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

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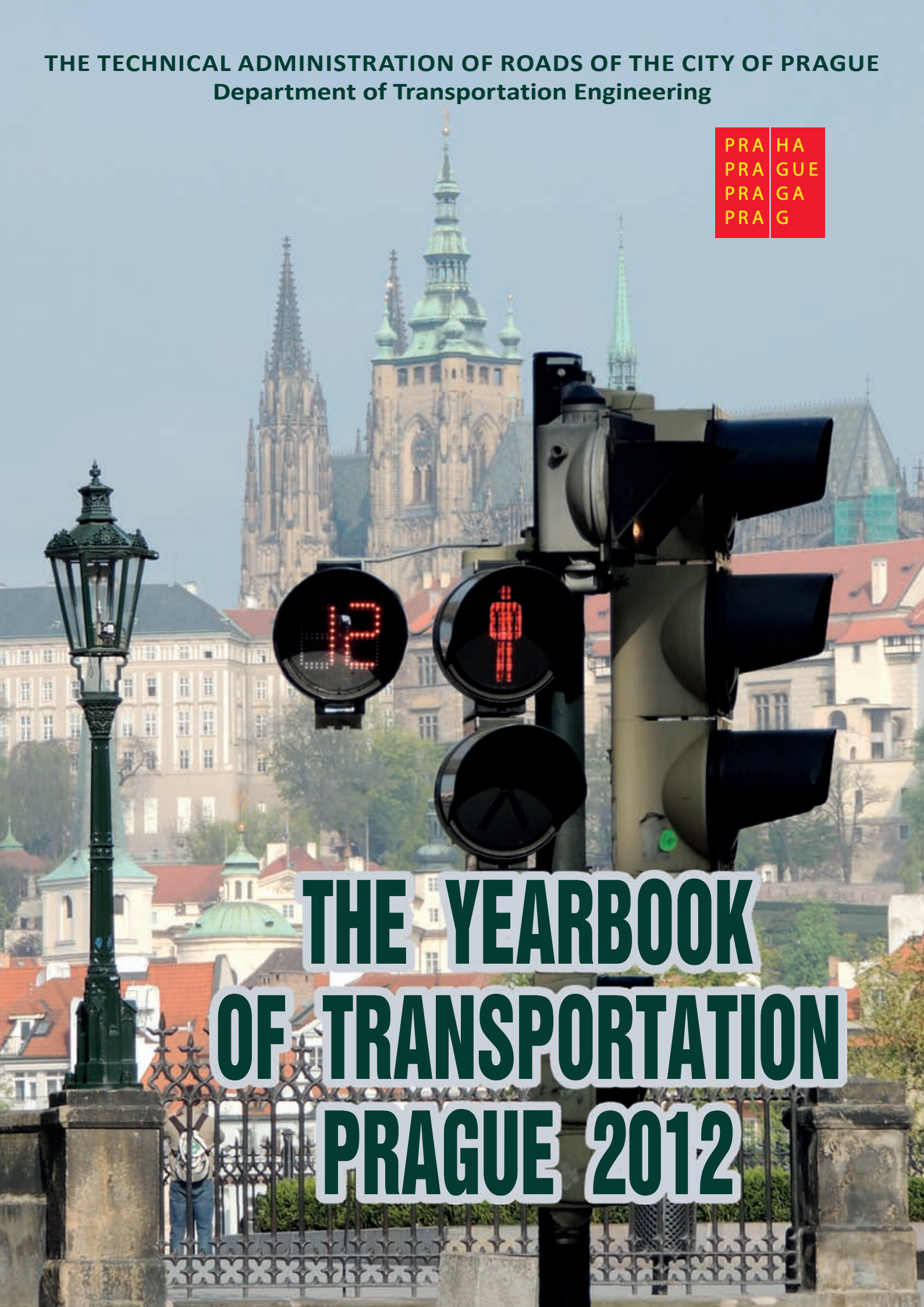
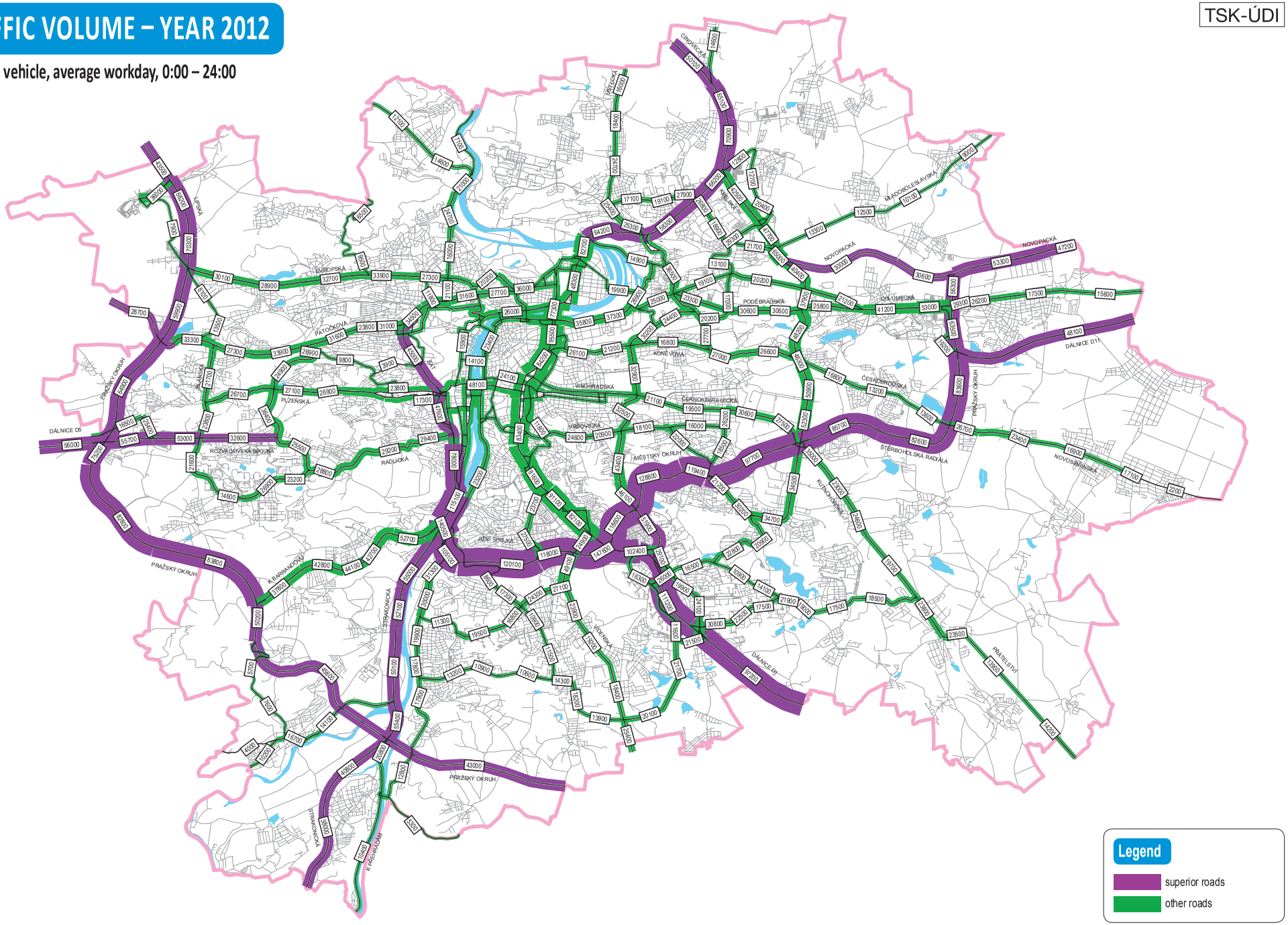


THE YEARBOOK OF TRANSPORTATION PRAGUE 2012

TRAFFIC VOLUME – YEAR 2012

All vehicle, average workday, 0:00 – 24:00

TSK-ÚDI



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

THE YEARBOOK OF TRANSPORTATION PRAGUE 2012

Dear readers,

In order to satisfy your interest in transportation in Prague, the Department of Transportation Engineering at the Technical Administration of Roads of the City of Prague (TSK) has assembled the “2012 Prague Transportation Yearbook”, which is put out every year to inform the professional and lay public about the current state of transportation in Prague and the changes that have taken place over the past year. The Yearbook is the most comprehensive and detailed resource that contains current information on transportation in Prague in the year 2012. The data is drawn from TSK’s own resources, the records of city and state bodies and organisations, and last but not least from information provided by the transportation providers themselves. I hope that the content of the Yearbook will be helpful and useful for your needs.

The feature that most characterised the year 2012 was ongoing stagnation of the levels of automobile traffic in the city, continuing the trend of the previous year. Compared to 2011 the number of vehicle kilometres travelled by public transport vehicles also fell, although the volume of passengers transported increased. The data in the yearbook show that the relations between Prague and is closest surroundings continued to intensify. The number of passengers on suburban train and bus lines under Prague Integrated Public Transport grew, as did the number of personal cars crossing the boundaries of the city.

An important development in 2012 was the extensive overhaul of the tram and bus routes within the city, which affected 17 tram lines and 83 bus lines. The main advantage of this move was the creation of new arterial tram lines and “metrobuses” which run at shorter intervals.

Despite the City of Prague budget being reduced by nearly 2 % over the preceding year, the planned expenditures for transportation were successfully protected, and in fact increased. Thanks to auspicious circumstances (e.g. changes to public transport fares in mid-2010 and the mild winter in 2011/2012), the volume of current expenditures in the municipal budget could be reduced while increasing the volume of capital expenditures. In 2012 this particularly meant continuing in the construction of the most important and demanding transportation works – the extension of the A metro line, the north part of the City Ring Road, and completing the interchange at the intersection of Kbelská and Veselská. To a lesser extent, needed refurbishing of roads and tram tracks was carried out, which not only contributed to increasing the quality of transportation and the comfort and satisfaction of passengers, but also helped the surrounding environment, for example by lowering noise levels. Construction of further cycle tracks did not cease and, thanks to contributions from municipal districts, works under the “pavement programme” also continued.

Another boon for transportation in the city in 2012 was the continuation of work on projects under the Operational Programme Transportation, which is financed with contributions from EU funds and focuses on traffic management, telematics and information systems, and modernising and expanding the Prague metro. Mass transit users for example appreciate the information displayed at public transport stops on when the next connections will be arriving, while automobile drivers can use the new locations of electronic information boards on roads, which provide information on estimated travel times, the fullness of nearby parking lots and emergency conditions.

Serving to inform residents and visitors are the websites of the City of Prague, TSK, ROPID, DPP, the Traffic Information Centre and the DPP Information Centres. The publications put out by these organisations are also important, this yearbook in particular. I trust that its content will satisfy you.

In Prague, 10 April 2013

Josef Nosek
Deputy Mayor of the City of Prague

Dear readers,

As we do every year, we present you with this Transportation Yearbook, which we have put together to inform you on what took place in Prague's transportation in 2012. In doing so we used the current data and resources gathered through our own activities, as well as other data kept by the relevant municipal and state institutions and organisations providing transport in Prague necessary to give the Yearbook the requisite comprehensiveness. These organisations are listed at the end of the Yearbook and we thank them for the data they provided.

For ease of browsing we have maintained the same structure in the 2012 Transportation Yearbook as in the previous yearbook in 2011, which makes it possible to easily follow changes and compare the 2012 data with that of previous years. The development trends for selected indicators are evident from the tables and graphs in the yearbook. Unfortunately the development graph for one of the most important transportation indicators (vehicle ownership in Prague) has been tainted by changes in the method of calculating registered vehicles, which were implemented once in 2003 and again last year. We therefore recommend taking this fact into consideration when using the vehicle ownership data.

In comparing the volume of transportation in 2012 and 2011 it is evident that there was an increase in passenger mass transit, which was recorded for all forms of transportation (with the exception of water transportation including ferries) as well as in bicycle traffic. Stagnation continued in automobile traffic. There was a marked drop in the number of transit passengers in air travel.

Stagnation also continued in 2012 in the overall volume of traffic on the city's roadways as measured in vehicle-kilometres travelled (drop of approximately 0.5 % in automobile transport and 3 % in mass transit). At the same time however the volume of personal car and bus traffic at the road entry points to the city rose slightly.

Following the successful completion of the project "Urban Road Traffic Management and Regulation System for the City of Prague", TSK continued working on a further programme under the Operational Programme Transportation in 2012 – "Increasing Road Safety in the City of Prague". The benefits of this programme are most evident in the areas of traffic management and providing traffic information. For instance, in 2012 work began on installing traffic information devices and integrating them into the management system at the main Urban Traffic Control Centre. Further expansion of transportation telematics continued with work on the comprehensive monitoring system, weighing freight vehicles while in motion and providing information on travel times.

The impact of TSK's reduced budget in both current and capital expenditures compared to 2011 was felt in the scope of both investment construction (just under CZK 1 billion drawn in 2012 including contributions from the State Fund for Transportation Infrastructure and municipal districts) and road repairs and maintenance (just over CZK 1 billion spent, again including contributions from SFDI and municipal districts). In repairing road surfaces on heavily used roads, a new asphalt mix entitled Viaphone was used in 2012, which effectively contributed to reducing noise levels. For less heavily used roads, more use was made of extended kerbs at crossings and raised roadbeds at intersections.

In 2012 TSK also performed standard winter maintenance, cleaning and other caretaking activities associated with its role as Prague's road administrator.

You can find further and more detailed information on transportation in Prague in 2012 in the individual chapters of the yearbook. We hope that it will suit your needs and that you will be able to make use of it.

