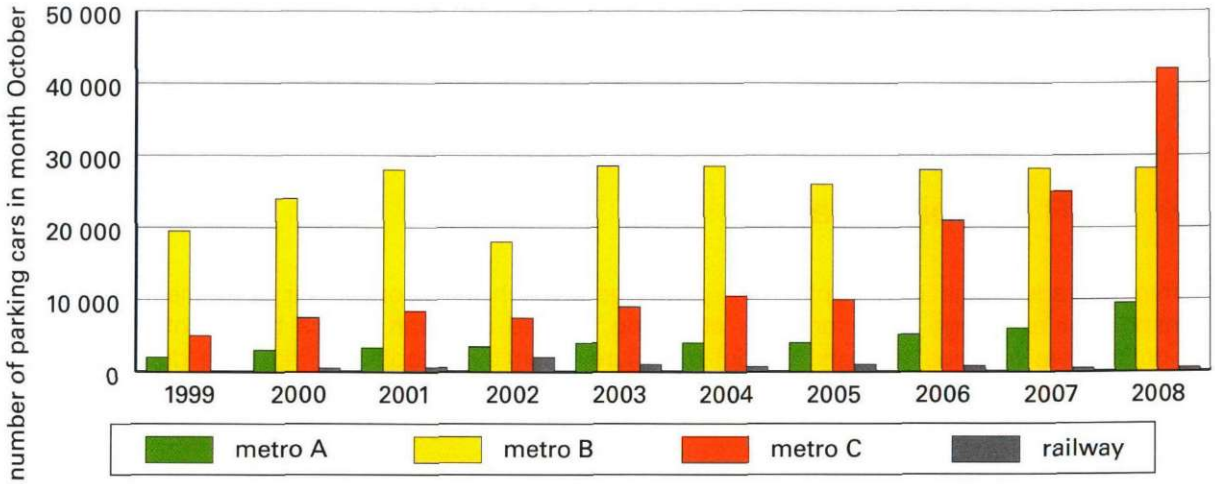
Locations of P+R facilities and K+R sites in 2008

The Letňany P+R

The Radotín P+R

P+R facilities are included under the Prague Integrated Transport system with their tariffs by means of pre-paid *PID* tickets and preferential daily PT tickets. The fares linked to P+R parking are CZK 10 for parking, CZK 40 for a transfer return ticket or CZK 80 for a one-day rover ticket.

Vehicles parking on P+R in Prague



Vehicles parking on P+R facilities in October (1999 – 2008)

Parking lot	1999	2000	2001	2002	2003	2004	2005	2006	2007*	2008*
Běchovice	-	-	-	1 498	180	140	597	307	173	**215**
Černý Most 1	7 785	9 649	10 716	3 481	9 818	9 714	9 226	10 610	11 727	**11 294**
Černý Most 2	-	-	-	-	2 042	2 934	2 555	3 631	3 281	**3 482**
Depo Hostivař	-	-	-	-	-	-	-	2 439	4 519	**5 936**
Holešovice	2 835	3 125	3 226	1 453	3 299	2 759	2 765	3 318	2 890	**3 500**
Chodov	-	-	-	-	-	-	-	9 856	12 857	**17 607**
Ládví	-	-	-	-	-	2 184	2 117	2 612	2 748	**2 593**
Letňany	-	-	-	-	-	-	-	-	-	**12 456**
Modřany	-	-	-	213	310	0**	192	-	-	**-**
Nové Butovice	2 313	2 608	2 572	1 689	2 136	1 988	1 866	2 165	2 264	**2 346**
Opatov	2 934	3 901	5 073	5 389	5 732	5 890	5 168	5 771	6 180	**6 143**
Palmovka	-	3 224	4 446	3 779	4 183	3 521	3 874	1 966	1 417	**1 416**
Radlická	1 274	1 391	1 272	948	1 169	1 003	-	-	-	**-**
Radotín	-	158	463	878	918	768	805	890	296	**286**
Rajská zahrada	1 976	2 345	2 837	409	2 697	2 626	2 701	2 919	2 595	**2 920**
Skalka 1	1 702	2 695	2 762	2 461	3 408	3 336	3 223	3 052	2 029	**1 917**
Skalka 2	-	-	-	-	-	-	-	332	318	**731**
Zličín 1	3 970	2 973	3 508	3 622	3 510	3 618	3 111	3 548	3 109	**3 175**
Zličín 2	2 006	2 085	2 111	3 432	2 505	2 609	2 240	2 508	2 735	**2 746**
Total	26 795	34 154	38 986	29 252	41 907	43 090	40 440	55 195	59 138	**78 763**

* data as counted by a parking attendant (otherwise as counted with an automatic gate)
** the parking lot was closed due to repair of the access road

Supplementary services at the P+R sites

Bike storage (Bike & Ride)

When a P+R facility is in operation, it offers to store bikes at the site for returnable deposit free of charge. Bikers, however, are not entitled to a preferential fare. If they leave their bikes at the P+R site through the time it is closed, they are bound to pay a fine of CZK 100.– per night for trespassing the site's service regulations.

Long-term vehicle standing

An option of a monthly lease of a parking space at P+R facilities was offered at sites with low utilisation, the *Běchovice* P+R and the *Radotín* P+R, later in 2008, while the same offer had continued at the *Skalka 1* P+R and the *Opatov* P+R where it reduced P+R capacity.

Night and weekend parking

The service has been provided, since 2005, at the *Rajská zahrada* P+R where, for a monthly fee, has been offered to lay a car by from 5:30 p.m. to 7:30 a.m. of a workday and, on weekends, for a whole day. Thirteen vehicle owners made use of the service as of the end of 2008.

7.4 K+R stopping places

A frequent advantage is an option for passengers to change from a car to a means of public transport, or exchange a PT for a car at a stop. Shared transport of this type is often employed by commuters for trips to work, school or leisure when the people sharing have different origins or destinations of their trips. This manner of passengers switching between cars and PT is known as a K+R (for Kiss and Ride) mode.

Designation is made by means of horizontal road marking with a text "K+R" accompanied with an upright sign "Parking place" with a note "5 minutes" and an additional panel with a text "K+R", or an upright "No waiting" sign, optionally with an additional panel with a text "K+R".

Places for K+R type stopping were available next to the following PT stops at the end of 2008 (parentheses specify the stopping location by showing the street name):

An IP11 sign "Parking place" with standing restricted to maximum of 5 minutes and the "K+R" panel added	
to the inner city	away from the inner city
Kobylisy (Nad Šutkou)	*Černý Most (Chlumecká)*
Ládví (Střelničná)	*Chodov (Roztylská)*
Letňany (Beladova)	*Letňany (Beladova)*
Prosek (Vysočanská)	*Radlická (Radlická)*
Prosek (Prosecká)	*Radotín (Vrážská)*

A B29 "No waiting" sign usually combined with a "K+R" text	
to the inner city	away from the inner city
I. P. Pavlova (Legerova)	*Kačerov (Michelská)*
Kačerov (Michelská)	
Opatov (Chilská)	
Radlická (Radlická)	
Vltavská (nábř. Kpt. Jaroše)	
Želivského (Vinohradská)	

Apart from the K+R system, a short-term parking place ("max. 15 min.") is marked out close to the *Nádraží Holešovice* railway station (the *Vrbenského* street, inner city bound) and a stopping place is marked out for passengers getting on or off close to the *Rajská zahrada* station (the *Ciglerova* street, the direction away from the inner city).

The Letňany K+R

The Prosek K+R

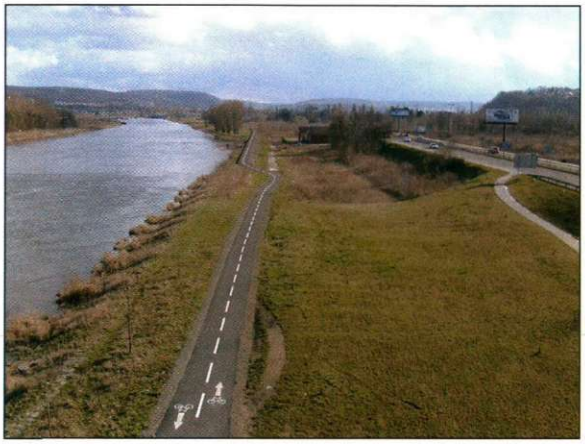
BICYCLE TRAFFIC

The following **new cycle tracks** were put in service in 2008:

The *Lahovice – Malá Chuchle* cycle track

A track shared by pedestrians and bikers, with a bitumen surface, 1.43 km long, includes a little bridge over the *Vrutice* brook, with repaired surfaces of adjacent stretches. Upright traffic signs were supplied. North of *Vrutice,* the cycle track is a new construction over an original level ground while at the *Malá Chuchle* North, an original river bank structure was partially employed.

This cycle track project was supported by the operation programme Prague Competitiveness. Its chief aims and purposes have been to increase the safety of non-motorised traffic, attractiveness of the area and creating conditions for safe cycling from the left river bank of Prague.



The Lahovice – Malá Chuchle cycle track

The Zličín – Sobín pedestrian/cycle path

Cycle tracks in the *Sobín* area

Cycle tracks across the *Praha-Zličín* district extending for 1.5 km were put in service in June, 2008. These are three separate sections: *Zličín* – Prague Ring Road, *Sobín* – border of Prague, and *Sobín* – Prague Ring Road.

Cycle track along the *Lannova* street

The track has been built with the renovation of the park between the *Ludvíka Svobody* embankment and the *Lannova* street. The 0.3 km long track improves the connection of the inner city and the *Karlín* and *Libeň* neighbourhoods.

More projects completed in 2008 that have made a difference in greater safety of bikers and better user comfort of cycle tracks and paths in Prague:

- A new cycleway at *Svépravice* (*Praha – Horní Počernice*) running along the chain of ponds on the *Svépravický* brook.
- Repair of path surfaces between *Troja* and *Podhoří*.
- Repair of path surfaces at *Sedlec*, a community damaged with spring floods in 2006.
- Repair of subway under the *Hlávkův most* on the A 2 cycle route consisting in new lighting installation, widening the subway for pedestrians and bikers, change of tubular railing, new wall painting, renovation of road marking and repair of surfaces.
- An adjustment of cycle track in front of the portals of the *Vyšehradský* tunnel.

Cycle lanes

A cycle lane on the *Vršovická* street was made in summer, 2008, as a pilot project of biker integration in the main space of traffic on the present road. The cycle lane has been put on the street next to vehicle lanes between the traffic lane and the streetside parallel parking. Drivers while driving into the line of parking vehicles as well as away from the line have to yield to a passing biker, making safe biking possible. They also have to take care while leaving their car so that the door getting open would not collide with a biker.

A segregated space for bikers has been marked out in front of the three lanes on the *Otakarova* street at the crossroads of *Bělehradská – Otakarova* so that a biker can get in front of waiting cars and enter the crossroads first.

A cycle lane on the Vršovická street

A biker space at the Bělehradská – Otakarova crossroads

More cycle lanes related to a previous project have been prepared and made in 2008. A new cycle lane was marked out on the *Vinohradská* street in a 700 m long section from the *Jičínská* street to the *Jana Želivského* street in the direction away from the inner city early in December. Simultaneously, preparation started for the opposite direction.

Cycle lanes have been launched as a portion of new traffic constructions on the *Rohanské* embankment, the *Tupolevova* and *Beladova* streets at *Letňany* (with the Metro line construction) as well as at the *Černý Most* neighbourhood (with the new grade separated crossing *Chlumecká* street).

Cycle lanes on the Rohanské embankment at the U Rustonky street

Cycle lanes on the Beladova street at Letňany

Two-way cycling in one-way streets

Traffic signs enabled oncoming cycling through the *Na vrstvách* one-way street. Also at the *Korunní* street, traffic signs have been supplied to allow two-way cycling in the section between the *U vodárny* and *Kladská* streets. About 20 street sections with oncoming passage enabled for bikers by traffic signs were registered in Prague towards the end of 2008.

Bike stands

Over 100 bike stands were implemented in some city districts in 2008. They are individual inverted U shape stands. They have been placed e.g. in Prague 6 (the *Jugoslávských partyzánů* street in front of the students' canteen, the *Na Ořechovce* street in front of the cinema), Prague 4 (at the *Libuš* neighbourhood in front of the elementary school buildings) as well as Prague 8 and 10.

A bike stand was installed with the Metro underground C line construction to *Letňany* as a supplementary Bike and Ride service (B+R) at the P+R parking facility next to the *Letňany* underground station. New bike stands have also been placed at all the three newly built stations (*Střížkov, Prosek* and *Letňany*).

A new bike stands at the Letňany P+R site

Inverted U shaped bike stands at the Střížkov Metro station

Bicycling traffic surveys in Prague in 2008

A survey on cycle traffic volumes was conducted again in April, May and June, 2008. The count was taken at 66 posts on workdays (Monday to Thursday) from 7 a.m. to 8 p.m., always in both directions (all days were counted at the *Podolské nábřeží* and *Trojská lávka* profiles). Posts selected were on cycle tracks, roads feeding the larger inner city and all the bridges over the *Vltava*. The survey was extended to cover additional non-motor mobility categories (walkers and skaters) at the posts on cycle tracks. This was a follow-up survey to the biker count survey in 2005 and 2007. A comparison of the results from 2007 and 2008 on 66 comparable profiles showed the biking volumes increased on 33 profiles (a half of them), specifically by under 50 % on 20 profiles, by over 50 % on 8 profiles and by over 100 % on 5 profiles.

A biker on a cycle lane close to the Letňany Metro station

A cycle path on the Rašínovo nábřeží embankment

The profiles most heavily used were the *Podolské nábřeží* embankment (1 116 bikers per day) and the *Trojská lávka* footbridge (990 bikers per day).

Also a questioning enquiry on bicycle traffic in Prague was conducted in 2008. The purpose of the enquiry was to chart cycling conditions in the Capital, significance of factors to opt for a bike for transport and barriers impeding greater development of cycling. As many as 1 002 respondents were enquired in the poll for data concerning bicycle ownership, parking and storage capacities, acquaintance and use of cycle routes as well as motivations to make more use of the bicycle for transport. The enquiry followed up a similar enquiry conducted in 2002.

The comparison of the results can be summarised to show the number of bicycles has increased in Prague as well as the activity to use the bike and, consequentially, the annual kilometres cycled. The biggest barrier of more cycling is seen the need of better safety, lack of roads and air pollution in Prague. A segregated cycle path is considered an optimum, with asphalt as the preferred surface.

Cyclists in Prague Integrated Transport (*PID*)

New *PID* Rights and Obligations have brought about more options in bicycle transport by trams. From 1 April, 2008, it is now possible to transport bicycles on selected sections in the direction away from the inner city during work days from 8:00 p.m. to 6:00 a.m., on weekends and holidays around the clock. Bicycles may be transported only in spaces designated for transportation of baby carriages, at most two bicycles in each space at a time.

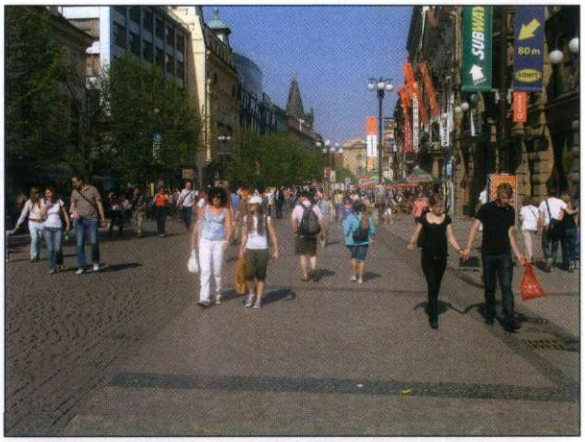
9

PEDESTRIAN TRAFFIC

Walking makes an essential part of human life. A whole trip from beginning to end can be made by ambulation, walking both starts and ends any trip made by whatever private or public means of transportation.

Walking is fundamental, inexpensive and environment-friendly way of transport. Ambulation serves not only for personal locomotion, it also improves physical and mental health and serves for relaxation, helps make contacts with other humans and enhances the perception of the environment of human locomotion or habitat. It has a vital and unique urbanifying and social function. Walking offers an instant mobility independent of more space-demanding and expensive modes of mobility while contributing to improve the urban quality of life. That is why the Technical Administration of Roads of the City of Prague (*TSK*) that takes care of 745 ha (1 841 acres) of footways pays great attention and money to improve their surfaces and design in order to achieve greater safety for pedestrians. Dozens million of Czech Crowns were invested by TSK for these purposes through the Pavement Programme in 2008 and over 100 mil. CZK was expended for targeted repairs of pavements as demanded by district authorities (that mostly contributed) and for regular maintenance. Barrier-free adjustments of crosswalks which required about CZK 10 mil. in 2008 were also continued.

Pedestrians on a crosswalk at the upper Wenceslas sq.



Pedestrian precinct at the Na příkopě street

Approximately one in four intra-urban trips in Prague is currently made by walking only, using no other means of transport.

The most walking, nearly one in three trips, is done inside territory of *Praha 1*. Prague 1 is the origin or destination of 23 % out of all the walk trips with no other use of transport, more 9 % walk trips are made solely inside the area, i.e. not crossing into any other district. Permanent residents of Prague 1 and 2 which is almost all the Prague Conservation Area (PPR) will make as many as 42 to 43 % of their trips only on foot. Yet over half a million persons walk within the area on an average workday.

The share of trips made solely on foot decreases from the inner city outward to the suburbs. Walk trip share at the outskirts of the city is under 15 %.

Purposes of walk trips are different. The total number of almost 800 000 walk trips made by permanent residents of Prague on an average workday includes 40 % of them related to dwelling. Another 22 % walk trips made by Praguers relate to business – commuting, errands etc. The third rank of 17 % of all the walking are shopping and catering trips.

The greatest walkers are pupils, students and apprentices who solely walk 30 % of their trips. They use public transportation (62 %) for other journeys and use a car for only 8 % of trips. On the other hand, employees and the self-employed walk only 14 % of their trips. To make the rest of 86 % trips, they use passenger cars in 60 % trips and a means of public transport in 26 %.

Pedestrian routes in Prague are affected especially by distribution of city-making functions (concentrations of working sites, shopping and administration facilities, stops and stations of public transport, leisure grounds, sights etc.), by a terrain morphology and natural environment of Prague.

Volumes of pedestrian traffic differ due to location, type of walkway and a season. The highest volumes of pedestrian mobility in Prague are met on the "Golden Cross" in the inner city (the intersection of Wenceslas Sq. to the *Na můstku* street and the *28. října* street to the *Na příkopě* street) where 5 000 to 8 000 pedestrians per hour walk on an average working day. The most frequented walk routes include also the link of tourist hot sights between the Prague Castle and the Old Town Square where pedestrian traffic volumes reach 3 000 to 4 000 walkers per hour on a workday. The walking volumes are here even higher by nearly 15 to 20 % on weekends (especially Saturday) and bank holidays over workdays. Weekends bring out ample streams of pedestrians also on routes going through sylvan and other parks in Prague intended for short and medium-term relaxation of the population.

The "Golden Cross", the 28. října street

Pedestrians on the busy crosswalk to the Charles Bridge

Principles of Pedestrian Traffic Development in Prague

Technical Administration of Roads of the City of Prague drawing on the Resolution of the Transport Committee of the Municipal Corporation have produced, jointly with the City Development Authority Prague (*ÚRM*), "Principles of Pedestrian Traffic Development in Prague" as a basis for follow-up work to continue developing pedestrian traffic on a new Land Plan for Prague.

A draft of the Principles, completed in September 2008, was then discussed with city district representatives. Opinions of the districts contained notably specific demands concerning:

- removing barriers from pedestrian routes and walkways crossing multi-lane vehicular roads, railways, streams of water, large industrial yards and parks and similar structures;
- providing walkways that are still missing, especially sections of footways and pedestrian routes.