In Prague, 10 April 2013

Ing. Ladislav Pivec
Acting Director of TSK

CONTENT

1 BASIC DATA

1.1 Selected data on the City of Prague as of 31 December 2011

Land area		**496**	**km²**
Number of inhabitants		**1 246 780**	
Total length of road network		**3 966**	**km**
of which	motorways within the city	10	km
	other motor roads	98	km
Number of bridge structures on the road network*		**601**	
of which	bridge structures across the Vltava	27	
	grade separated crossings	223	
	underpasses	122	
Number of road tunnels (total length 8 530 m)		**10**	
Number of motor vehicles		**1 209 952**	
number of personal cars		952 726	
Vehicle ownership			
vehicles per 1 000 inhabitants		970	
Automobile ownership			
personal cars per 1 000 inhabitants		764	
Length of metro network		**59.1**	**km**
Length of tram network		**142.4**	**km**
dedicated track bed		52	%
Length of public transport bus network within Prague		**687**	**km**
Number of traffic signals		**612**	
separate pedestrian crossings		118	
Vehicle kilometres travelled (VKT) on the whole road network			
average workday		21.8	m VKT
annually		7.2	bn VKT
Modal split – motor transport (by number of trips on city territory over the workday)			
public transport		57	%
automobile transport		43	%
Modal split – motor and non-motor transport (by number of trips on city territory over the workday)			
public transport		43	%
automobile transport		33	%
cyclists		1	%
pedestrians		23	%
Number of recorded traffic accidents		**17 795**	
Number of traffic accident injuries		**2 271**	
fatal		26	
serious		236	
minor		2009	
Relative accident rate (number of accidents per 1 million VKT)		**2.5**	

** administered by the Technical Administration of Roads of the City of Prague*

1.2 Comparison of Prague and the Czech Republic

Comparison by area, population and level of vehicle and car ownership

		Prague	Czech Rep.	Prague/CZ (%)
Land area (km²)		496	78 864	0.6
Population (in millions)		1.247	10.516	11.8
	- of which economically active (mil.)	0.649	4.920	13.2
Number of motor vehicles (in thousands)		1 210	6 447	17.9
	- of which personal cars (thousands)	953	4 723	20.2
Vehicle ownership	- motor vehicles per 1 000 persons	970	613	–
	- persons per 1 motor vehicle	1.0	1.6	–
Car ownership	- personal cars per 1 000 persons	764	449	–
	- persons per 1 personal car	1.3	2.2	–

Comparison of vehicle kilometres in the years 1990 – 2012 (millions of VKT/avg. workday, 0:00-24:00)

Year	Prague*	Czech Republic+
1990	7.3	80.9
2000	16.6	131.2
2010	22.2	140.9
2011	21.9	144.5
2012	**21.8**	**145.2****
Index 2012/1990 (%)	298.6	179.4**
Index 2012/2011 (%)	99.4	100.5**

** whole road network ** preliminary data + motorways and class 1, 2 and 3 roads, including segments within Prague*

Comparison of number of registered vehicles in 1961 – 2012

Year	Prague					Czech Republic (up until 1971 Czechoslovakia)				
	Pop.	Motor vehicles		Personal cars		Pop.	Motor vehicles		Personal cars	
	(000s)	total	%	total	%	(000s)	total	%	total	%
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 %
2000	1 181	746 832	174 %	620 663	185 %	10 267	5 230 846	129 %	3 720 316	154 %
2010	1 257	928 769	217 %	699 630	208 %	10 533	6 036 576	149 %	4 494 425	186 %
2011	1 241	948 872	221 %	722 343	215 %	10 504	6 138 551	152 %	4 576 574	190 %
2012	**1 247**	**1 209 952**	**282 %**	**952 726**	**284 %**	**10 516**	**6 446 857**	**160 %**	**4 723 150**	**196 %**

100 % = 1990

In explanation of the data for Prague for 2012, the administrator of the data (Prague City Hall Department of Transport Administration) states the following: Since 9 July 2012 a new central vehicle registry (CVR) has been in operation and the number of vehicles has been calculated in a completely different manner.

The data for the Czech Republic for 2012 are as of the date 8 February 2013, when the new central vehicle registry was made accessible (data is administered by the Ministry of Transport, Department for Road Vehicles).

2 AUTOMOBILE TRANSPORT

2.1 Development of vehicle and car ownership

The total number of motor vehicles registered within Prague increased dramatically up until 1999, after which the growth slowed. As of the end of 2012 there was one registered personal car per 1.3 inhabitants.

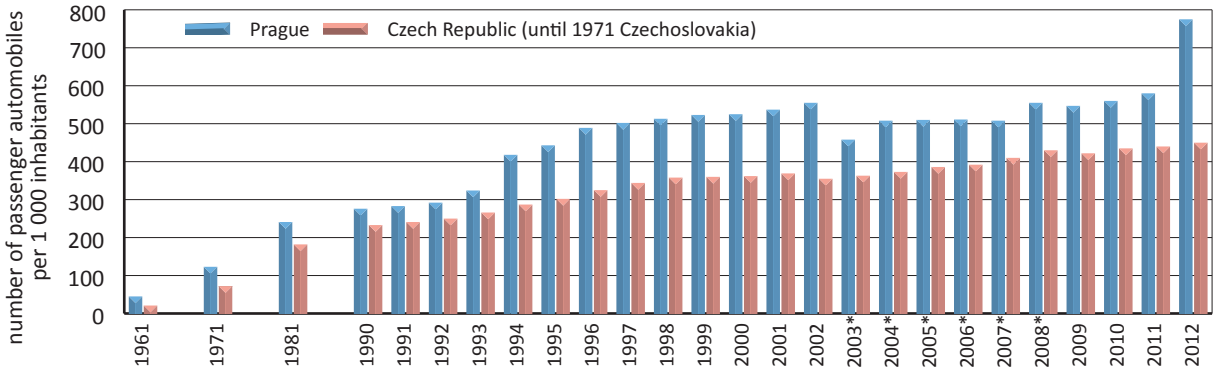
Degree of vehicle and car ownership

Year	Prague				Czech Republic (until 1971 Czechoslovakia)			
	Motor vehicles		Personal cars		Motor vehicles		Personal cars	
	vehicles per 1 000 ppl	persons per 1 vehicle	cars per 1 000 ppl	ppl per 1 car	vehicles per 1 000 ppl	persons per 1 vehicle	cars per 1 000 ppl	ppl 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
2000	632	1.6	525	1.9	510	2.0	362	2.8
2010	739	1.4	557	1.8	573	1.7	427	2.3
2011	765	1.3	582	1.7	584	1.7	436	2.3
2012	**970**	**1.0**	**764**	**1.3**	**613**	**1.6**	**449**	**2.2**

Liberecká street

Legerova street

Development of car ownsership



** Data for Prague for 2003 – 2008 affected by an error in the registry as explained in the note on the following page.*

The data for Prague for the years 2003 – 2008 are distorted by an error in the registry. The administrator of the Prague data, which is the Prague City Hall Department of Transport Administration, states the following: Up until 2001, data on the number of registered motor vehicles in Prague and the Czech Republic were taken from the Police of the Czech Republic. Since 2002 they have been taken from the new keepers of this data – for Prague the Prague City Hall Department of Transport Administration and for the Czech Republic the Transport Ministry's Department of Transport Administration. From October 2003 until March 2008, the Prague administrator of these data used a different algorithm for calculating the number of vehicles operated, producing a result of 130 000 vehicles less than in the preceding period. As of 31 March 2008 a new version of the road vehicle registry program was installed, returning the calculation of vehicles to the original values from before 6 October 2003.

In explanation of the data for Prague for 2012, the administrator of this data (Prague City Hall Department of Transport Administration) states the following: Since 9 July 2012 a new central vehicle registry (CVR) has been in operation and the number of vehicles has been calculated in a completely different manner.

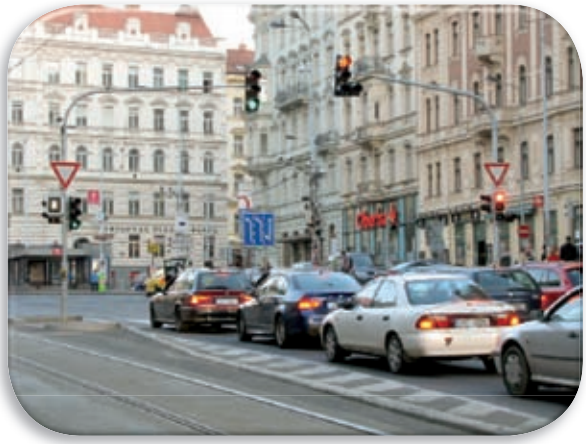
2.2 Volume of automobile traffic on workdays

The City of Prague occupies a unique position in automobile transportation in the Czech Republic, which manifests in the exceptionally high volume and vehicle kilometres travelled in comparison with other Czech cities or with motorways and roads in rural areas.

The base aggregated indicator for the development of automobile traffic in Prague is traffic volume (vehicle kilometres travelled) on the whole road network, which has been monitored since 1978. All data on traffic volume apply to the period from 0:00-24:00 of an average workday. All data on automobile traffic excludes municipal public transport buses.

Alongside this data, another method of determining trends in Prague's automobile traffic is "cordon monitoring", meaning periodic traffic counts at sites that form a connected cordon of important entrance roads into the designated zone. The development of inner-city traffic is monitored at the "central cordon", while peripheral traffic is monitored at the "outer cordon". Time data for both cordons are available back to 1961.

Intersection of Plynární and Argentiská



Intersection of Ječná and Sokolská

The traffic counts performed reveal that the annual growth in automobile traffic recorded within the city in the period following 1990 practically ceased in 2008 and 2009. In 2011 and 2012 numbers fell slightly.

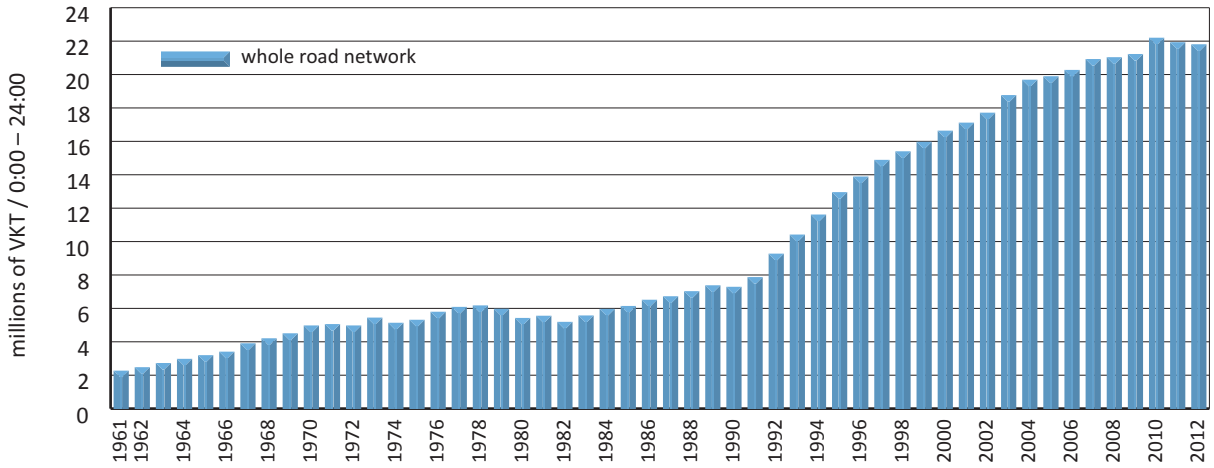
Overall, automobile traffic within the City of Prague, as measured by vehicle kilometres travelled on the whole road network, fell by 0.6 % on average in 2012 compared to the previous year. Broken down by vehicle type, personal car traffic fell 0.5 % and bus and freight traffic by 2.0 %.

Automobile traffic volume in Prague (whole road network, avg. workday, 0:00-24:00)

Year	Motor vehicles total		Personal cars		Personal cars as percentage of total traffic volume
	millions of VKT	%	millions of 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 %
2000	16.641	228 %	15.131	259 %	91 %
2010	22.205	304 %	20.435	349 %	92 %
2011	21.936	301 %	20.221	346 %	92 %
2012	**21.812**	**299 %**	**20.131**	**344 %**	**92 %**

*100 % = 1990 * Estimate based on traffic volume trends at cordons (traffic volume in Prague only monitored since 1978).*

Development of automobile traffic volume in Prague (whole road network, avg. workday, 0:00 – 24:00)



In the period from 0:00-24:00 of an average workday in 2012, motor vehicles travelled a total of 21.812 million vehicle kilometres on the territory of Prague. Of this amount, personal cars made up 20.131 million vehicle kilometres, or 92 %. Compared with the preceding year, this means that motor vehicles in Prague travelled 124 000 vehicle kilometres a day less in 2012.

Compared to 1990, the operation of motor vehicles in the city had increased by 199 % in 2012, meaning it had tripled. Compared to the growth in automobile traffic on the motorways and roads of the whole Czech Republic, the growth in Prague was approximately 1.7 times higher over this period.

Tempo of growth in automobile traffic volume in Prague after 1981

Years	Average annual increase/decrease	Years	Average annual increase/decrease
1981 – 1990	year-on-year +192 000 VKT/day	2006 – 2010	year-on-year +461 000 VKT/day
1991 – 1995	year-on-year +1 134 000 VKT/day	2011	year-on-year -269 000 VKT/day
1996 – 2000	year-on-year +736 000 VKT/day	2012	year-on-year -124 000 VKT/day
2001 – 2005	year-on-year +652 000 VKT/day		

In the greater city centre, based on the counts made at the central cordon, which measures two-way traffic volume at the entry points to the greater city centre, delineated roughly at Petřín in the west, Letná in the north, Riegrovy sady in the east and Vyšehrad in the south (the Strahov and Mrázovka tunnels lie outside the central cordon), automobile traffic dropped by 3.6 % compared to the previous year.

Over the 24 hours of an average workday, 293 000 vehicles drove into the greater city centre, of which 281 000 were personal cars. In comparison with 1990 this was roughly 22 % more vehicles. All growth can be attributed to personal cars, as the number of freight vehicles and buses entering the central area has fallen by nearly two thirds since 1990 (-60 %). The volume of automobile traffic in the greater city centre increased every year up until 1998, when it reached its historic peak. Since then it has fallen, with slight fluctuations. Since the year 2000 automobile traffic in the greater city centre has dropped by 15 %, roughly to the level of 1993.