The Celetná street

Pedestrian precinct with trams on the Vodičkova street

Substantial remarks to the text of the general principles of pedestrian traffic development in Prague have been largely accepted. The draft of the Principles was acknowledged by the municipal Transport Committee noting that specific measures were to be suggested in keeping with the Principles.

10

AIR TRANSPORT

Airline passenger and freight transport is conducted in the Capital chiefly at the Prague Airport, situated at the north-western outskirts of the city. The other three airports in Prague serve mostly other, special purposes.

The Prague Airport offers three take-off and landing runways, one of which is in a long-term shutdown. The total annual runway capacity exceeds 200 000 aircraft movements per year. Maximum hourly capacity in 2008 was 44 aircraft movements (take-offs and landings) per hour. The terminals 1 and 2 on the north and terminal 3 on the south provide the joint capacity of 15,5 mil. passengers/year. Two terminals are available to clear cargo, 100 000 t/yr each.

Regular lines were operated by 50 carriers on the Prague Airport in 2008, offering over 100 destinations. The largest volumes of passengers were processed for United Kingdom destinations (1 698 000) followed by Germany (1 107 000), Italy (920 000) and Spain (782 000). Most of passengers (90.2 %) were cleared for Europe and a half of the rest was to Africa.

The position of the Prague Airport in international comparison is seen from the following table.

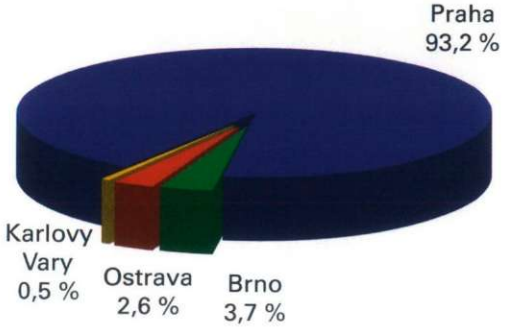
Passenger volumes processed at selected airports (mil. passengers / year)

Airport	2000	2007	2008	08/07 (%)
Hartsfield-Jackson Atlanta International Airport	80.2	89.4	**90.0**	100.7
O'Hare International Airport (Chicago)	72.1	76.2	**69.4**	91.1
London Heathrow	64.3	67.9	**66.9**	98.5
Paris Ch. de Gaulle	47.8	59.9	**60.9**	101.7
Frankfurt	49.0	54.2	**53.5**	98.7
Madrid Barajas	32.6	52.1	**50.8**	97.5
Amsterdam Schiphol	39.3	47.8	**47.4**	99.2
Roma Fiumicino	25.9	32.9	**35.2**	107.0
Københavns Lufthavne	18.2	21.4	**21.5**	100.5
Vienna Schwechat	11.8	18.8	**19.7**	104.8
Brussels Airport	21.5	17.9	**18.5**	103.4
Stockholm Arlanda	18.3	17.9	**18.1**	101.1
Letiště Praha	5.8	12.4	**12.6**	101.6
Warsaw Frederic Chopin	4.3	9.3	**9.5**	102.2
Budapešť Ferihegy	4.7	8.6	**8.4**	97.7
Bratislava M. R. Štefánika	0.3	2.0	**2.2**	110.0

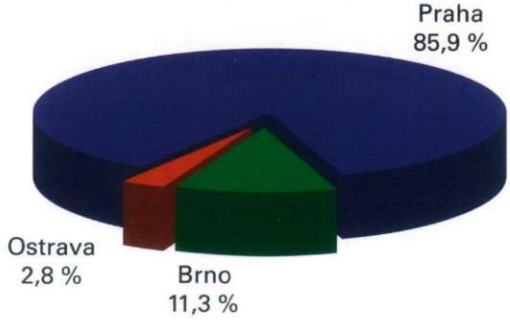
Data: Yearbook of transportation MDS ČR (ICAO), The Chicago Department of Aviation, ACI, Fraport group

The total volume of passengers cleared in 2008 at the four main Czech airports that are international (*Praha, Brno, Ostrava, Karlovy Vary*) was 13.5 mil. passengers, i.e. by 2.4 % more over 2007. The volume of transported cargo (goods and mail) lowered by 8.2 % over 2007 and was 55 700 t in 2008.

Share of airports in passenger transport performance
% from the overall volume of cleared passengers



Share of airports in cargo transport performance
% from the overall volume of cleared cargo and mail

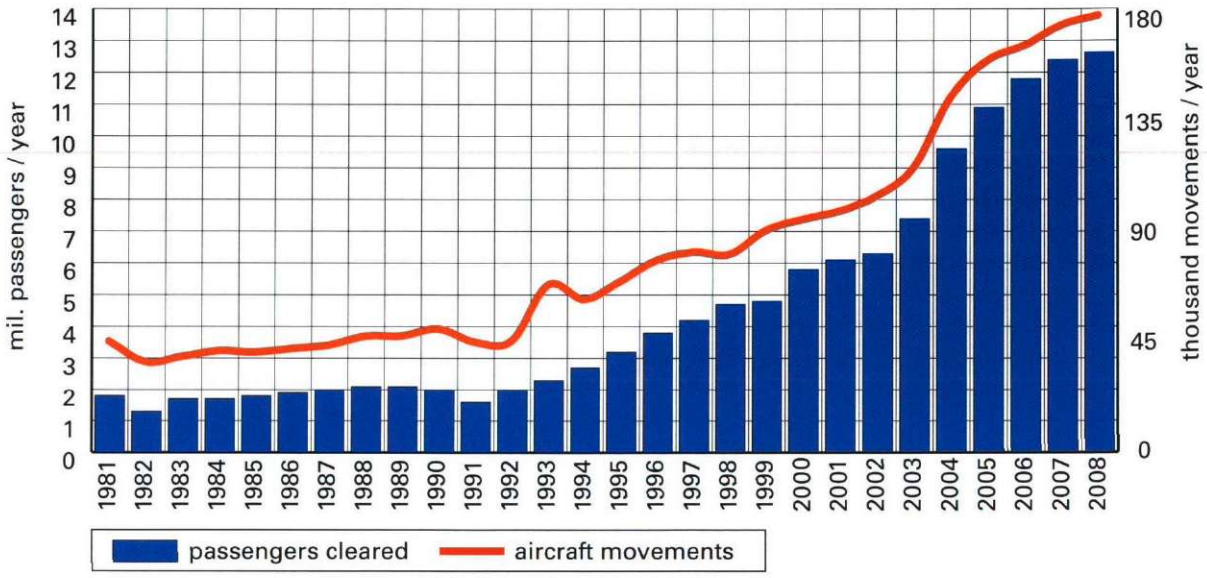


The total of 12 630 600 passengers were cleared through the Prague Airport in 2008 which represents an annual increase by 0.2 mil. passengers (1.6 %) over 2007. The 86 % of passengers were transported by regular lines, the remaining 14 % by special lines out of the total volume 12.6 mil. The share of low-cost carriers has increased, having reached the value of 23.4 % in 2008. The most passengers were cleared in August (1 402 300 persons), the least of them in January (754 900 persons). Compared to 2007, the monthly high in 2008 was by 4.8 % up.

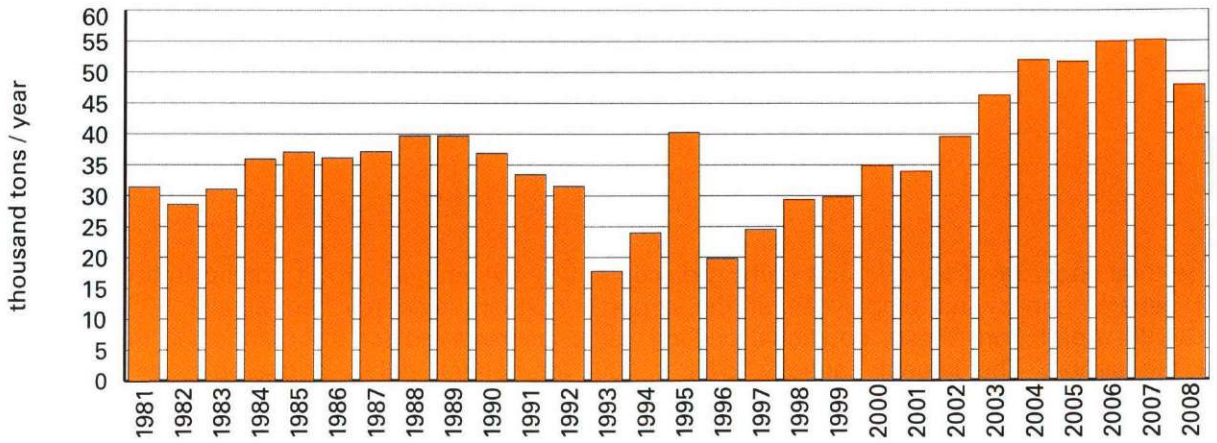
The cargo air transport cleared 47 870.8 t goods in 2008. Compared to 2007 the total cleared air cargo volume lowered by 13.3 %. The most cargo was handled in March (4 565.4 t), the least in December (3 523.2 t). The monthly high was by 14.4 % lower in 2008 than in 2007.

The number of aircraft movements in 2008 was 178 628 moves/year which is by 3 966 moves more than in 2007 (a rise by 2.3 %). The most movements (17 094) was recorded in July, the lowest (12 575) in February. The monthly maximum movements in 2008 were by 5.6 % higher over 2007.

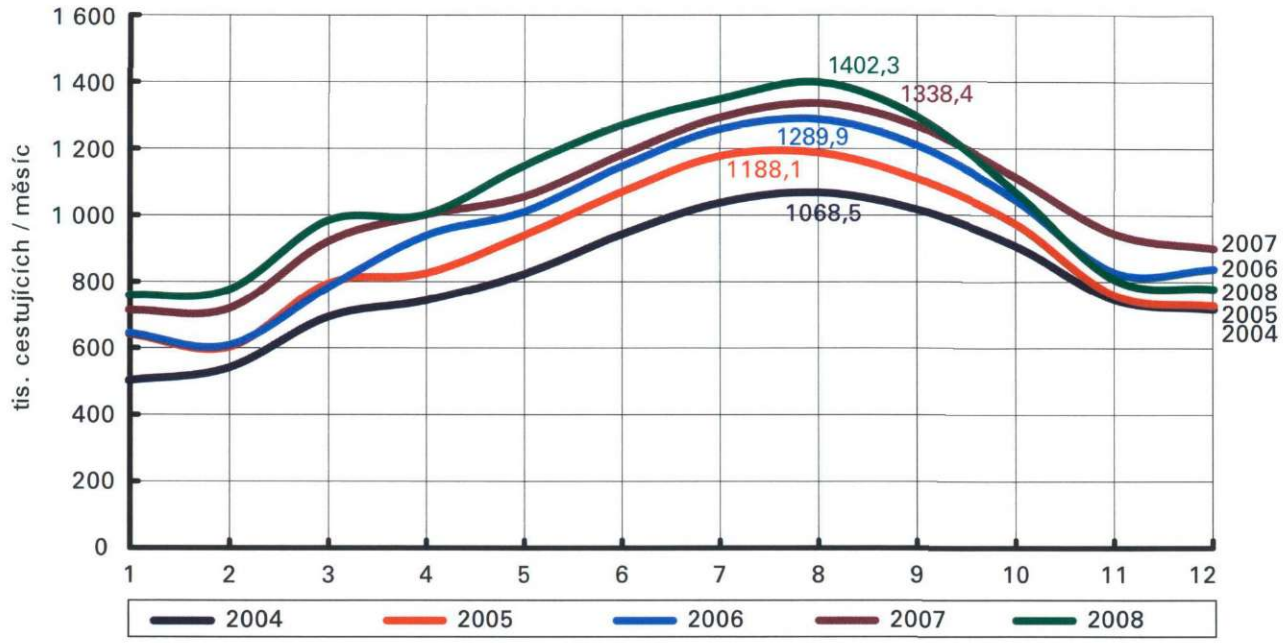
Development of the *Praha – Ruzyně* airport volumes
passengers cleared and aircraft movements



Development of the *Praha – Ruzyně* airport volumes
cargo handled (goods and mail)

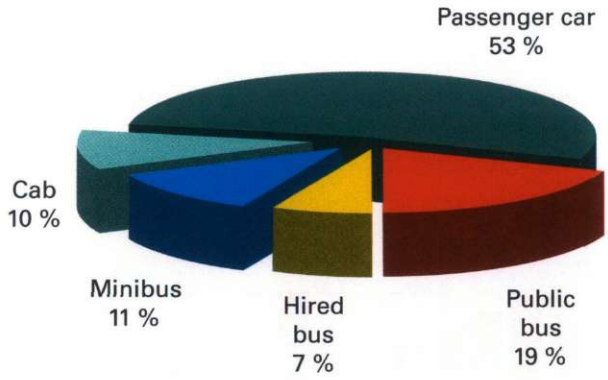


Passengers cleared at the *Praha – Ruzyně* airport, monthly, 2003 – 2008



The Prague Airport is situated about 11 km from the inner city. A connection for airline passengers is provided by means of a special coach service as well as an Airport Express line terminated at the *Praha-Holešovice* railway station (at *Praha hlavní nádraží* station from December 2008), taking up the *Pendolino* train passengers. Additionally, the airport is serviced with two fast lines of municipal bus transport terminated at the Metro A and B line terminals at the *Dejvice* (A) and *Zličín* (B) respectively, with other *PID* bus lines as well as many national and regional coach lines. Also available is cab transport offering both passenger cars and minibuses. Additionally, multiple car rental companies operate there. The majority share of airport-to-city passenger transport is covered with individual cars.

Airport-to-city modal split
September 2007, workday, 6-22 h



The total capacity of lay-bys and parking places run by the Prague Airport administration available to general public and employees at the airport's northern side reached almost 5 300 places in 2008. Apart from these, additional parking yards are reserved for the companies that operate at the airport. The largest capacity (over 4 600) for general public and employees is offered inside parking facilities A, C and D. Additional 500 parking places operated by *Evropark a. s.* are available in park houses T1 and T2.

Most of the places are medium and long-term, 213 short-time lay-bys are available for service operations and over 100 places are set apart for persons with reduced mobility. 121 parking places are available to the public at the southern end of the airport including 13 places for persons with reduced mobility or orientation.

WATER TRANSPORT

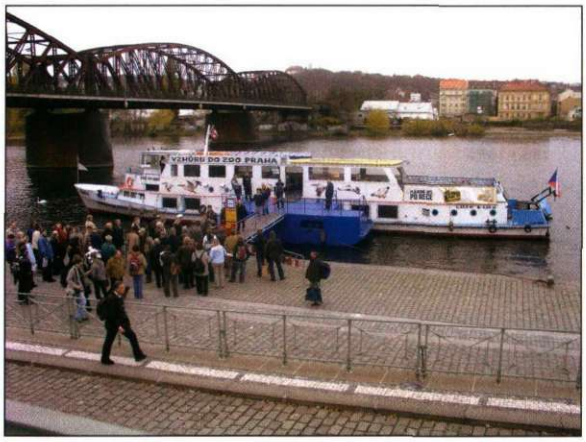
Prague water transport provides passenger and cargo transportation on the *Vltava* river whose length across Prague is 30.9 km. There are five sluices on the river in Prague (*Modřany, Smíchov, Mánes, Štvanice, Podbaba*). The waterway capacity is determined by the capacity of the sluices – *Podbaba* 5.2 mil. t/year and *Smíchov* 2.8 mil. t/year.

The *Vltava* river passenger transport is mostly of leisure type. It is carried out by several companies all year round which specialize in different types of Prague sight cruises with additional services.

Among passenger river transport operators, the largest ones include the Prague Steamship Company (*Pražská paroplavební společnost, a. s. – PPS*), European Water Transport (*Evropská vodní doprava, s. r. o. – EVD*), *Aquaviva Praha, s. r. o.*, and the First General Boating Company (*První všeobecná člunovací společnost, s. r. o*).

The first water transport operator on the *Vltava* river in Prague was the Prague Steamship Company, established in 1865. It currently operates 5 ships landing at the *Rašínovo nábřeží* embankment between the *Palackého* and *Jiráskův* bridges. The largest ship is the restaurant parlour steamer *Vyšehrad* with the capacity of 300 spaces. The vessels *Odra* a the *Visla* are motor restaurant watercraft taking 200 persons each. The sightseeing motor ships *Lužnice* and the *Hamburg* have capacities of 164 places each.

The company offers several regular lines: *Praha – Mělník* (2 times a year), *Praha – Slapy* (weekends and holidays from 1. 5. to 14. 9.), *Praha – Troja* (3 times a day from 1. 5. to 14. 9., April and October only on weekends and holidays). The company transported 52 990 passengers on regular lines in 2008 and 45 250 passengers on cruises. The company's vessels also provided a makeshift *PID* transport (line X-21) replacing trams while the *Vyšehradský* tunnel was being redeveloped. The vessels operated on the section *Výtoň – Podolská vodárna* from 6:00 a.m. to 10:00 p.m. in the frequency that linked with the tramway transport (about 10 minutes) from 3. 11. to 27. 11. The substitute watercraft transport handled approximately 110 000 passengers during the closure.



Substitute ship transport X-21 while the Vyšehradský tunnel is repaired

The Vyšehrad steamship anchors close to the Dancing House

Another passenger river transportation company is the European Water Transport. The company operates 8 modern ships landing at the *Čechův* bridge. The largest one, the *Šumava* steamer – offers the total capacity of 320 places, the *Kotva* 200 places while the capacities of six more vessels are 164 places each. They operate all year round, either at regular intervals, or as ordered by clients. The company transported 179 170 passengers in 2008.

The *Aquavia Praha, s. r. o.,* company offers social events on three ships – the *Moravia,* the *Czechie* and the *Klára*. The largest capacity vessel is the *Czechie*. The company provides one-hour, two-hour or customer-tailored cruises. The landing place is at *Na Františku*.

Channel sightseeing cruises on the *Vltava* entitled Venetian Prague is offered by the First General Boating Company all year round. The company operates the parlour vaporetto *Nepomuk* with

the maximum capacity of 150 persons, 4 vessels for 32 persons and 7 boats for 11 persons. Watercraft leave the *"Judita"* and *"Čertovka"* wharfs on the hour.

Apart from these large companies, there are many smaller companies offering cruises and social events on individual orders. Wharfs of these companies are found along the two *Vltava* banks in the inner city, e.g. *Na Františku,* at *Kampa* and at the *Dvořákovo nábřeží* embankment. The companies take orders for Prague cruises as well as for trips to *Slapy, Nelahozeves, Poděbrady, Mělník* and Dresden, Germany. Old Time Boats are operated for 6 to 10 persons, motor Taxi Boats for 2 to 3 persons and numerous are also restaurant cruisers.

A wharf between the Palackého and Jiráskův bridges

Construction of a new wharf at the E. Beneše embankment

A new wharf to dock ships was built on the *Vltava* left bank between the *Čechův* and *Štefánikův* bridges in 2008. A 480 m long barrier-free quay is to be used for logistics, services and cruisers' waiting. The quay can berth 10 to 15 watercrafts. Also cabin cruisers coming to Prague from all over Europe are going to be able to stay there. Included in the new wharf are emergency berths for up to four craft to be available in case of floods.

Passenger water transport is also served with **ferries across the *Vltava***. These handled as many as 342 870 passengers in 2008. All the ferries are integrated in the *PID* system. See more under 3.1.2.

Various national and foreign carriers operate also **cargo shipping** on the *Vltava* river. One of the largest carriers is European Water Transport that provides domestic and international shipping of bulk cargoes, heavy pieces, containers, liquids etc. Its fleet includes 38 vessels and 1 tanker. The company also owns floating facilities – construction platforms for various purposes.