In the middle zone of the city, traffic increased constantly and markedly in the years 1990 – 2007, increasing as much as three to fourfold over 1990 levels on some roads. In 2012 levels fluctuated in the range of ±1 % compared to the previous year.

In the outer zone of the city (based on counts done at the outer cordon, which expresses the two-way volume of traffic at the entrances from the main arterial roads and motorways into the continually settled area of the city), the volume of automobile traffic stagnated in 2012 compared to 2011 (±0 %). Over the 24 hours of an average workday, 291 000 vehicles entered Prague across the boundary of the outer cordon, of which 259 000 were personal cars.

New Kbelská-Veselská interchange

Kbelská street

Automobile traffic in the outer zone of the city rose steadily from 1990 until 2008. The year 2009 saw the first slight drop since 1991 (presumably under the influence of the economic crisis), of 1.2 %, with a return to slight growth in 2010 and 2011 and stagnation in 2012. In comparison with the base year of 1990, 3.8 times more vehicles (+277 %) entered Prague daily from its surroundings (from the suburban zone, from other parts of the country and from abroad) in 2012. Personal cars played the key role in this growth, their numbers having increased more than 4.6 times (+366 %).

Road segments with heaviest traffic on Prague road network in 2012

	Segment	Total vehicles per day (0:00-24:00)
1.	Jižní spojka between 5. května and Vídeňská (1)*	148 000
2.	Barrandovský most (2)*	141 000
3.	Jižní spojka between Chodovská and V Korytech (3)*	129 000
4.	Jižní spojka between Braník and Sulická (4)*	120 000
5.	Strakonická between Dobříšská and Barrandovský most (5)*	115 000

** order in 2011*

The 2012 data on traffic volumes on individual segments of the monitored City of Prague road network are available in table form on TSK's website under the section "Pro odborníky", then "Intenzity dopravy".

Grade-separated intersections with heaviest traffic on Prague road network in 2012

	Intersection	Total vehicles per day (0:00-24:00) at intersection
1.	5. května – Jižní spojka (1)*	226 000
2.	Strakonická – Barrandovský most (2)*	183 000
3.	Jižní spojka – Chodovská (4)*	173 000
4.	Jižní spojka – Vídeňská (3)*	170 000
5.	Jižní spojka – Průmyslová (5)*	158 000

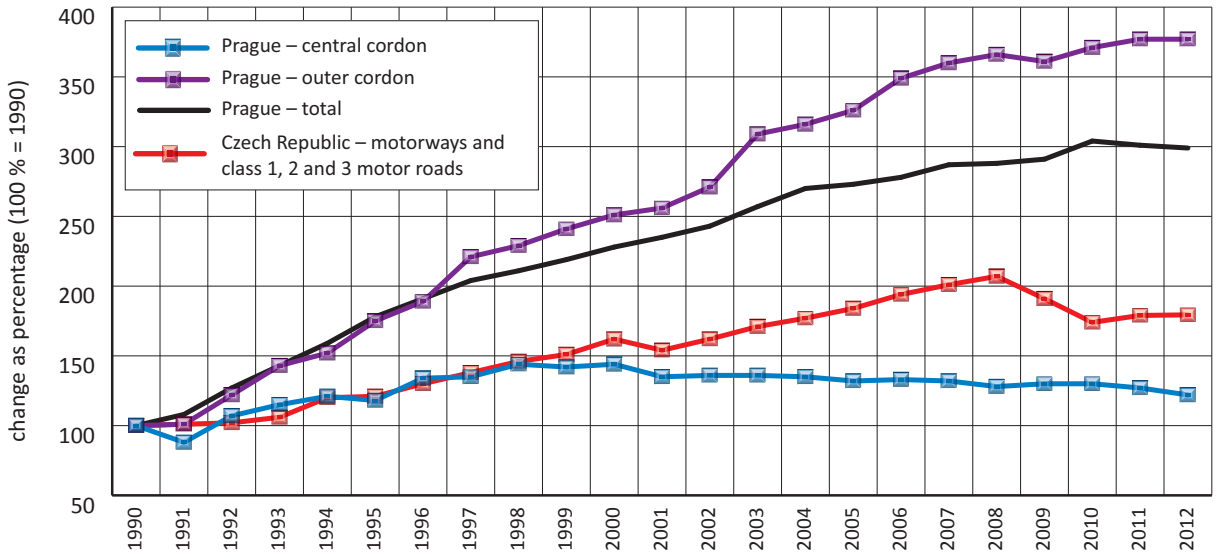
** order in 2011*

At-grade intersections with heaviest traffic on Prague road network in 2012

	Intersection	Total vehicles per day (0:00-24:00) at intersection
1.	Poděbradská – Kbelská (1)*	73 000
2.	Černokostelecká – Průmyslová (2)*	68 000
3.	Anglická – Legerova (3)*	68 000
4.	Argentinská – Plynární (4)*	66 000
5.	Žitná – Mezibranská (6)*	64 000

** order in 2011*

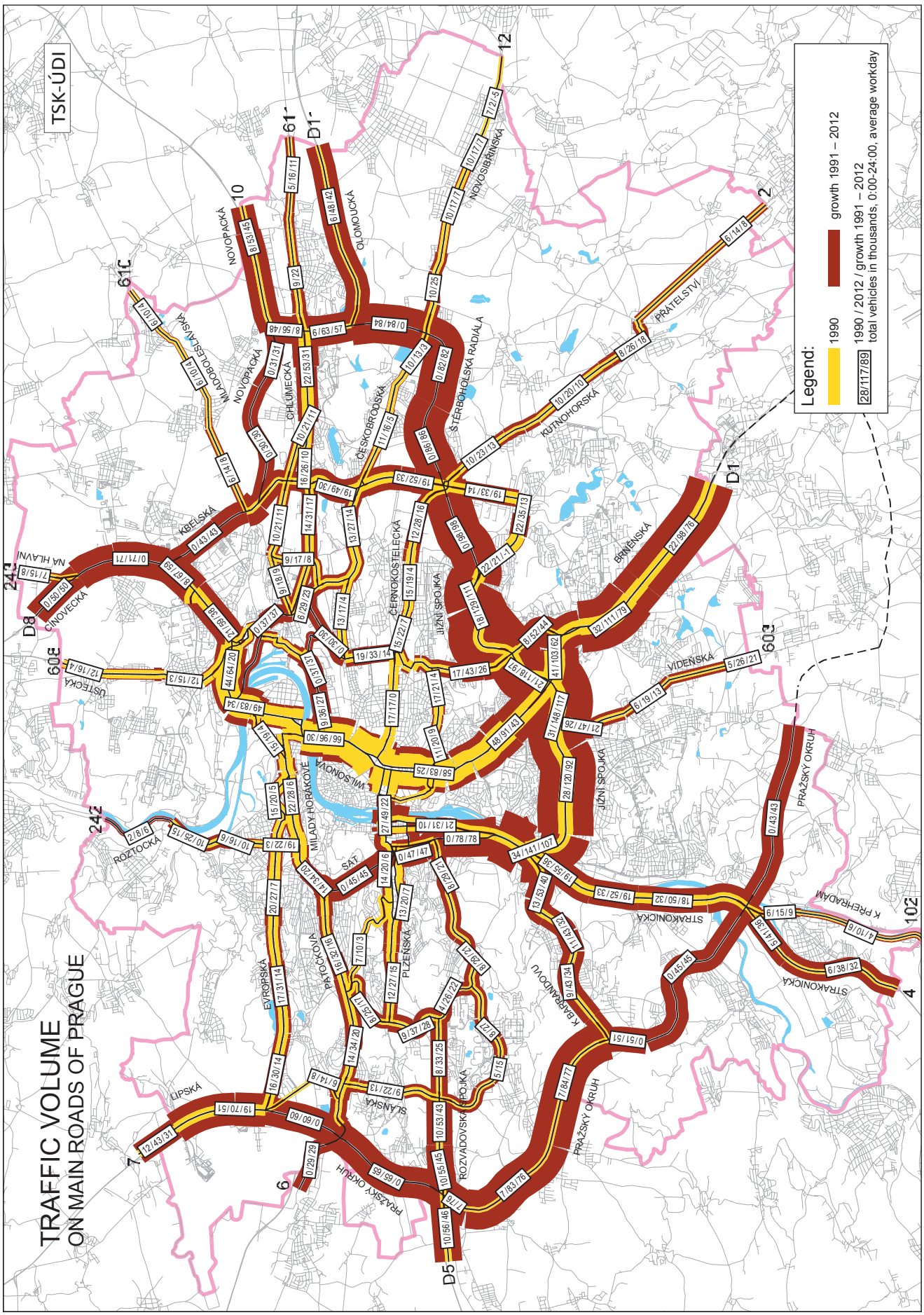
Development of traffic volume in Prague and Czech Republic (average workday)



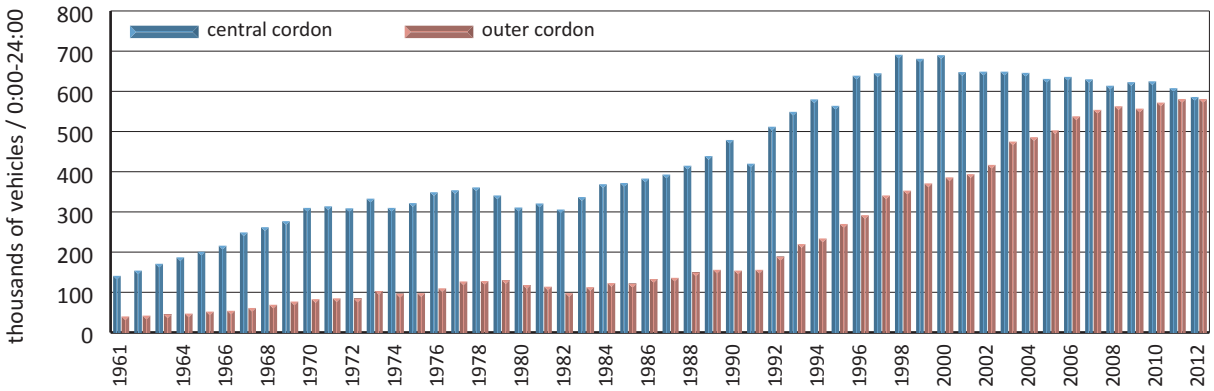
Traffic volume at central and outer cordons in Prague (workday, both directions total, 0:00-24:00)

Year	Central cordon						Outer cordon					
	Passenger		Freight		Vehicles total		Passenger		Freight		Vehicles total	
	number	%	number	%	number	%	number	%	number	%	number	%
1961	76 000	18 %	35 000	81 %	141 000	29 %	15 000	14 %	15 000	41 %	40 000	26 %
1971	265 000	62 %	42 000	98 %	314 000	66 %	56 000	50 %	25 000	68 %	85 000	55 %
1981	272 000	64 %	43 000	100 %	321 000	67 %	74 000	67 %	34 000	92 %	114 000	74 %
1990	424 000	100 %	43 000	100 %	479 000	100 %	111 000	100 %	37 000	100 %	154 000	100 %
2000	653 000	154 %	25 000	58 %	690 000	144 %	334 000	301 %	47 000	127 %	386 000	251 %
2010	598 000	141 %	14 000	33 %	625 000	130 %	505 000	455 %	58 000	157 %	572 000	371 %
2011	582 000	137 %	13 000	30 %	608 000	127 %	517 000	466 %	54 000	146 %	581 000	377 %
2012	**562 000**	**133 %**	**17 000**	**40 %**	**586 000**	**122 %**	**518 000**	**467 %**	**54 000**	**146 %**	**581 000**	**377 %**

100 % = 1990


TRAFFIC VOLUME
ON MAIN ROADS OF PRAGUE
TSK-ÚDI
Legend:
1990
growth 1991 – 2012
28/117/89
1990 / 2012 / growth 1991 – 2012
total vehicles in thousands, 0:00-24:00, average workday
D1
D5
D8
NOVOPACKÁ
OLOMOUCKÁ
NOVOSIBŘINSKÁ
PŘÁTELSTVÍ
KUTNOHORSKÁ
ŠTĚRBOHOLSKÁ RADIÁLA
ČESKOBRODSKÁ
CHLUMECKÁ
MLADOBOLESLAVSKÁ
KBELSKÁ
NA HLÁVNÍ
ČÍNOVECKÁ
ÚSTECKÁ
ČERNOKOSTELECKÁ
JIŽNÍ SPOJKA
BRNĚNSKÁ
VÍDEŇSKÁ
MILADY HORÁKOVÉ
WILSONOVA
ROZTOCKÁ
SAT
EVROPSKÁ
PATOCKOVA
PLZEŇSKÁ
SLÁNSKÁ
LIPSKÁ
ROZVADOVSKÁ SPOJKA
PRAŽSKÝ OKRUH
K BARRANDOVU
STRAKONICKÁ
K PŘEHRADĚ

Development of traffic volume at cordons in Prague (workday, both directions total, 0:00-24:00)



Average occupancy of personal cars (persons per vehicle)

Year	Centre (central cordon)	Outer zone (outer cordon)	Prague total
1990	1.57	1.90	1.71
2000	1.37	1.49	1.44
2010	1.30	1.30	1.30
2011	1.30	1.30	1.30
2012	**1.30**	**1.30**	**1.30**

2.3 Vehicle mode share and temporal traffic patterns

The mode share of traffic is dominated by personal cars. In terms of territorial breakdown, the proportion of personal vehicles increases toward the centre of the city. In 2012, this rate was 96 % at the central cordon, 89 % at the outer cordon and 92 % on average for the whole network.