Volumes of cargo shipping and numbers of ships flown in 1997 – 2008 are indicated in the following tables.

Volumes of freight flown through sluices in Prague from 1997 to 2008 (tons of freight/year)

Year	Sluices				
	Modřany	*Smíchov*	*Mánes*	*Štvanice*	*Podbaba*
1997	206 921	234 537	2 363	232 442	379 606
1998	136 407	196 487	1 320	191 624	403 840
1999	97 325	190 323	10	186 153	356 008
2000	108 168	197 740	238	201 712	370 037
2001	109 282	175 941	360	176 936	374 692
2002	71 136	126 206	7 251	117 296	214 173
2003	63 158	77 398	6 523	83 289	241 000
2004	86 254	130 404	4 018	126 295	293 027
2005	56 759	59 378	690	106 749	302 726
2006	12 482	33 109	545	54 743	236 344
2007	18 344	32 037	35	38 280	393 159
2008	**15 968**	**19 403**	**757**	**20 048**	**309 259**

The Štvanice sluice

A cargo boat on the Vltava at Sedlec

Watercraft flown through sluices in Prague from 1997 to 2008

Year	Sluices				
	Modřany	*Smíchov*	*Mánes*	*Štvanice*	*Podbaba*
1997	2 164	18 581	1 273	3 529	2 237
1998	1 863	17 844	3 103	5 091	1 562
1999	1 897	20 305	3 919	4 794	1 649
2000	1 898	21 716	3 747	5 775	1 897
2001	1 852	22 291	3 434	5 732	1 851
2002	1 307	17 729	2 604	3 603	1 203
2003	1 785	21 617	2 878	4 118	1 415
2004	2 413	23 967	2 998	5 330	1 690
2005	2 530	24 576	2 329	7 740	1 799
2006	2 265	24 247	2 285	6 492	1 736
2007	2 633	26 879	2 571	7 209	2 735
2008	**2 824**	**28 622**	**2 286**	**7 810**	**2 788**

Four harbours are found on the territory of the city – *Radotín, Smíchov, Holešovice* and *Libeň* (out of service since 2006). They serve to reload various freight.

The operator is Czech Harbours Company (*České přístavy a. s.*). Harbour users are carrier, warehousing, reloading and producing companies and entities.

Apart from the harbours, occasional reloading places or mobile floating piers are available to handle cargo.

Volumes of bulk cargo in Prague harbours from 2004 to 2008 (total volumes in t/yr)

Year	Harbours			
	Praha-Radotín	*Praha-Smíchov*	*Praha-Holešovice*	*Praha-Libeň*
2004	58 961	19 642	31 311	14 236
2005	36 408	11 396	99 308	2 934
2006	13 932	559	114 462	-
2007	20 597	9 986	182 974	-
2008	**10 068**	**4 016**	**84 792**	**-**

12

TRANSPORTATION STRUCTURES

The mobility infrastructure in Prague is largely funded from the municipal and governmental resources (the municipal budget and the State Fund for Transport Infrastructure – *SFDI*, respectively). Development of mobility structures is supported by investors, with municipal investments namely and especially the Municipal Investment Division (*Odbor městského investora MHMP*, abbrev. *OMI*), Technical Administration of Roads of the City of Prague (*Technická správa komunikací hl. m. Prahy, TSK*) and Prague Public Transit (*Dopravní podnik hl. m. Prahy, a. s., DPP*). With governmental investments namely Railway Infrastructure Administration (*Správa železniční dopravní cesty, státní organizace, SŽDC*), Road and Motorway Directorate of the Czech Republic (*Ředitelství silnic a dálnic ČR, ŘSD*), Prague Airport (*Letiště Praha, a. s., LP*) and Waterborne Traffic Directorate of the Czech Republic (*Ředitelství vodních cest ČR, ŘVC*). More investing entities have minor share in the mobility constructions in Prague.

The year 2008 saw completed many transport constructions important for the Capital (the Metro C line extended as far as *Letňany*, the "New Link" railway, a tram line extended up to the *Radlická* Metro station, a new R6 freeway section, the stage 2 of the *Pobřežní III* project), significant sites were redeveloped (the *Vyšehradský* tunnel, the *Hlavní nádraží* Main Station) and continued were also constructions planned to be put in service in the years to come (the Prague Ring Road section South, the City Ring Road – *Blanka* series of tunnels and the *Vysočanská radiála* road).

The most important structure in the public transportation network in 2008 was the 4.6 km long Metro IV C2 line section with the stations of *Střížkov, Prosek* and *Letňany* (invested by *DPP*) opened in May and extending the earlier IV C1 line section. It is the fourth extension of the oldest line. The total costs for the new Metro section were CZK 11 bn.

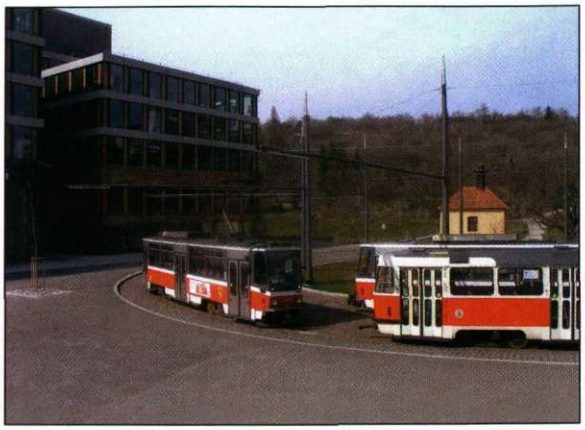
The new Metro C Letňany station interior during construction and after completion

The *Střížkov* station has become a new landmark of the *Prosek* housing estate. It is a sunken dual-platform station consisting of an open hall with glazed steelwork.

The *Prosek* station is a subterranean dual-platform facility with only elevators and a covered staircase visible on the ground. The construction of the station has brought about an adaptation of the space between the Billa department store and the *Vysočanská* and *Prosecká* streets.

The *Letňany* terminus has been conceived bearing in mind a prospective great increase in passengers. The *Výstaviště Letňany* exhibition ground is located close to the station, with sporting grounds and residential quarters to be developed there later. Currently the station is found away from the housing and serves mainly as a point of transit to buses covering eastern and northern neighbourhoods of Prague as well as communities close to Prague. A new P+R facility has been built close to the station offering to park up to 633 vehicles.

A new tram line was launched between the *Laurová* and *Radlická* stops on 4 October, 2008 (invested by *DPP*). Its significance consists mainly in upgrading mobility at *Radlice* area and also in emergencies should the Metro B line operation be interrupted. The new tram line goes along the middle of the *Radlická* street from the former *Laurová* terminal up to the Metro *Radlická* station where it is terminated with a tram loop. The construction costs for the 741 m long dual track tramway have reached CZK 511 mil. The construction has largely been financed from European funds in the Prague Competitiveness Operational Programme. The municipality have contributed to the effort out of their budget with CZK 38 mil.



A new tram loop Radlická under construction and when completed

Another significant transport construction put in service in 2008 is a new R6 freeway section (by *ŘSD*). The four-lane and dual carriageway road starts with a grade-separated junction, *Řepy,* on the Prague Ring Road and links to sections completed earlier north of the *Pavlov* village. The construction, 10 430 m long, makes part of a key connection from Prague via *Karlovy Vary* to Germany, being included in a trans-European network. The new road greatly improves travelling west from the capital and makes life easier especially for nearby communities *Hostivice, Jeneč* and *Pavlov* relieving them from excessive volume of vehicular traffic. The total construction costs for the R6 section were CZK 2.6 bn. Related to the R6 structure was also the *Karlovarská* street redevelopment between the Prague Ring Road and the *Drnovská* street (by *TSK*). It was conceived and built as a 673 m long four-lane bi-directional road separated with a central reservation.

The new R6 freeway section from Prague to Pavlov

The Pobřežní III stage 2

Eminent structures completed in 2008 no doubt include the stage 2 of the *Pobřežní III* construction (the second extension of the *Rohanské* embankment – by *TSK*). It stretches from the *Za Invalidovnou* street to the *Švábky* street. The significance of the structure is chiefly in calming the vehicular traffic on the *Sokolovská* street. Simultaneously, however, the new construction is able to serve the new development area along the *Vltava* river. The 677 m long and 34 m wide extension of the *Rohanské* embankment offers two lanes in either direction, a cycle track and a new, 3 m wide pavement segregated from the carriageway by a parkway with trees.

Incorporated are also barrier-free crosswalks and related traffic lights. New utilities, public lighting and associated park arrangements have been built at the same time. Apart from the new *Pobřežní III* stage 2 road, also a 224 m long link over the *Rustonka* area to the *Sokolovská – Pod plynojemem* crossroads has been built. The new road has been named U *Rustonky*. The total costs for the construction work were CZK 331 mil. including CZK 140 mil. under the JPD 2 funded from the European Regional Development Fund.

A new slip road from the *5. května* street to the *Hvězdova* street was opened as a means to rearrange traffic on the *Pankrác* plain in autumn, 2008. Placed between the earlier slip roads *Děkanská vinice* and *Na strži*, it makes possible to turn to the *Sdružení* and *Hvězdova* streets across a new traffic lights controlled junction. In the oncoming direction, it is possible to enter the *5. května* street out of the *Hvězdova* street and head on for *Brno*. Another approaching ramp was adjusted and opened to traffic to the *5. května* street from the *Na strži* street. Called "Shopping Zone" exit, it enables to enter the shopping centre and return to the inner city via the *Vyskočilova* street.

The City Ring Road construction site at Letná

The Prague arterial road network construction went on in 2008. A transportation development effort that had most of the attention is an City Ring Road construction *Malovanka – Pelc Tyrolka* (by *OMI*) which includes a split-level junction at the northern portal of the *Strahovský* tunnel as well as the *Blanka* series of tunnels. Preparation work started on the sections *Špejchar – Prašný most – Myslbekova* (felling, demolitions, surfaces removal) and excavation of the ditch kept on, as well as digging of tunnels in the open ditch at the *Letná* site. The whole of *Malovanka – Pelc Tyrolka* section is expected to launch during 2011.