Mode share 1961 – 2011 (workday, both directions, 0:00-24:00)

Year	Central cordon				Outer cordon			
	Personal vehicles	Motorcycles	Freight vehicles	Buses (excl. pub. trans.)	Personal vehicles	Motorcycles	Freight vehicles	Buses (excl. pub. trans.)
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 %
2000	94.7 %	0.6 %	3.7 %	1.0 %	86.5 %	0.2 %	12.1 %	1.2 %
2010	95.7 %	1.0 %	2.4 %	0.9 %	88.4 %	0.3 %	10.2 %	1.1 %
2011	95.7 %	1.1 %	2.2 %	1.0 %	89.1 %	0.6 %	9.2 %	1.1 %
2012	**95.8 %**	**1.1 %**	**2.1 %**	**1.0 %**	**89.1 %**	**0.5 %**	**9.3 %**	**1.1 %**

Note: The mode share of cyclists in the overall number of vehicles in traffic ranges from 0.1 – 0.5 %.

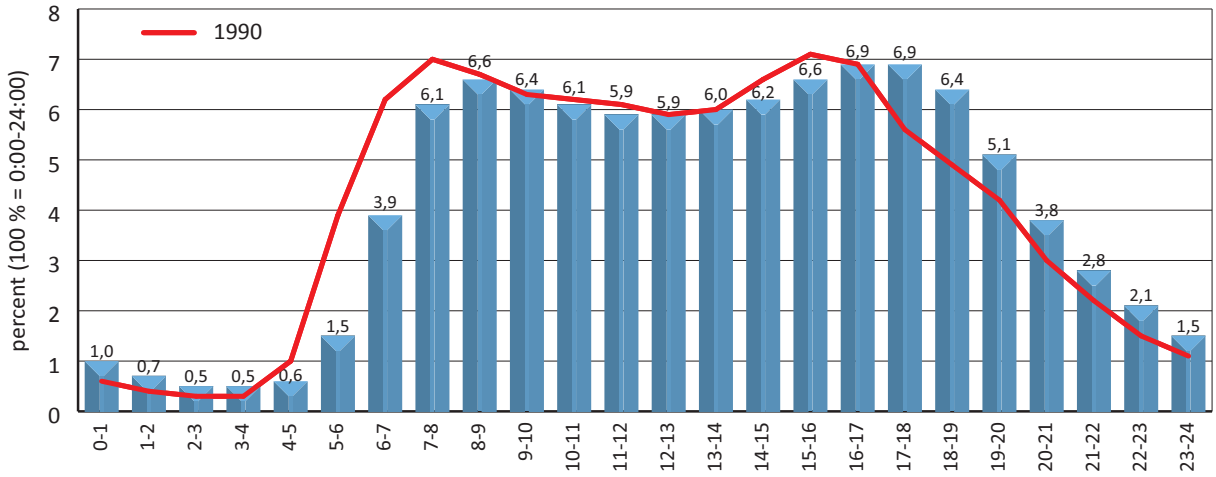
Basic characteristics of daily variation of workday traffic volume in Prague:·

- The majority of traffic volume for the whole day takes place during the daytime period (74 % for 6:00-18:00), with the period 6:00-22:00 accounting for approx. 92 %.
- After 18:00, traffic volume begins to drop off steeply and more or less uniformly until midnight.
- The morning peak is at 8:00-9:00; the afternoon peak is 16:00-17:00 and 17:00-18:00.
- The volume of the morning peak hour makes up 6.6 % of the total; the afternoon peak accounts for 6.9 % (100 % = 0:00-24:00).
- The difference between the peak hours and the noon sag is not very pronounced. The noon hour (12:00-13:00) represents 5.9 % of the whole day.

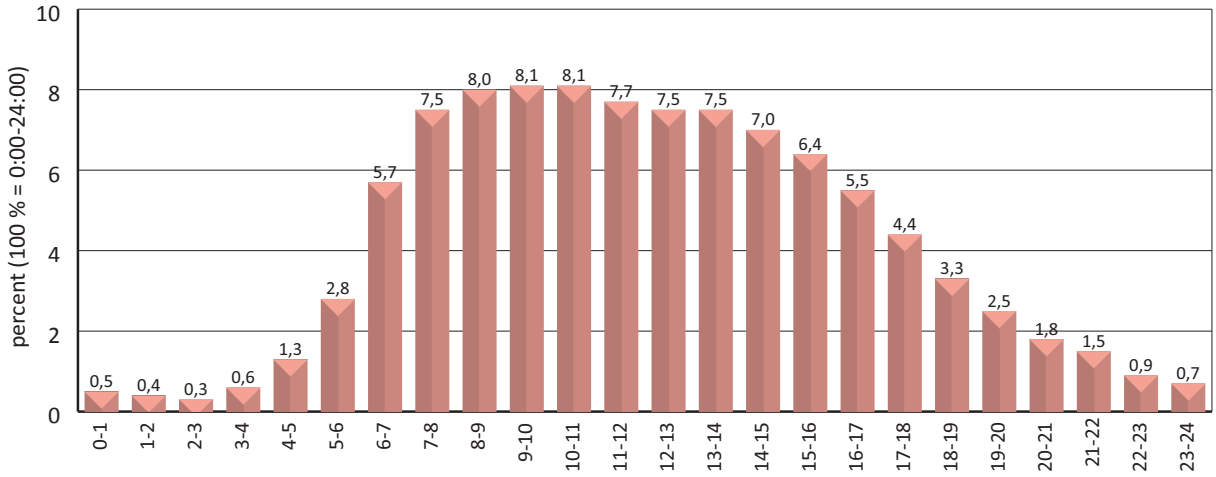
Significant changes to temporal traffic patterns in Prague·

- Daily variation – the volume of the morning peak hour has fallen from its original 8 – 9 % to 6.6 % and has shifted from 6:00-7:00 to 8:00-9:00. The difference between the peak hours and the morning lull period has been reduced. The afternoon peak hours are now 16:00-18:00 and are higher (6.9 %) than the morning peak (6.6 %).
- Weekly variation – The volume for Friday, which used to be higher than other workdays, has fallen to the level of Monday through Thursday.
- Yearly variation – The share of January and February has increased in relation to the average for the year.

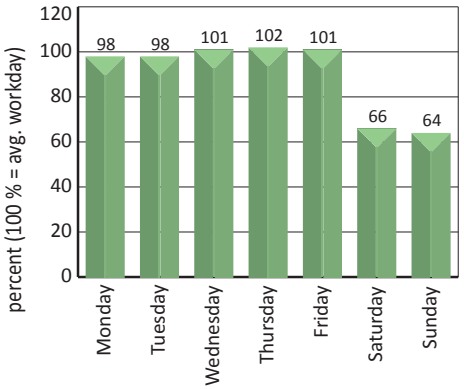
Daily variation of total automobile traffic (2012, Prague, whole network, workday)



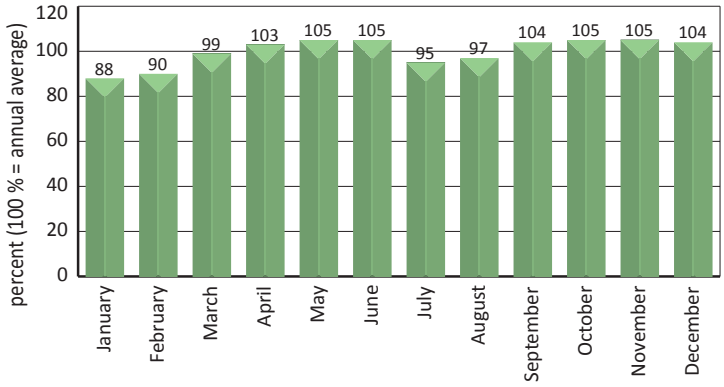
Daily variation of freight vehicles and buses, not including public transport (2012, Prague, whole network, workday)



Weekly variation (Prague, whole network, total vehicles)



Yearly variation (Prague, whole network, total vehicles)



3 PUBLIC TRANSPORT

3.1 Basic information on Prague Integrated Public Transport (PID)

Prague Integrated Public Transport (PID) serves the whole City of Prague and part of the adjacent territory of the Central Bohemian Region. PID includes the metro, trams, urban and suburban bus lines, railways, ferries and the Petřín funicular. PID is coordinated by the publicly subsidised Regional Organiser of Prague Integrated Transport (ROPID), which was founded by the City of Prague in 1993.

The integrated system allows passengers to use a single ticket regardless of the mode of transport, thereby giving public transport a competitive edge over individual transport. On 1 June 1996 a zone-based fare system was introduced, and since then there has been steady growth in the scope of suburban bus routes, the territorial reach of the service, the number of municipalities included, and the number of tariff zones.

Development of PID system (suburban bus lines, municipalities served and railway stations)

Year	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2011	2012
Number of PID suburban bus lines	2	6	31	48	89	130	147	158	152	150	155	155
Number of PID buses serving municipalities	2	7	55	83	159	251	299	299	299	299	299	308
Number of railway stations and stops under PID	23	43	181	181	190	219	211	207	220	222	222	222*

** Of this number, 108 stations and stops are completely integrated into PID (equipped with ticket-stamping machines).*

The City of Prague and an array of other municipalities contribute to the operating costs for PID lines, as does the Central Bohemian Region. Some funding is also provided by other entities (shopping centres, large businesses and municipal districts).

A model 15T tram at the Želivského stop

A bus on the 197 line on Durychova street

Basic data on volume of Prague Integrated Public Transport

Year	2005	2006	2007	2008	2009	2010	2011	2012
Traffic volume of metro, trams and PID urban bus lines (mil. of VKT/year)	156.7	164.7	165.0	170.0	168.5	171.8	168.8	**165.4**
Traffic volume of PID suburban bus lines (mil. of VKT/year)	22.2	22.4	23.6	24.3	24.6	25.1	25.9	**26.9**
Traffic volume of PID railway lines * (mil. of VKT/year)	–	–	–	–	–	13.2	13.9	**14.3**

** No data available before 2010.*

Number of lines operated under PID

Mode of transport	Lines	Nature and numbering of lines
Metro	**3**	A, B and C
Tram	**30**	21 day lines (numbered 1-26), 9 night lines (numbered 51-59)
Urban buses with route only within City of Prague boundaries	**157**	120 day lines (numbered 100-297), 15 night lines (numbered 501-515), 20 school lines (numbered 551-571), 1 line for persons with reduced mobility (H1) and the AE line
Suburban buses with route between city and region	**91**	81 day lines (numbered 301-398), 10 night lines (numbered 601-610)
Regional buses with route only in region	**65**	64 day lines (numbered 401-495), 1 seasonal cyclebus
Railway 26 routes under PID, 11 routes entering the territory of Prague (incl. ML)	**33**	13 S lines btw. Prague and region (S1-S9, S20, S41, S65, S80), 3 R lines btw. Prague and region (R3, R4, R5), 14 S lines in region only (S11-S88), 3 seasonal lines (Prague and Podlipansko Motor Trains and a cycletrain)
Ferries	**5**	Lines P1, P2, P3, P5 (seasonal), P6
Funicular	**1**	Újezd-Petřín Funicular

The total number of carriers taking part in the provision of PID is 17. The primary carriers are the Prague Public Transport Company (Dopravní podnik hlavního města Prahy, a. s. – DPP), which operates the metro, trams, funicular and most of the bus lines within the city, and Czech Railways (České dráhy, a. s. – ČD), which provides rail transport.

A further 12 private carriers operate urban, suburban and regional bus lines under PID. Two companies operate ferries and one the Prague and Podlipansko Motor Trains.

At the end of 2012, the most bus lines within the city (134) were operated by the Prague Public Transport Company. Within the Central Bohemian Region the most lines were operated by Veolia Transport Praha s. r. o. (51 lines) and ČSAD Střední Čechy, a. s. (31 lines).

A train on the S9 line at Praha hlavní nádraží

Operators of PID bus lines within the city and region*

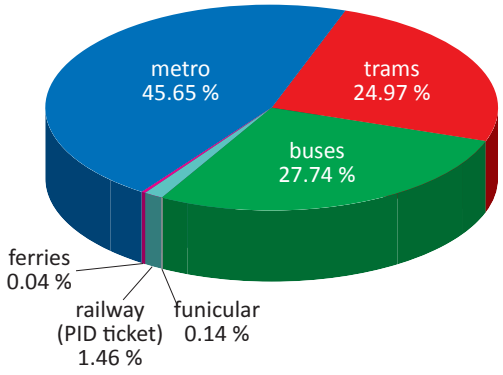
Operator	Urban lines	Suburban and regional lines
Prague Public Transport Company	134 (85 %)	16 (10 %)
Other operators	23 (15 %)	140 (90 %)
TOTAL	157 (100 %)	156 (100 %)

** Numbers include school lines, the AE line and lines for persons with reduced mobility.*

PID ridership and share of total passengers within the City of Prague for 2012

Mode of transport (operator)	Persons/year
Metro (DPP)	589 165 000
Tram (DPP)	322 347 000
Bus (DPP)	303 159 000
Bus (private carriers)*	54 934 580
Railway (ČD with PID ticket)*	18 863 000
Funicular (DPP)*	1 857 990
Ferry (private carriers)*	466 920
TOTAL	**1 290 793 490**

** Data from ridership survey, other data are estimates.*



Composite data on PID operated by Prague Public Transport Company (DPP) in 2012				
	Metro	**Trams**	**Buses**	**TOTAL**
Operating length of network within Prague (km)	59.1	142.4	687.0	**888.5**
Percentage of network on dedicated track bed (%)	100 %	52 %	–	–
Operating length outside Prague (km)	–	–	142.0	**142.0**
Average distance between stations and stops (m)	1 094	534	628	–
Average travelling speed (km/h)	35.6	18.6	26.0	–
Annual VKT in Prague (in thousands)	54 285	47 041	63 204	**164 530**
Annual VKT outside Prague (in thousands)	–	–	3 205	**3 205**
Expenses per operational vehicle-km* (CZK)	106.50	59.96	52.51	
Passengers transported annually in Prague (000s)	589 165	324 205**	303 159	**1 216 529**
Passengers transported annually outside Prague (000s)	–	–	12 354	**12 354**
Number of DPP employees	**10 595**			
Fare revenues (CZK millions)	**4 508**			
Total operating costs of DPP (CZK millions)	**17 100**			
Revenue to cost ratio for DPP (%)	**26.4**			

* *The calculation of the cost of 1 operational vehicle-km is derived from the costs directly associated with the service. It does not include the costs for building and maintaining infrastructure.*

** *includes the funicular to Petřín*

Added connection on 3 line at Florenc stop

Midibus line 297 at Želivského stop

Development of basic characteristics of PID operated by DPP

Year	Operating length of network (km)+			Average travelling speed (km/h)			Number of vehicles deployed (workday morning peak/lull)		
	metro	**tram**	**bus**	**metro**	**tram**	**bus**	**metro**	**tram**	**bus**
1981	20.0	122.9	545.0	33.3	15.7	23.8	150/85	750/459	871/317
1990	38.5	130.5	607.3	34.6	18.7	23.7	322/158	699/423	918/317
1995	43.6	136.2	695.3	34.9	19.0	23.3	395/190	647/476	957/381
2000	49.8	136.4	812.4*	35.7	18.9	25.2*	345/180	676/530	968/418
2005	53.7	140.9	810.6*	34.6	18.7	25.9*	405/205	702/557	946/442
2010	59.1	141.6	823.0*	35.5	19.0	26.0*	448/245	665/513	904/505
2011	59.1	142.4	840.0*	35.6	18.6	25.8*	457/244	663/514	923/510
2012	**59.1**	**142.4**	**829.0***	**35.6**	**18.6**	**26.0***	**456/244**	**656/512**	**921/513**

\+ *The operating length is the total length of regularly operated passenger routes. For the metro it is the sum of the track lengths between the centres of the end station waiting platforms, for trams it is measured along the track axis, for buses the street axis.*

* *Including PID suburban lines operated by DPP (with sections also beyond the boundaries of Prague)*

Overview of most important events in PID in 2012	
Month	**Description of event**
January	• PID info centre at station Praha hl. n. expands hours to include weekends
March	• End of prolonged day service of metro lines and connecting surface transport on Friday and Saturday night • New P5 ferry route (Kotevní – Císařská louka – Výtoň)
April	• In cooperation with the company DHL a new 354 line on the route Černý Most – Jirny DHL is introduced and co-financed
June	• Expansion of full integration of S3 and R3 train lines to include the segment Praha-Čakovice – Všetaty • Expansion of PID to Milovice, Poděbrady, Kutná Hora and Uhlířské Janovice • Creation of sixth and seventh PID tariff zones • Expansion of the transport of bicycles on trams
July	• Metro station Národní třída is closed while an administrative centre is built (approx. 2 years)
Sept.	• Creation of new network of "metropolitan" public transport lines in Prague.
October	• Full integration of the train stop Stratov (line S2, track 231)
December	• Tram stop ČSAD Smíchov is made the first tram request stop • Regular, easy-to-remember schedules are introduced on the train lines S8 and S80 (track 210 toward Dobříš/Čerčany)

3.2 Metro

The metro forms the backbone of the public transportation network. During one workday an average of 1 850 train connections are dispatched in the Prague metro, carrying approximately 1 210 000 passengers.

Basic data on the metro network in Prague		
Operator	**Number of lines**	**Operating length**
Prague Public Transport Company	3 (A, B, C)	59.1 km
Number of stations	**Average distance btw. stations**	**Average travelling speed**
57 (transfer stations counted twice)	1 094 m	35.6 km/h
Ridership and share of persons transported in 2012		**Operating time**
589 165 000	45.65 %	daily from approx. 5:00–24:00 (Friday and Saturday 5:00–1:00)*

** extended service cancelled 4 March 2012*

M1 train at the station Hlavní nádraží

An 81 – 71M train at the station Strašnická

Barrier-free access via passenger elevator, stair lift platform or direct barrier-free entrance from pedestrian pathways (Vyšehrad station) is possible at 34 of the 57 stations on the Prague metro network (60 %). Barrier-free transfer between lines is possible at the stations Muzeum and Florenc.

Metro stations with barrier-free access in Prague

A line (5 stations of 13)	B line* (14 stations of 24)	C line (15 stations of 20)
Dejvická, Muzeum, Strašnická, Skalka, Depo Hostivař	Zličín, Stodůlky, Luka, Lužiny, Hůrka, Nové Butovice, Smíchovské nádraží, Národní třída*, Florenc, Vysočanská, Kolbenova, Hloubětín, Rajská zahrada, Černý Most	Letňany, Prosek, Střížkov, Ládví, Kobylisy, Nádraží Holešovice, Vltavská, Florenc, Hlavní nádraží, Muzeum, Vyšehrad, Budějovická, Pankrác, Chodov, Háje

* *Národní třída was closed with its elevator 12 July 2012 for roughly two years (while a multifunctional building is being built above the metro station). Trains pass through without stopping.*

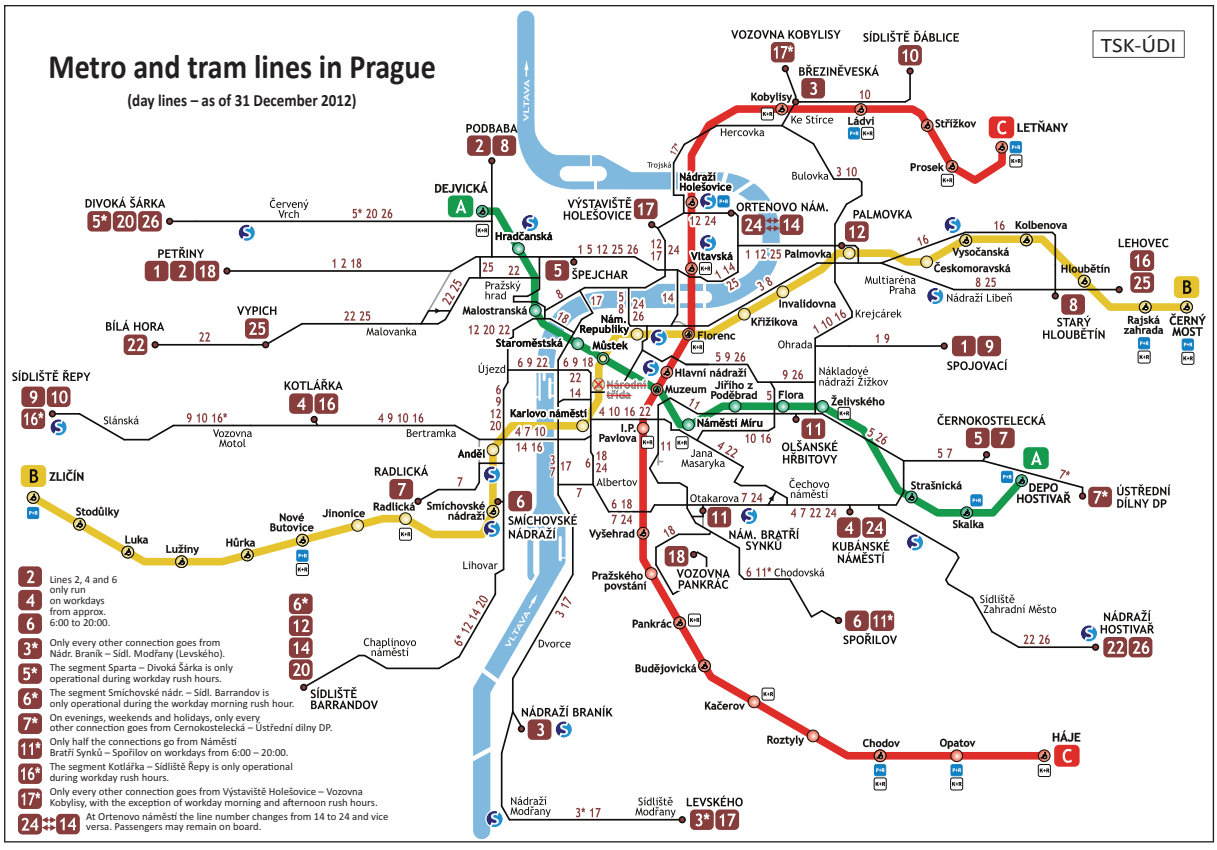
Number of trains designated for individual lines of the Prague metro

A line (type 81 – 71M)	B line (type 81 – 71M)	C line (type M1)
17 trains running at morning peak	38 trains running at morning peak	37 trains running at morning peak
41 trains designated for the line	52 trains designated for the line	53 trains designated for the line

In 2012 there were four several-day interruptions of service on several segments of the metro. The first closure was on the C line between Muzeum – Pražského povstání (6 – 9 April). The other three closures affected the A line. First was the section Můstek – Dejvická (5 – 8 July), followed by Malostranská – Dejvická (28 – 29 July) and finally the whole route Dejvická – Depo Hostivař (28 – 30 September 2012).

The reasons for the closures were repairs to the rail switches at selected stations (Náměstí Míru, Dejvická and I. P. Pavlova), tie replacements and other minor track repairs, as well as work associated with the future connection of the V.A segment to Motol.

Information on alternate transportation during metro closures



3.3 Trams

Trams form a complementary network to the metro. Tram lines have both a radial and a tangential function, also serving as feeders for metro stations. Over the course of one workday an average of 6 470 connections are dispatched on the Prague tram network (including night trams), transporting approximately 1 132 000 passengers.

Basic data on the tram network in Prague

Operator	Number of lines	Operating length
Prague Public Transport Company	30 (21 day, 9 night)	142.4 km (52% dedicated track bed)
Total length of tram lines	**Average distance between stops**	**Average travelling speed**
518 km	534 m	18.6 km/h
Ridership and share of persons transported in 2012		**Operating time**
322 347 000	24.97 %	day 4:00–24:00, night 0:00–4:00

A KT8D5.RN2P tram beside new Korunovační stop

New Karlovo nám. stop heading toward Spálená street

As part of the introduction of "metropolitan" lines in September 2012 there was a massive reorganisation of tram routing. The existing network of arterial lines (lines with intervals half those of regular lines) was expanded to include other lines and on selected high-volume stretches so-called "arterial line tandems" were created. All told 13 daytime lines changes their routes and 4 lines were completely scrapped.

Changes to tram line routes as of 1 September 2012

Description	Lines	Type of line	Lines
Cancelled	15,19,21,36	**Arterial**	3,9,11,17,22
Route change	3,4,5,6,7,8,11,12,14,16,17,24,25	**Arterial tandem**	1+25,5+26,10+16,12+20
No change	1,2,9,10,18,20,22,26	**Other**	2,4,6,7,8,14,18,24

During 2012 several new tram stops were established (Karlovo náměstí toward Spálená street, Korunovační heading toward Hradčanská, Vozovna Hloubětín in both directions by the entrance to the depot and Vozovna Strašnice on Starostrašnická street toward Vinice) and several others renamed (e.g. Výstaviště to Výstaviště Holešovice, Veletržní to Veletržní palác and Sazka Arena to Multiarena Praha). On 8 December 2012 the first request stop on the tram network was created. The stop was ČSAD Smíchov, which has long had a low passenger turnover.

3.4 PID buses

Urban and suburban bus transport is operated within the city as part of PID. Urban bus transport forms a supplementary network to the metro and trams, also providing blanket service in some areas and many important tangential connections, particularly in the outlying areas of the city. Suburban bus transport connects the city with the surrounding region.

During a single workday an average of 23 200 PID bus connections are dispatched within the city, transporting approx. 1.17 million passengers. Of this number, 19 400 are urban connections (the 100, 200 and 500 series) and approx. 3 800 are suburban connections (the 300 and 600 series). Nine carriers operated urban bus lines in 2012, with DPP accounting for 134 of those (85 %) and eight private carriers the remaining 23 (15 %).

Basic data on the PID bus network in Prague

Operators of urban lines	Number of urban lines	Operating length in Prague
9 (85 % DPP and 15 % private)	135 (120 day* and 15 night)	687.0 km**
Length of urban bus lines	**Avg. distance btw. urban bus stops**	**Avg. travelling speed of urban buses**
1 629 km	583 m	24.8 km/h
Ridership and share of persons transported in Prague in 2012		**Operating time**
358 093 580 (urban + suburban lines)	27.74 % (urban + suburban lines)	day 4:00–24:00, night 0:00–4:00

** only lines 100 through 297 ** only including bus network operated by DPP*

Arterial 124 line on the street Pod židovskými hřbitovy

361 suburban line on Žitavská street

On an average workday, 81 day and 10 night suburban bus lines (the 300 and 600 series) crossed the boundaries of Prague in both directions with around 3 800 connections, carrying approximately 88 270 passengers across the city limits. These lines were operated by a total of 11 carriers, with private carriers operating 75 lines (82 %) and DPP the remaining 16 (18 %).

The network of PID bus lines is also supplemented by regional lines that do not enter the territory of Prague. At the end of 2012 there were 64 of these in operation (the 400 series) and they carried approximately 22 120 passengers out of the city per workday. These are all operated by private carriers (a total of 8).

In 2012, urban and suburban bus lines had a total of 1 111 stops available to them within Prague (number calculated from stop names). The most lines (22) and connections (around 2 550) of urban and suburban buses left from the stop Nemocnice Krč. PID suburban bus transport used a total of 22 locations in Prague as terminal stops for serving the outlying areas.

The most significant changes in the organisation of bus lines in 2012 took place in September, when the new “metropolitan” network of public transport lines was introduced. In bus transport this meant new arterial lines of “metrobuses” with short wait times, all-day service and routes that are attractive for passengers.

Metrobuses differ in their graphic display of the line number. The number of the side of the bus is in a small square (in the beginning this was the case on the front of the bus as well) and the number on the bus stop column is in purple and also framed. The metrobus network is supplemented by regular bus lines and midibus lines, which provide local service for less accessible and more peripheral parts of Prague.