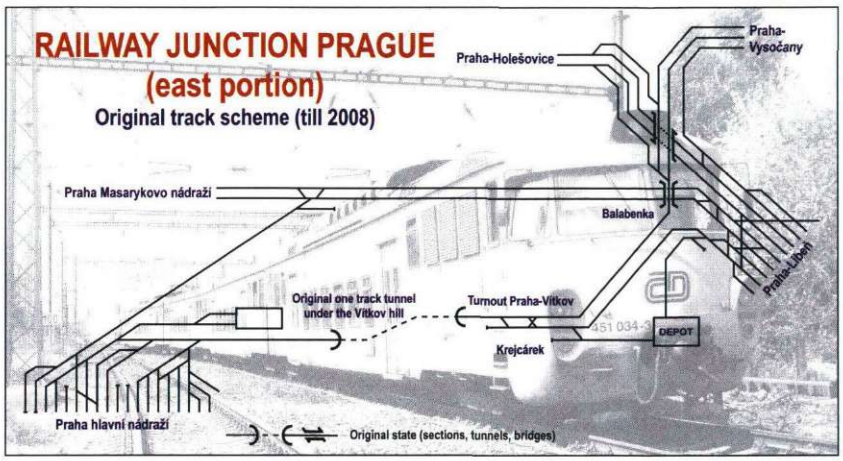
Prague Ring Road South construction (by *ŘSD*) continued on the territory of Prague and the surrounding *Středočeský* region in order to relieve the urban road network of some transit. The building effort on the 514 *Slivenec – Lahovice* sections proceeded in 2008 with commencing the construction of the elevated road across the valley of the *Berounka* river, the site 513 *Lahovice – Vestec – Jesenice* carried on concentrating on a bridge across the *Vltava* and fresh work was initiated at the 512 construction from *Jesenice* to the D1 motorway (split-level junctions *Dobřejovice* and *Jesenice*). Opening-up of the new 23 km long Prague Ring Road section is scheduled for 2010.

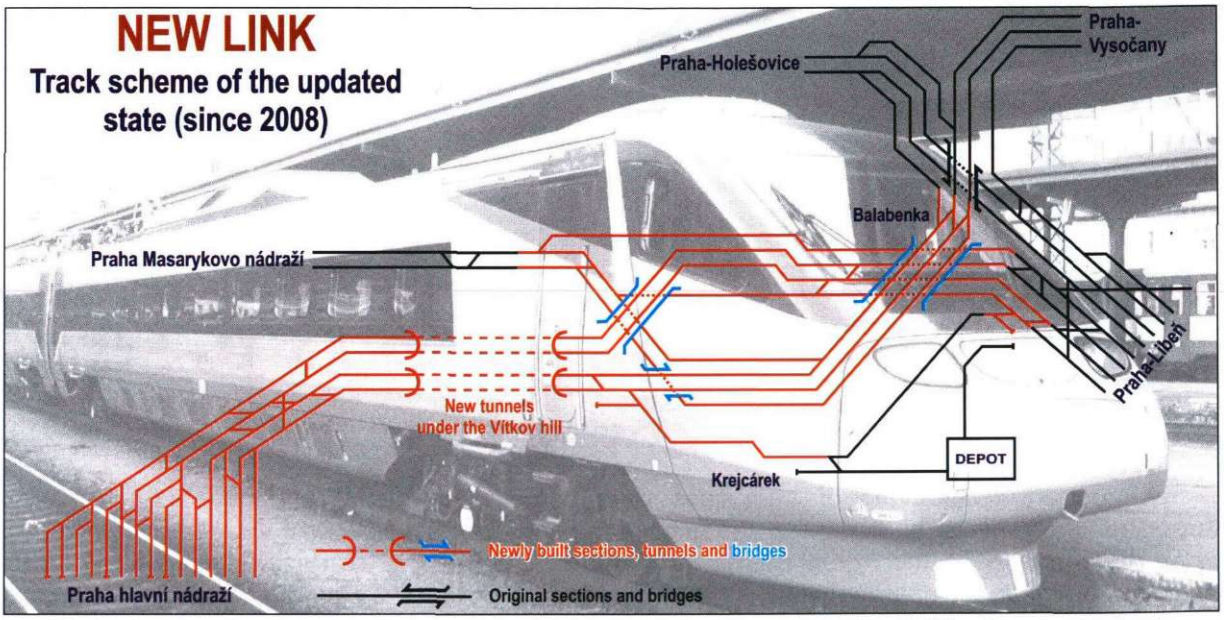
Building operations were also carried out (by *OMI*) at the *Vysočanská radiála* site in the section between the Prague Ring Road and the *Kbelská* street in 2008. The total length of the radial road is to be 5.6 km and is expected to alleviate the *Chlumecká, Kolbenova* and *Poděbradská* streets from the passing traffic after putting it in service. The work focused on finalizing the split-level crossing of the *Vysočanská radiála* with the *Kbelská* street. Bridges of split-level crossings with the *Lipnická* street, the Prague Ring Road next to *Horní Počernice* and another one with the *Všetaty*-bound railway were built along with the road in the section between *Satalice* and *Horní Počernice*. The construction is to be completed by the end of 2009.

The Prague Ring Road site – a bridge across the Berounka valley

Western portals of new railway tunnels under the Vítkov hill

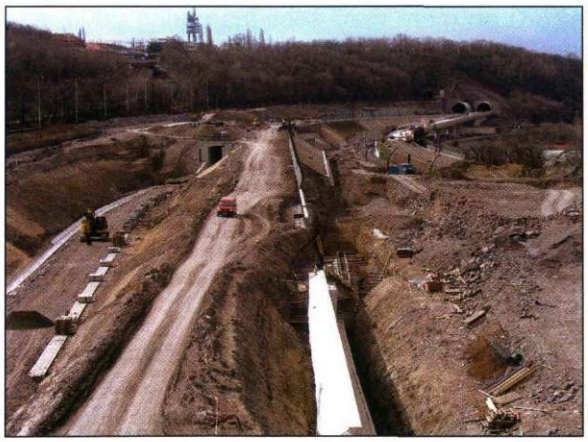
The "New Link" as the railway connection is termed was officially launched (by *SŽDC*) on 2 December, 2008. Its significance is above all an increased throughput of the railways and increasing the speed between the *Hlavní* and *Masarykovo* railway stations on the one end and the *Praha-Libeň, Praha-Vysočany* and *Praha-Holešovice* railway stations on the other end. The "New Link" interconnects the railway corridors I, III a IV and by modernizing tracks involved it is expected to contribute to a greater attractiveness of railway transportation in the integrated transport system of the capital.





An original track scheme of a portion of the Prague railway junction, its updated condition after the "New Link" has been completed and a new information system at the Hlavní nádraží railway station

As many as 10 railway and 2 road bridges have been built for the project. The most important one is the 439 m long elevated railway over the *Husitská* and *Trocnovská* streets and above the engine shed of the *Masarykovo* railway station. Other key construction works of the "New Link" are two dual track tunnels, one 1 329 m long and the other 1 372 m long, running deep along the *Vítkov* ridge. The total costs have reached CZK 9.3 bn.



A "New Link" site at Krejcárek under construction and after completion in the end of 2008

Putting the "New Link" in full operation was accompanied with opening refurbished platforms 1 to 4 in the *Hlavní nádraží* railway station (by *SŽDC*) and, at the same time, the track bed remodelled and attached in its northern end to the new link. Platform height was raised so as

to make getting in and out of trains easier, a new information system was installed including digital panels and loudspeakers. All platforms are now easily accessible to the handicapped. The whole project cost CZK 1.6 bn.

A new wharf was constructed at the *nábřeží Edvarda Beneše* embankment (by *ŘVC*) for CZK 65 mil. from resources of the State Fund for Transport Infrastructure. It is planned to provide for shipping, services and cruiser waiting.

The key tram line redevelopment efforts included the superstructure renovation and track replacement on the *Olšanská* street (by *DPP*). The whole repair of the 770 m long line was coordinated with the replacement of the large-size panels on the *Seifertova* street in the 660 m long section between the *Přibyslavská – Kubelíkova* streets and the replacement of the track structure on the *Olšanské* square.

The carriageway and the tram line were reconstructed in the *Vyšehradský* tunnel (by *DPP*) in autumn, 2008. Also the tunnel itself was repaired and cycle track reconditioned with the reconstruction.

A tram line redevelopment on the Olšanská and Korunní streets

More important renovations of tram lines were carried out (by *DPP*) during 2008. Stage II superstructure renewal by means of the large-size panel technique of BKV (*Budapesti közlekedési vállalat*) was made on the *Korunní* street, a major overhaul of the tram line *Přístaviště – Pobřežní cesta* – the *Nádraží Braník* loop fork as well as a repair of the line *Braník – Modřany*. Renovated was also the track on the *Edvarda Beneše* embankment in the *Klárov – Čechův most* section and more minor repairs.

Dilatation and surface of the cable-stayed bridge on the *Jižní spojka* semi-orbital (by *TSK*) was repaired in August, 2008, as the end cross beam had been found sunken. In order to deal with the emergency, a complete closure of the bridge was unavoidable for three days. Follow-up repairs of the cornices on both sides of the bridge were carried out until the year end as well as renewal of the insulation on the adjacent carriageway and constructing a new drainage system.

Rebuilding and repair efforts were accomplished (by *TSK*) on more road sections during 2008, e.g. the *Křižíkova – Prvního pluku* intersection redevelopment, dilatation replacement in the *K Barrandovu* street, reconstruction of the streets *V Holešovičkách, Anglická, Průmyslová, Kolbenova, Kostelní,* and *Kutnohorská*. The *Veselská – Kbelská* intersection continued to be rebuilt into a grade-separated junction. New cycle tracks were constructed and surfaces remodelled on several of the available tracks. Pedestrian walkways were refurbished in the Pavement Programme and going on was also the Charles Bridge restoration. Less noisy surfaces have been used to repair carriageways and noise barriers have been installed in some places to mitigate an excessive roadway noise.

The Technical Administration of Roads of the City of Prague (*TSK*) invested almost CZK 1 bn. (CZK 969 mil., including the *SFDI* contribution of CZK 448 mil.) in 2008. Apart from being an investor, their responsibility is also to take care of the roads and related facilities. Their purview extended, in the end of 2008, to 2 313 km of roads covering 1 608 ha, with 111 456 upright traffic signs and 84 497 traffic markings, 52 770 street inlets, also pavements (745 ha), verdure (542 ha), tunnels, bridges, parking lots, quay and embankment walls, retaining walls, noise barriers and mounds, traffic controllers, TSDs, telematic systems and safety devices. Keeping the maintained objects in a satisfactory technical and operative condition demands necessary repairs, winter and summer maintenance, tiding and cleaning. Costs of all that exceeded CZK 2.2 bn. (including works paid from a *SFDI* contribution on current expenses) in 2008.

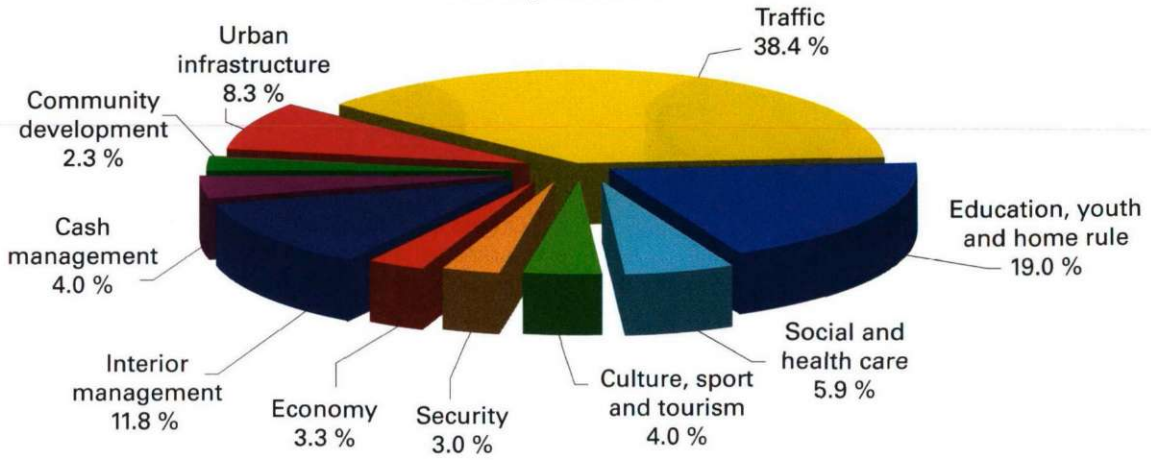
FUNDING THE OPERATION AND DEVELOPMENT OF THE URBAN MOBILITY

The urban mobility operation and construction were funded from the Prague's municipal budget in 2008. The budget was contributed from the state budget and resources of the Prague Public Transit, Co. Inc. (*Dopravní podnik hl. m. Prahy, a. s.*) and other municipal bodies. Earnings from obligations, subsidies from the EU funds and EIB loans are also used for funding.

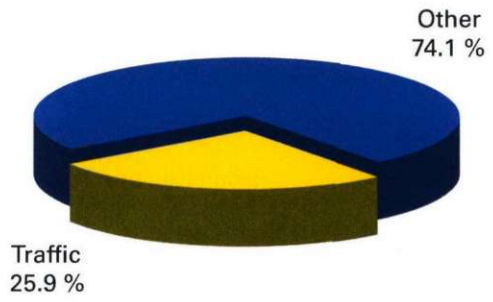
The Prague's municipal budget, adjusted as of 30. 06. 2008, reached CZK 65.1 bn. in expenditures, including CZK 25.0 bn. (38.4 %) expenditures in the chapter 03 Transportation which was the most substantial chapter of the municipal budget's expenditures in 2008 again. The operational expenditures of the Capital were transportation in 25.9 %, the capital expenditures were investments to traffic in 57.8 %.

Breakdown of expenditures in municipal budget in 2008
(adjusted as of 30. 6. 2008)

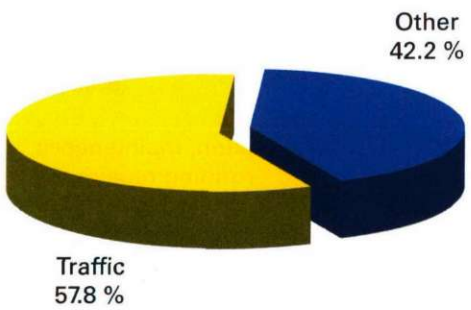
Total expenditures



Share of traffic in operational expenditures



Share of traffic in capital expenditures



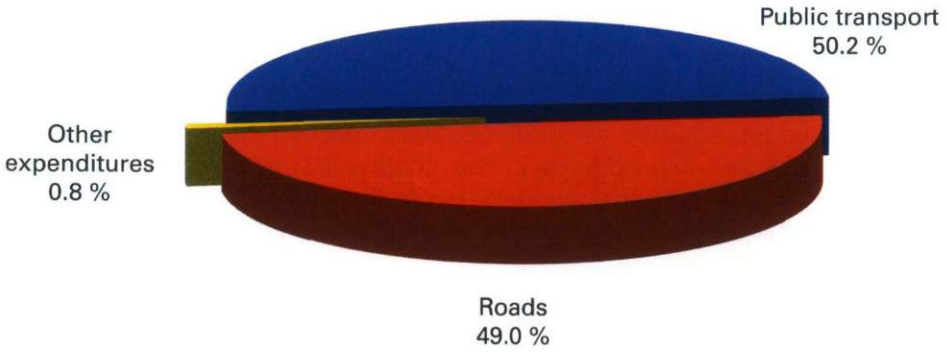
The foregoing amount of CZK 25.0 bn. was CZK 10.2 bn. earmarked to cover operational expenditures and CZK 14.8 bn. for capital expenditures.

The **operational expenditures** in transportation cover every year predominantly subsidies for public passenger transport in and around the city. The amount of CZK 7.7 bn. was allotted in the adjusted budget for this purpose while CZK 2.5 bn. went to repairs, maintenance and operation of the roads.

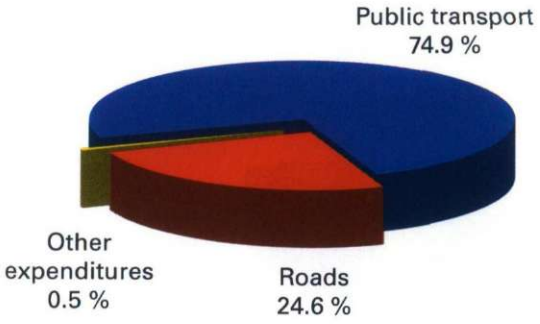
The **capital expenditures** covered mostly investments in development i.e. construction of new roads, Metro lines and other transportation facilities (70 %) as well as larger repairs and redevelopment of traffic routes as well as equipping and renewing engineering devices (29 %). The amount of CZK 4.9 bn. out of the total CZK 14.8 bn. were earmarked for public transport renovation and development, CZK 9.7 bn. for investments in the road network.

Structure of transportation expenditures in the 2008 municipal budget
(adjusted as of 30. 6. 2008)