Changes in the routing of PID urban bus lines as of 1 September 2012*			
Description of change	**Number of lines**	**Type of urban bus line**	**Number of lines**
Eliminated	18	**Metrobus**	38
Rerouted	65	**Standard**	63
New line	4	**Midibus**	20
No change	52	**TOTAL**	121

** details at www.ropid.cz*

In connection with the refurbishing of the tram tracks between Želivského and Vozovna Strašnice, the transfer situation between tram and bus lines at the Želivského transfer point was optimised starting 1 November 2012. For some bus lines (going toward Dvorce, Komořany, Na Beránku and Jižní Město) the boarding stop was moved from the Želivského turn-around to the tram stop (for trams 5 and 26), where a joint transfer point was created. Allowing the buses to travel along the tram tracks also significantly sped up their passage through the adjoining intersection.

3.5 PID railway transport

Railway transport has been under development under PID since 1992. In 2007 the process of labelling suburban lines with “S” or “R” was begun, with emphasis on regular intervals and easy-to-remember times. Recent efforts have focused on offering connections that pass through Prague in some directions.

A total of 856 trains (including 50 express trains) were dispatched daily under PID on workdays in 2012, carrying approximately 103 000 passengers a day.

Basic data on the PID rail network within Prague		
Operator	**Number of lines and tracks**	**Operating length**
Czech Railways (České dráhy, a.s.)	16 S and R lines, 11 tracks (incl. ML)	160.0 km
Number of stations and stops	**Average distance btw. stops**	**Avg. speed of PID local trains**
44	3 800 m	45.2 km/h
Ridership and share of persons transported in 2012		**Operating time**
18 863 000	1.46 %	daily from approx. 4:00–1:00

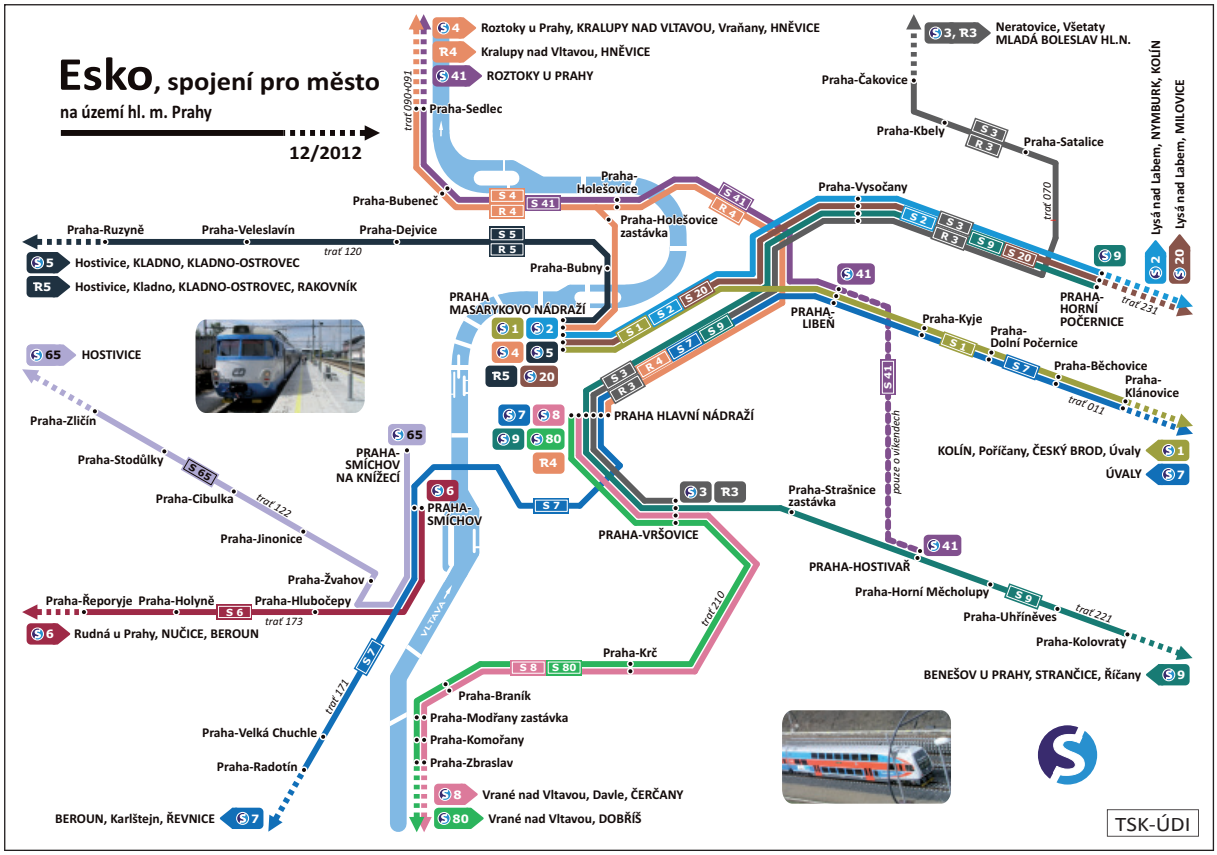
The S2 line at Masarykovo nádraží

A train on the S8 line near Modřany station

Since 2010 all 11 railway tracks within Prague have been fully integrated into PID, meaning that in addition to time-based passes it is also possible to use individual PID tickets (all stations and stops in Prague are equipped with yellow ticket-stamping machines).

On 1 June 2012, full integration was extended to the segment Praha-Čakovice – Všetaty (track 070, lines S3 and R3) and on 1 October 2012 also to the stop Stratov (track 231, line S2). This expanded the number of railways stations and stops with full integration under PID in the year 2012 by 8 to a total of 108 (49 %).

S and R railway lines within the City of Prague



On the day of state-wide changes to the train schedules (11 December 2012), several adjustments were made to S lines entering the city:

- Lines **28** and **S80**: trains going toward Čerčany and Dobříš now have regular easy-to-remember intervals; most trains use the modernised "Regionova" motor units
- Line **S9**: the morning rush hour period is extended on workdays in the segment Praha – Říčany. At the same time the number of connections going all the way to the station Praha-Horní Počernice has been increased.
- Line **S6**: modernised "Regionova" motor units are now used for all connections

With the introduction of regular intervals on S lines and the offer of new connections (for example passing through the territory of Prague) railway transport is becoming more attractive for passengers. On the most important tracks the travel time from the first stop within the city limits to the centre of the city does not exceed 20 to 30 minutes and the intervals between connections during peak hours generally range between 15 and 30 minutes.

Frequency and travel time to the centre on most important railways segments in Prague

Section (line)	Average peak frequency	Average trip time	Length
Praha-Klánovice – Praha Masarykovo nádraží/Praha hl. n. (S1,S7)	15 min	22 min	18 km
Praha-Kolovraty – Praha hlavní nádraží (S9)	15 min	23 min	17 km
Praha-Radotín – Praha hlavní nádraží (S7)	10 min	17 min	13 km
Praha-Sedlec – Praha Masarykovo nádraží (S4)	20 min	14 min	9 km
Praha-H. Počernice – Praha Masarykovo nádr./Praha hl. n. (S2, S20, S9)	15 min	15 min	15 km
Praha-Ruzyně – Praha Masarykovo nádraží (S5)	30 min	23 min	13 km

Number of persons transported by rail in Prague under PID per year (trips made using PID ticket)

Year	2005	2006	2007	2008	2009	2010	2011	2012
Persons	16 584 000	16 531 000	17 192 000	17 278 000	17 751 000	18 126 000	18 421 000	**18 863 000**

According to a state-wide ridership survey carried out by Czech Railways in 2012, the most heavily trafficked railway within Prague was track 221, which connects the capital with the Benešov region (on average 21 640 persons transported per workday) and the least trafficked was track 122 (Praha hlavní nádraží – Praha-Zličín – Hostivice – Rudná u Prahy) with an average of 390 persons transported per workday.

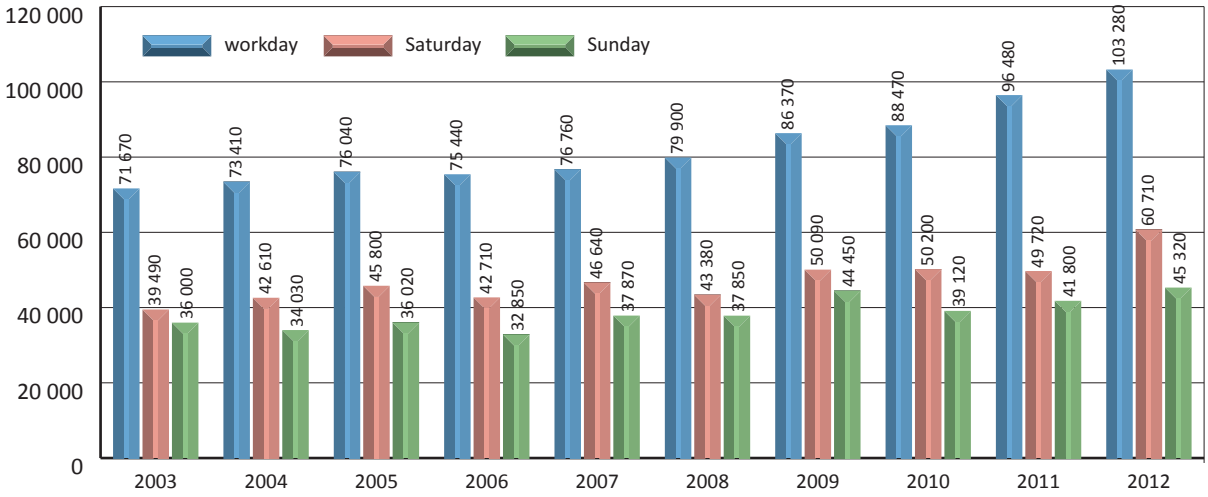
Number of persons transported by rail in Prague as part of PID (average workday*)

Track	Line	2005	2006	2007	2008	2009	2010	2011	2012
011	**S1 (S7)**	18 270	19 040	17 120	17 580	18 120	17 570	19 340	**20 930**
070	**S3, R3**	1 790	1 740	2 190	2 260	2 540	2 380	2 890	**2 960**
091	**S4, R4**	9 100	9 700	9 410	10 030	7 830	8 210	10 030	**10 710**
120	**S5, R5**	4 520	4 500	3 920	4 310	5 620	5 270	4 960	**5 470**
122	**S65**	240	190	210	200	230	340	390	**390**
171	**S7**	14 230	14 230	15 740	16 450	18 530	18 970	20 470	**20 350**
173	**S6**	350	390	420	510	690	790	880	**1 030**
210	**S8, S80**	2 200	2 070	2 090	1 830	1 950	1 860	1 560	**2 240**
221	**S9**	14 390	12 420	12 810	13 780	15 650	16 940	18 950	**21 640**
231	**S2, S20 (S9)**	9 880	10 040	10 480	11 060	12 730	13 640	14 490	**15 090**
ML	**S41**	1 070	1 120	1 750	1 890	2 480	2 500	2 520	**2 470**
TOTAL		**76 040**	**75 440**	**76 140**	**79 900**	**86 370**	**88 470**	**96 480**	**103 280**

** Average value for both directions from two surveys carried out in spring and autumn of every year.*

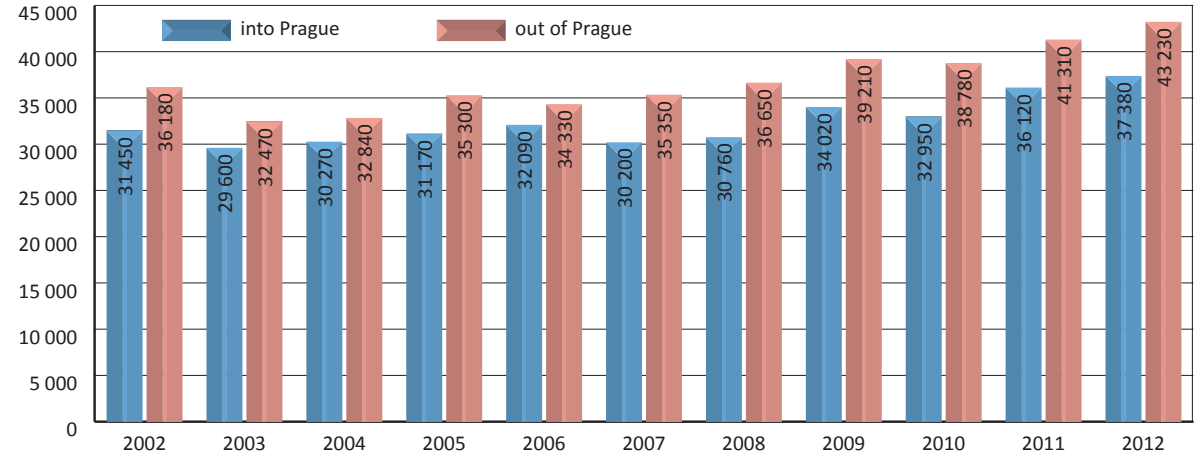
On an average Saturday in 2012, PID trains within Prague transported 59 % of the amount of passengers carried on an average workday. On an average Sunday PID trains within Prague transported only 44 % of the passengers carried on a workday.

Number of persons transported by PID trains within Prague by day of the week*



** Average value from two surveys carried out in spring and autumn of each year.*

Number of persons crossing the city limits on PID trains in an average workday*



** Average value from two surveys carried out in spring and autumn of each year.*

Taking PID buses and trains together, around 168 880 persons cross the border of Prague on an average workday, with PID trains accounting for 48 % of this number and PID buses 52 %. At the 44 railway stations and stops within Prague, a total of 135 970 passengers get on/off PID trains on an average workday.

A train on the S9 line at Praha-Hostivař station

A train on the S65 line at Prah-Zličín station

Daily passenger turnover on PID trains at most frequented railway stations in Prague

Station	PID lines passing through	Boarding, de-boarding and transfer (total ppl/day)
1. Praha Masarykovo nádraží	S1, S2, S20, S4, S5, R5	36 857 (PID accounts for 100 % of total daily turnover)
2. Praha hlavní nádraží	S3, R3, R4, S7, S8, S80, S9	34 862 (PID accounts for 44 % of total daily turnover)
3. Praha-Smíchov	S6, S7	13 110 (PID accounts for 90 % of total daily turnover)

With the number of connections on S and R lines growing each year, so too does the percentage of passengers using PID single tickets or time-based passes. In 2012 this number exceeded 72 %.