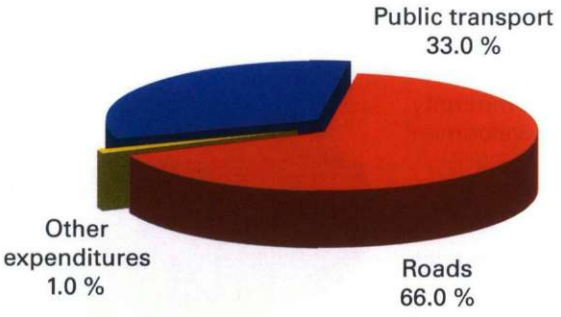
Total expenditures



Operational expenditures

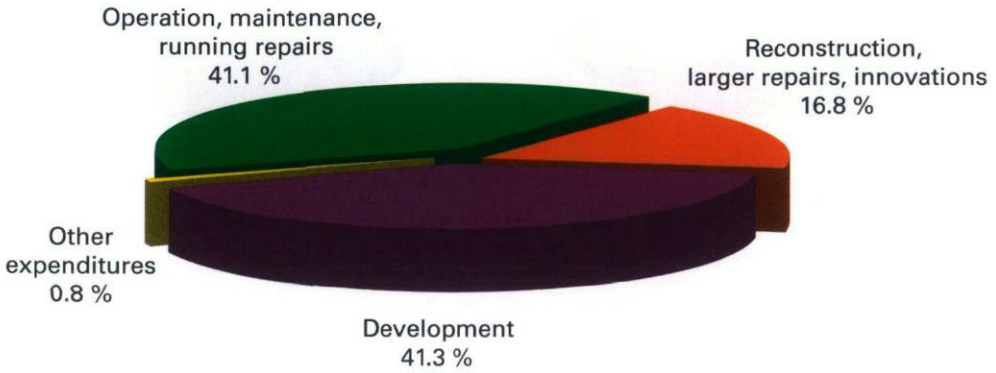


Capital expenditures

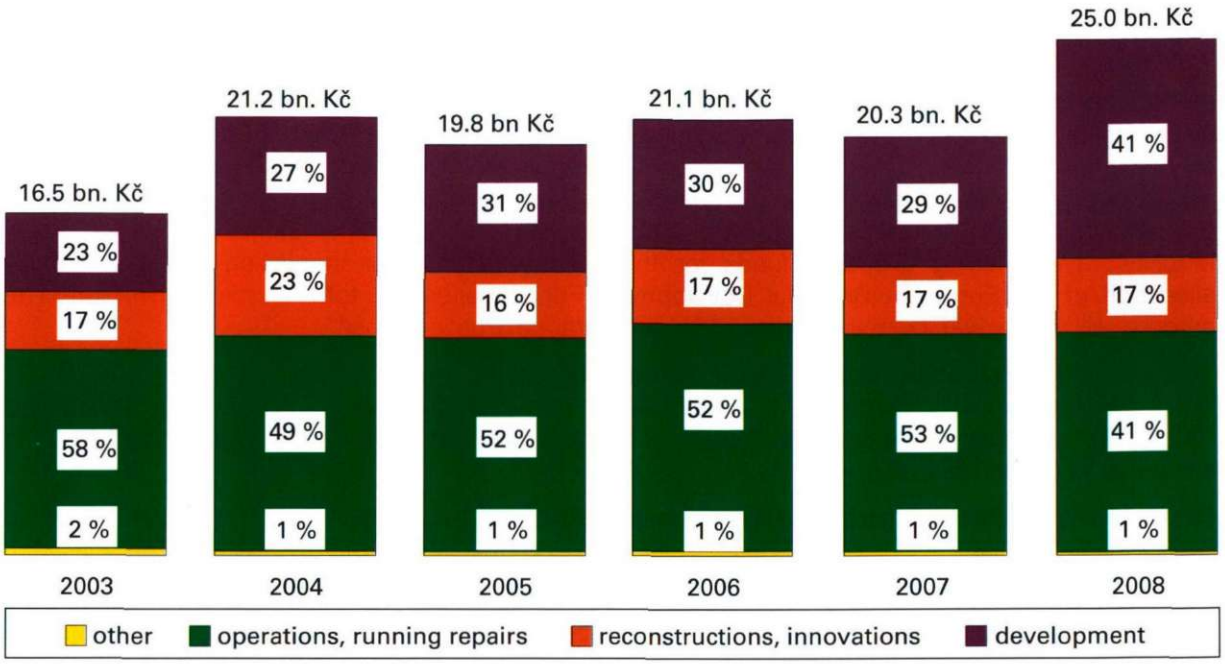


An analysis of the items listed in the breakdown of expenditures made in more detail shows that over CZK 10 bn. was aimed to secure operation, regular repairs and maintenance of the urban transport system, over CZK 4 bn. to provide for larger repairs, redevelopment and renewal of engineering equipment and over CZK 10 bn. was earmarked for investments in development.

Total transportation expenditures breakdown in the 2008 budget
(adjusted as of 30. 6. 2008)



Transportation expenditures breakdown development in Prague's municipal budgets



Targeted contributions concerning public transportation from the national budget were provided to the Capital of Prague for construction of the Metro, maintenance of its system of protection and for purchase of new tram cars (CZK 346 million), the budget of the State Fund for Transport Infrastructure provided the city with CZK 1.73 bn. for maintenance, repair and construction of roads for 2008.

The Government also participates in the construction of the Prague Ring Road encircling Prague, for the financing of which the Government had already assumed and guaranteed full responsibility. Prague Ring Road constructions drawn the total of CZK 5.216 bn. from the investment funds in 2008, including CZK 3.053 mil. from an EIB loan and CZK 1.334 mil. from the Cohesion Fund.

Railway junction Prague constructions were also paid from the government funds.

The Prague Public Transit Co. Inc. have also contributed to meet investment costs for the urban mobility system from their own resources (CZK 1.4 bn.), using them i.a. to cover 13 % of the costs expended in 2008 to renew the PT fleet.

The Rabakovská street

The City Ring Road construction at Troja

14

EU AND OTHER MUNICIPAL PROJECTS

Transport Operational Programme (*OPD*)
The Technical Administration of Roads of the City of Prague (*TSK*) have participated in the preparatory and programming processes of the Transport Operational Programme since 2006. Jointly with the transportation and EU fund departments of the Prague Municipality and in co-ordination with City Development Authority Prague, a division of the Prague Municipality, a spin-off of an independent priority effort No. 5 was achieved for the City of Prague entitled "Modernisation and Development of the Prague Metro and Control Systems of Prague Road Mobility". The ensuing allocated funds for this priority effort (after increasing a compensatory allocation of the European Regional Development Fund) makes the total of EUR 330 million. The amount will be drawn by two entities, TSK and Prague Public Transit.

The "Urban Road Mobility Management System of Prague" project
The particular project, already in the process of *TSK* drawing funds for it, has been entitled "Urban Road Mobility Management System of Prague". Its budget is CZK 655 mil., including OPD subsidies of 85 % (about CZK 560 mil.).

Classes of drawing funds by TSK following their redefinition in 2008

Class 1 – Control by TSDs	Class 4 – Collection of traffic information
Class 2 – Traffic control centre Prague	Class 5 – Urban radio network function enhancement
Class 3 – Optical network	Class 6 – Meteorological sensors

A general aim of the project is mitigation of drawbacks of large volumes of road mobility by means of introducing telematic systems in Prague in order to optimise traffic in the road network employing advanced control and information technology including links to the national comprehensive telematic system (*NDIC*). Specific objectives of the project cover:
- an increase in fluency of traffic on selected road sections in Prague,
- an increase in security of traffic on selected road sections in Prague,
- a decrease in negative effects in environment of road traffic in Prague.

E.g. TSD replacements on the intersections of *Anglická – Bělehradská, Na Pankráci – Děkanská vinice* and *Evropská – a Červený Vrch* crosswalk were funded from the project resources under Class 1 in 2008. Deliveries of new control modules of the Principal Mobility Management Centre (*HDŘÚ Praha*) were funded under Class 2 under modernisation of the *HDŘÚ*. The OPD helped support wiring with optical cables in the *Ládví – Letňany* section under Class 3. Concerning Classes 4 and 6, a competitive tender was concluded for a supplier of new section and segment detectors and weather sensors for the mobility network in Prague.

The "Improving Road Safety in Prague" project
Considering that the urban road mobility management project was applied and approved of successfully, the municipality of Prague applied again for an OPD subsidy for a project in December, this time entitled "Improving Road Safety in Prague". The funding scheme is the same as for the previous project, the OPD subsidy covers 85 % of the costs of the budget totalling CZK 585 mil.

A Single Programming Document for "Objective 2" (JPD 2)
The main purpose of JPD 2 has been the elimination of the most serious drawbacks and barriers to development of some urban neighbourhoods, primarily by means of improving the urban environment and developing the city potential so as for Prague to be able to fulfil the expected role of the dynamic capital of a EU member state. The Programme was planned for the period from 2004 to 2006 while the option to fund the Programme's projects by drawing on EU resources closed in 2008. The chief priority for the Objective 2 was to revitalize and develop the urban environment, for which three specific ends of sub-projects were determined:
- Mobility systems supporting urban environment conversion
- Reconditioning of damaged and inadequately utilised spaces
- Public infrastructure improving quality of life especially in housing estates.

Many projects have been carried out in Prague fulfilling the ends. The year 2008 was set aside so as to monitor, preserve and make use of the assets of all what has been implemented.

The "Mobility Modelling" project
The "Mobility Modelling" project was carried out by the Institute of Transportation Engineering of the City of Prague. Following the merger of the Institute with the Technical Administration of

Roads of the City of Prague *(TSK)*, the successor body, *TSK*, keeps on using the outputs of the effort. The project has been included in Priority 1 and Measure 1.1 Mobility systems supporting urban environment conversion.

The main objective of the JPD 2 Project – Mobility Modelling was improving an efficient specialised tool which enables to check on variants of optimisation and management of the urban mobility by means of a mobility model.

The project carried out from April, 2005, to February, 2007, was processed regarding conditions of mobility current in selected intersections in Prague. Particular conditions in the intersections come from various characteristics and parameters including: the manner of traffic control on the intersection (uncontrolled, controlled with traffic lights), constructional arrangement of the intersection (at-grade crossroads, roundabout, number and transversal arrangement of the road segments that come together), traffic load in particular directions, presence of public transport lines, especially tramway, volumes of pedestrian and cycle traffic etc.

These characteristics and parameters compound to multiple combinations that have been described inside the model in such a way so as for the outputs to correspond to a real traffic as closely as possible. Under the project, a modelling tool has been created that considers the parameters affecting traffic on particular intersections. The tool is now used to test selected intentions, traffic measures and plans so as the urban mobility development is upheld in keeping with the municipal principles of mobility policy.

The JPD 2 – Mobility Modelling project logo

Support for programmes and EU projects draws from the European Regional Development Fund

The "Transport Constructions" project

Completion of the *Pobřežní III* stage 2 construction was funded from the JPD 2 resources in 2008. It consisted of a road extension on the *Rohanské* embankment between the *Za Invalidovnou* and *Švábky* streets. Prague municipality made use of the JPD 2 resources so as to effect many more transport constructions in previous years (the *Chlumecká* street subway construction, the *Broumarská* street redevelopment, a tram line reconstruction on the *Sokolovská* street at the *Vysočany* neighbourhood, implementation of the elevators to the *Florenc* Metro station, multiple adjustments of TSDs in order to introduce active bus priority, development of the Municipal TV Circuit System and also a demanding redevelopment of retaining walls at the funicular to the *Petřín* hill).

The Operational Programme Prague Competitiveness (*OPPK*)

Following the completion of the JPD 2, another Operational Programme takes up its agency, Prague Competitiveness, which aims, again, at increasing the competitiveness of Prague as a dynamic metropolis of a EU member state by means of eliminating barriers to development and drawbacks of the region, improving urban environment, enhancing availability of the mobility and communication services and developing the innovative potential of the city.

Prague obtained a subsidy under the Programme's project "Support of Environment-Friendly Surface Public Transport" for 2008 in order to implement a new tram link between the *Laurová* and *Radlická* stops. The investment was supported by Prague Public Transit and the invested resources were paid back to the investor in the portion stipulated in the regulations of the operational programme after approval of the works. The construction of the line including related adjustments in utilities and noise reduction measures cost CZK 511 mil. while the *OPPK* subsidy amounted to CZK 430 mil.

Building a cycle track at the *Malá Chuchle* community was also funded from the OPPK in 2008. The costs were CZK 7.7 mil., the EU subsidy drawn from the *OPPK* project was CZK 6.6 mil.

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Laurová


Krejcárek


Prosek


Radlická

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