Percentage of travel documents used by passengers on PID trains within Prague

Year	1996	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
PID document* (%)	29.1	32.5	39.2	43.0	52.1	56.5	57.7	59.7	60.4	63.3	63.8	66.6	68.7	70.3	**72.7**
– individual PID tickets (%)	-	-	-	4.0	7.2	9.8	10.6	7.0	7.5	8.2	5.6	7.3	8.5	5.4	**5.3**
ČD document or free (%)	70.9	67.5	60.8	57.0	47.9	43.5	42.3	40.3	39.6	36.7	36.2	33.4	31.3	29.7	**27.3**

** including individual PID tickets*

3.6 Funicular and ferries

The funicular is part of PID and provides a connection between Újezd, Nebozízek and Petřín. Every day it transports an average of 5 000 passengers. In 2012 it carried a total of 1 857 990 passengers and accounted for 0.14 % of the overall number of persons transported by PID within the city that year. The funicular consists of two cable cars with a capacity of 100 persons moving along a 510 m long track covering a height of 130.45 m. The average travelling speed is 6.12 km/h. The cars are suspended on an electrically powered cable with a diameter of 35.3 mm.

River ferries across the Vltava have been an element of PID since 2005 and are becoming a commonplace component of public transport in the city. Their primary importance is for recreational travel (connecting to cycle paths, connecting housing developments to recreational areas, serving the islands on the Vltava). Over the eight years this form of transport has been in place it has transported approximately 2.5 million passengers. In 2012 there were 5 ferries in operation, carrying 467 000 passengers and accounting for 0.04 % of the total number of passengers transported under PID within Prague.

Cyclists waiting for a P2 ferry boat

The operator of the P3 ferry is Vittus group s. r. o., while the other ferries are run by Pražské Benátky s. r. o. All ferries are served by boats with a capacity of 11 persons. A second boat is added to P2 on a seasonal basis.

Changes in ferry operation

Line	Description of change
P2	Service extended by approximately 1 hour (until 22:00) every day of the week (as of 10 October 2012).
P5	Service renewed on a shorter route; interval shortened from 60 to 30 minutes; year-round service changed to seasonal (starting 31 March 2012).
P6	Service shortened by approximately 1 hour (until 19:00) every day of the week (as of 10 October 2012).

The most heavily used ferries in terms of total number of passengers transported in 2012 were ferries P2 and P3, which together ferried approximately 359 000 people (77 %).

Overview of Prague ferries operated in 2012 and selected operating parameters

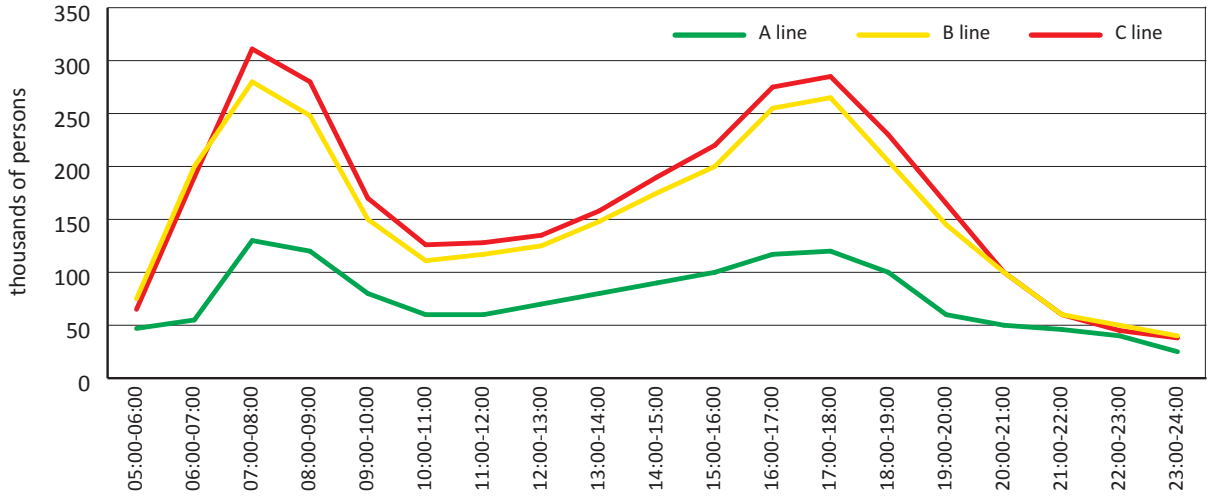
Line	Route	Beginning of operation	Season	Persons transported per day*	Persons transported in 2012
P1	Sedlec – Zámky	1 July 2005	year-round	102	37 180
P2	V Podbabě – Podhoří	1 July2006	year-round	535	194 780
P3	Lihovar – Veslařský ostrov	17 July 2007	year-round	448	164 080
P5	Kotevní – Císařská louka – Výtoň	31 March 2012	seasonal	230	49 530
P6	Nádraží Modřany – Lahovičky	19 Sept 2009	year-round	58	21 350

**average number of persons transported per day in 2012*

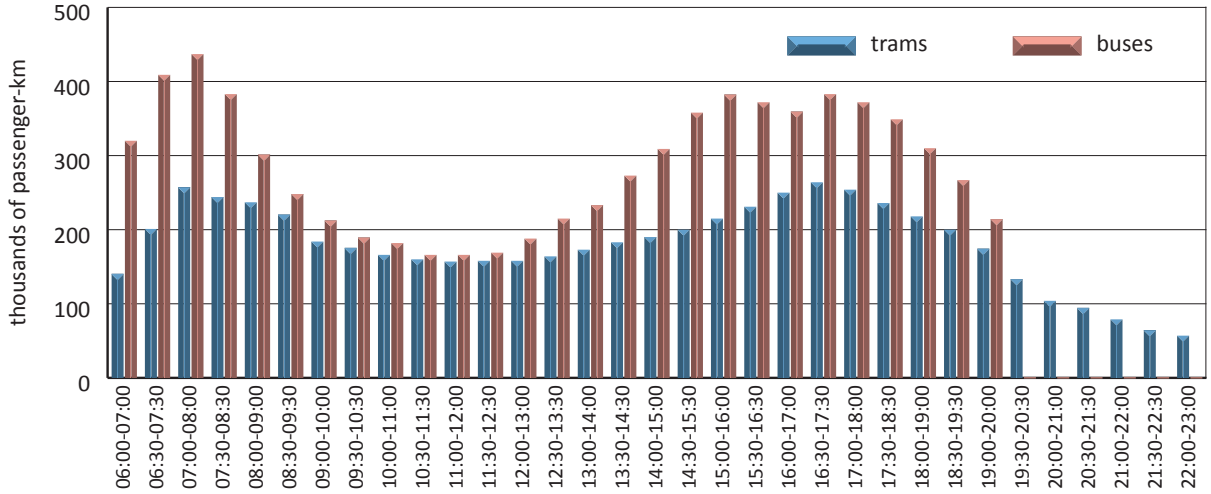
During daily service in 2012 on ferries P1 and P6, trips could also be made outside those listed on the schedule as long as it would not disrupt the scheduled connections. Ferries P2 and P3 were operated according to the schedule; during periods of high demand however the ferries could be operated continuously (meaning the schedule might not be followed precisely). In 2012 the P5 ferry only travelled at the times indicated on the schedule.

3.7 Daily variation of urban public transport within Prague

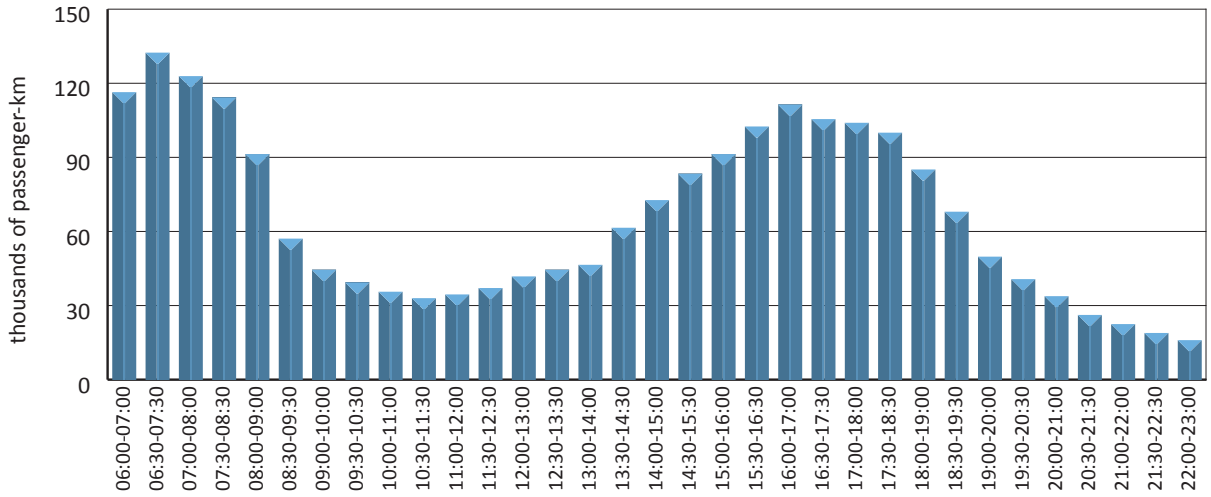
Metro (number of persons in both directions, workday, 2008 survay)



PID trams and buses (passenger-distance in both directions, workday, 2011 survays)



PID trains (passenger-distance in both directions, workday, 2011 survay)*



** local and fast trains within Prague, all types of travel documents (including PID)*

3.8 Non-PID public transport in Prague

Mass passenger transport outside the PID system is predominantly operated in Prague for special occasions. One such example is the dispatching of ten bus lines during the Prague Museum Night 2012. These lines were in service from 18:30 until 01:15 and a total of 550 connections were dispatched, providing free transportation between various cultural institutions with a central transfer point at the Staroměstská stop.

A chapter of its own is formed by service to shopping, office or multifunctional centres. These are generally located at the edge of the city or in hard-to-access areas and transportation is therefore organised for visitors from the closest terminals, usually of some form of high-capacity rail transport. For all the locations listed in the table below, transportation is free and is paid for by the individual centres or shops.

Free lines to shopping and multifunctional centres within Prague

Shopping centre	Number of lines	Approx. operating time	Number of connections		
			Workdays	Saturday	Sunday, holidays
BB CENTRUM Brumlovka	2	7:00 – 19:00	137	–	–
IKEA + TESCO Zličín	1	5:40 – 23:30	101	118	98
GLOBUS Zličín	1	8:00 – 23:00	50	50	50
TESCO Letňany	2	9:00 – 20:00	19	19	19
OC Letňany	1	10:00 – 22:00	66	66	66
IKEA Černý most	1	8:00 – 23:00	57	62	62
OUTLET CENTRUM Štěrboholy	1	9:00 – 21:00	24	24	24

Another operator of public transport in the summer season is the Prague ZOO, which has provided its "Zoobus for a crown" for several years now. Direct buses from Nádraží Holešovice to the Prague ZOO run every 10 minutes from March to September on weekends and holidays.

Two special lines, the 751 Nádraží Holešovice – Výstaviště Holešovice and 758 Letňany – Výstaviště Letňany, are dispatched for various exhibitions and fairs, particularly intended for persons with reduced mobility and orientation.

For holders of the ZTP and ZTP-P cards (people with physical handicaps) whose registered address is in Prague or certain municipalities in the Central Bohemia Region, a service is operated whereby they can order a microbus or assistant-staffed microbus by telephone. There is a boarding fee of CZK 10 and then around Prague a fare of CZK 32.

3.9 Mass transport between Prague and external territory

Public mass transport between the capital and other areas in the region and the country as a whole is provided by a number of carriers. Prague is an important hub for regional, domestic and international rail travel as well as a point of departure, destination and transit stop for many long-distance Czech and international bus lines.

Non-PID rail transportation

A total of 1 132 train connections operated by Czech Railways started, ended or passed through Prague on an average workday in 2012, carrying around 138 000 passengers across the city limits. 24 % (276) of these were non-PID connections, while the remaining 76 % (856) were incorporated under PID.

The operation of (non-PID) long-distance passenger rail transportation is provided by Czech Railways, RegioJet and starting in 2012 also the new carrier LEO Express. The infrastructure for transportation is provided by the state organisation the Railway Infrastructure Administration (Správa železniční dopravní cesty).

In terms of volume, the most important train station in Prague for external rail transport has long been the station Praha hlavní nádraží. A total of 667 train connections pass through this station daily, of which 43 % are non-PID connections.

Number of trains operated by ČD at most important railway stations in Prague*

Station	Praha hlavní nádraží	Praha Masarykovo nádraží	Praha-Smíchov	Praha-Vršovice	Praha-Libeň	Praha-Vysočany	Praha-Holešovice	Praha-Radotín
Trains per year	226 659	97 443	85 929	82 164	89 208	61 086	38 466	41 262
Trains per day**	667	287	257	244	269	193	116	128
– PID	379	287	182	212	178	162	85	128
– non-PID	288	0	75	32	91	31	31	0

* *number of trains starting, ending or stopping*
** *average work day*

A train on Prague's "New Connection"

An express train passing through the stop Praha-Běchovice

Development of number of trains starting and ending at Prague stations per year (all ČD trains)

Year		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
of trains	starting	170 706	159 681	159 524	161 193	160 360	174 615	215 189	217 472	217 481	**219 679**
	ending	170 324	160 888	160 731	163 510	160 665	174 947	215 598	217 886	217 895	**220 098**
	TOTAL	**341 030**	**320 569**	**320 255**	**324 703**	**321 025**	**349 562**	**430 787**	**435 358**	**435 376**	**439 777**

Passenger turnover at most important railways stations within Prague (only ČD trains)*

Station	Praha hlavní nádraží	Praha Masarykovo nádraží	Praha-Smíchov	Praha-Vršovice	Praha-Libeň	Praha-Vysočany	Praha-Holešovice	Praha-Radotín
Persons per year	26 765 000	10 701 000	4 523 000	1 585 000	2 150 000	1 512 000	1 354 000	2 199 000
Persons per day	79 856	36 857	14 985	5 181	7 645	5 245	4 635	7 762
– PID	34 862	36 857	13 110	4 611	5 720	4 444	3 285	7 762
– non-PID	44 994	0	1 875	570	1 924	801	1 350	0

* *sum of boarding and disembarking*

Non-PID bus transportation

Public bus transportation between Prague and other areas is operated by a number of carriers from the Czech Republic, and some international lines are also run by carriers from other countries. The largest carrier is Student Agency.

The only bus station in Prague that dispatches exclusively non-PID buses is ÚAN Florenc. It has also long been the most heavily trafficked station for regular external, generally long-distance, bus transportation.

Development of selected characteristics of Florenc bus station

	2005	2006	2007	2008	2009	2010	2011	2012
Connections per year	220 000	210 000	200 000	180 000	160 000	145 000	145 000	**150 000**
Connections per average workday	660	650	620	550	460	420	420	**425**
– of which international	140	140	140	120	100	105	130	**145**
– domestic long-distance	520	510	480	430	360	315	290	**280**
Number of carriers	90	90	90	85	93	100	100	**100**

Other lines connecting Prague with other areas are dispatched and terminated at the bus stations Černý Most, Dejvická, Hradčanská, Nádraží Holešovice, Na Knížecí, Roztyly and Zličín. To a lesser extent (up to 5 000 connections a year) long-distance buses also leave from Ládví, Letňany and Opatov.

Departure stands at bus station Roztyly

A bus on line SID A55 at Dejvická stop

Selected characteristic of most important bus terminals within Prague

	Dejvická	Nádraží Holešovice	Černý Most	Na Knížecí	Zličín	Hradčanská	Roztyly	Želivského	CELKEM
Connections/year	148 867	101 670	95 634	94 415	79 622	50 864	42 130	5 079	**618 281**
– international	0	0	348	104	0	0	2 756	5 069	**8 277**
– dom. long-distance	31 781	52 165	77 664	35 077	29 710	16 885	28 228	10	**271 520**
– intraregional	117 086	49 505	17 622	59 234	49 912	33 979	11 146	0	**338 484**
Connections/workday	507	354	288	299	261	175	123	12	**2 019**
– international	0	0	0	0	0	0	5	12	**17**
– dom. long-distance	95	148	222	94	85	49	82	0	**775**
– intraregional	412	206	66	205	176	126	36	0	**1 227**

Central Bohemian Integrated Transport (Středočeská integrovaná doprava – SID) also contributes to suburban transport in Prague. SID provides public transport in selected parts of the Central Bohemian Region on regional and municipal lines, but without any shared fare with PID or Czech Railways trains. SID lines entering the territory of Prague are designated by the letters A (Kladno district), B (Rakovník district), C (Beroun district), D (Příbram district), E (Benešov district), F (Kutná Hora district) and a corresponding number.

SID
Středočeská integrovaná doprava

4 BICYCLE TRAFFIC

The cycle route network in the City of Prague has a total length of 530 kilometres. The individual cycle routes are broken down into arterial (serving primarily for distance travel and following the natural lines of the terrain and urban axes – numbered Ax and Axx), main (providing connections between individual municipal districts – numbered Axxx), supplementary and local (allowing general access to an area, including recreational routes – numbered Axxxx and not labelled on the ground). This system is supplemented by cyclo-tourist routes.

A number of investment and non-investment measures were realised to support bicycle transport in 2012.

New bicycle infrastructure in 2012

Infrastructure	Length	Other realised measures	Amount
Cycle routes	19.9 km	Advance stop lines for cyclists (V19)	33 locations
Cycle tracks	5.6 km	Bicycle crossings	12 locations
Cycle pictocorridors (V20)	7.7 km	Bicycle stands (two spots)	360
Cycle lanes (V14)	1.0 km	Mirrors	30
Two-way lane for cyclists	6.5 km		

Sliačská – Roztylské náměstí cycle track

Malá Chuchle – Barrandovský most cycle track

Bicycle infrastructure investment projects in 2012

Location	Route	Description
Kačerov -Spořilov-Záběhlice, II. phase (Sliačská – Roztylské náměstí)	A41 + A42	Total length of segment 2.6 km, of which 1.65 km is cycle track
Malá Chuchle – Barrandovský most	A1	This cycle track along the line of the arterial A1 route connects the already finished segments of this path along the left bank of the Vltava. It is 1.57 km long, 3 m wide, has a bituminous surface, and includes 600 m of gabion protective wall (0.75 m), a staircase and structural modifications to the drainage system.
Mladoboleslavská	A265	A sidewalk cycle track in the segment Huntířovská – Košařova, 0.9 km long.
Na Slupi – Výtoň	A23	A cycle route and integrating traffic measures on the streets Neklanova and Vnislavova; minor structural modifications. Length of segment 0.65 km.
Modřany – Cholupice	A201	Cycle track with mixed traffic, phase Mariánská – Durychova, length 0.86 km.

Reserved lane for cyclists (V14), Rohanské nábřeží

Cycle track in Vysočany

Cyclists on Prague Integrated Public Transport (PID)

For passengers with a valid PID ticket the transport of bicycles as a piece of luggage is free within Prague.

In the metro, at most two bicycles can be transported at the back of each train car.

On trams, a bicycle may be transported in the space designated for prams on workdays from 19:00 until 7:00 and all day on Saturdays, Sundays and holidays; the transportation of bicycles is only permitted on stipulated stretches heading out of the centre. At most two bicycles may be transported on each space and transportation is not possible during periods of high passenger demand.

Sign of tram stop where the enter with bicycle is allowed

On all railway tracks integrated under PID, service is provided by vehicles that allow the transportation of bicycles. Outside of Prague there is a fee for transporting bicycles. A cycle train made up of a motor car and an attached car allow the transportation of a large number of bicycles was in operation in 2012 on all weekends and holidays from 24 March until 28 October on the route Praha-Masarykovo nádraží – Slaný in two pairs of connections. The second car of the train has priority for cyclists, being equipped with a special area for transporting bicycles and a reduced number of seats.

For the tenth season now, a PID cycle bus operated every non-workday from 7 April until 7 October 2012 on the route Dobřichovice – Kytín. The service is provided by a modified bus with holders for 25 bicycles. The cycle bus line links up to the S7 line trains in Dobřichovice. PID fare is valid on the cycle bus line and the cost for transporting one bicycle was CZK 16.

On the funicular up Petřín, bicycles are always transported in the second section of the car (marked with a pictogram). At most 2 bicycles can be transported in the car and the funicular conductor can refuse to transport a bicycle.

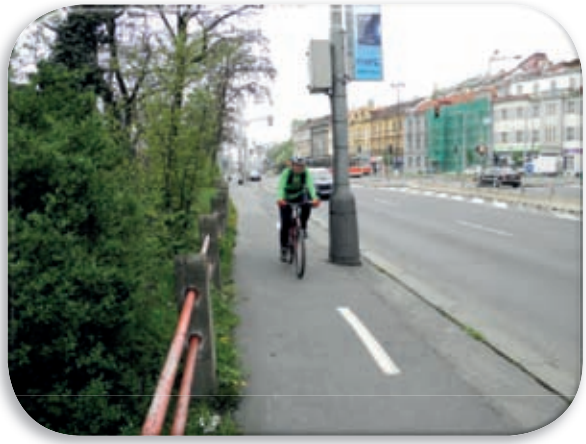
Free transportation of bicycles is also possible on all ferries that connect the banks of the Vltava and thus also the arterial cycle routes A1 and A2.

A cycle path going against a one-way street in Karlín

In order to compare the volume of bicycle traffic in the main cycling season with the low season, a manual survey was carried out in October of 2012 (in the preceding five years the survey had always been performed in June).

Daily cyclist volume at selected survey stations (manual survey, both directions, workday, 7:00-20:00)							
Name of station	**Placement of station**	**2007**	**2008**	**2009**	**2010**	**2011**	**Oct/2012**
Podolské nábřeží	by Dvorce tram stop	1 121	1 116	596	1 332	2 267	**1 223**
Hostivař reservoir	by the dam	405	378	409	218	261	**223**
Vltavanů	by the cinema	1 243	791	1 585	1 290	1 693	**240**
Trojská lávka	on the bridge (incl. walking bikes)	1 070	2 142	1 918	1 794	1 371	**769**
Stromovka	Gotthardská	318	256	406	441	440	**324**
Podbabská	by the bus stop V Podbabě	331	574	248	622	409	**161**
Kampa	south bridging of Čertovka	438	478	241	613	692	**339**
Na Příkopě	Václavské náměstí – Havířská	280	376	303	418	493	**409**
Jindřišská	Václavské náměstí – Panská	148	99	140	135	148	**116**
Nuselský most	on the bridge	165	98	160	187	181	**127**

Radotín bicycle counter



Bicycle counter on Nábřeží Kpt. Jaroše

Automatic bicycle counters allow on-line access to data 24 hours a day year-round, thus providing a detailed survey of bicycle activity at various times of year, as well as the changes in volume over the day or week. In Phase I (2009) these counters were installed in Dubeč, at Kolčavka (near Čuprova street), on nábřeží Kapitána Jaroše, on Podolské nábřeží, on Rohanské nábřeží, on Strakonická street, on Sulická, on Císařský ostrov, on the streets V Šáreckém údolí and Vršovická. Over the course of 2011 (Phase II), a further 15 bicycle counters were progressively put into operation (Povltavská, Hlubočepská, Dukelských hrdinů, Vítkov, Vysočany, Modřany–Komořany, Divoká Šárka, Chodov, Střešovice, Podbabská, Letňany, Šeberov, Barrandovský most, Radotín and Nuselský most). At the end of April 2012 a counter was put into operation on Celetná street and in March 2012 a test run was launched in Podolí and Košíře.

Rohanské náměstí bicycle counter

Mladoboleslavská cycle track with emphasised crossing

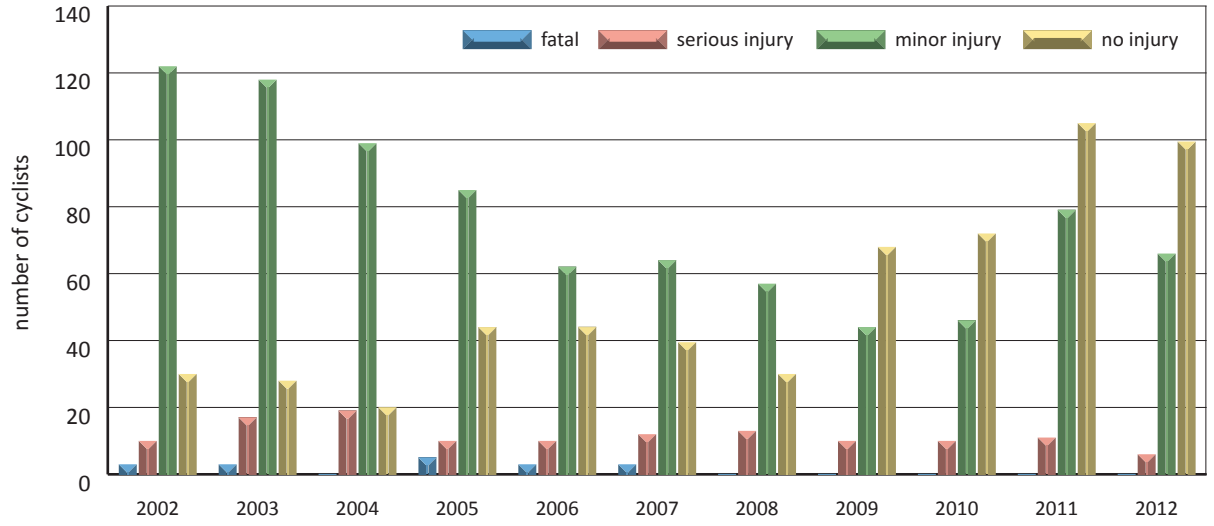
Total annual cyclist volume recorded by automatic bicycle counters installed in Phase I

Name of station	Placement of station	Cyclists per year		Growth	Cyclists/day
		2011	2012	12/11 (%)	max. in 2012
Dubeč	cycle route A24, Netlucká street	25 406	31 067	+ 22.28 %	352 (Tues)
nábř. Kpt. Jaroše	cycle route A1, 200 m from Hlávkův most	46 963	113 732	+142.17 %	1 003 (Wed)
Kolčavka	cycle route A26, by underpass of Čuprova street	94 586	97 581	+ 3.17 %	1 168 (Tues)
Podolské nábř.	cycle route A2, 150 m south of Vyšehrad tunnel	318 144*	344 992	+ 8.44 %	3 090 (Tues)
Rohanské nábřeží	cycle route A2, btw. Hlávkův m. and Ke Štvanici	163 199	184 027	+ 12.76 %	1 397 (Wed)
V Šáreckém údolí	cycle route A17, by Žežulka bus stop	37 535	39 888	+ 6.28 %	530 (Tues)
Strakonická	cycle route A1, under Lahovický most	128 737	170 891	+ 32.74 %	2 636 (Tues)
Císařský ostrov	cycle route A160, by bridge over Plavební kanál	269 958	296 227	+ 9.73 %	3 276 (Tues)
Vršovická	cycle route A23, on cycle lanes by Vršovické nádr.	74 962	96 744	+ 29.06 %	740 (Tues)
Sulická	cycle route A22, under Jižní spojka	158 881	166 246	+ 4.64 %	1 594 (Tues)
TOTAL		**1 318 371**	**1 541 395**	**+ 16.92 %**	–

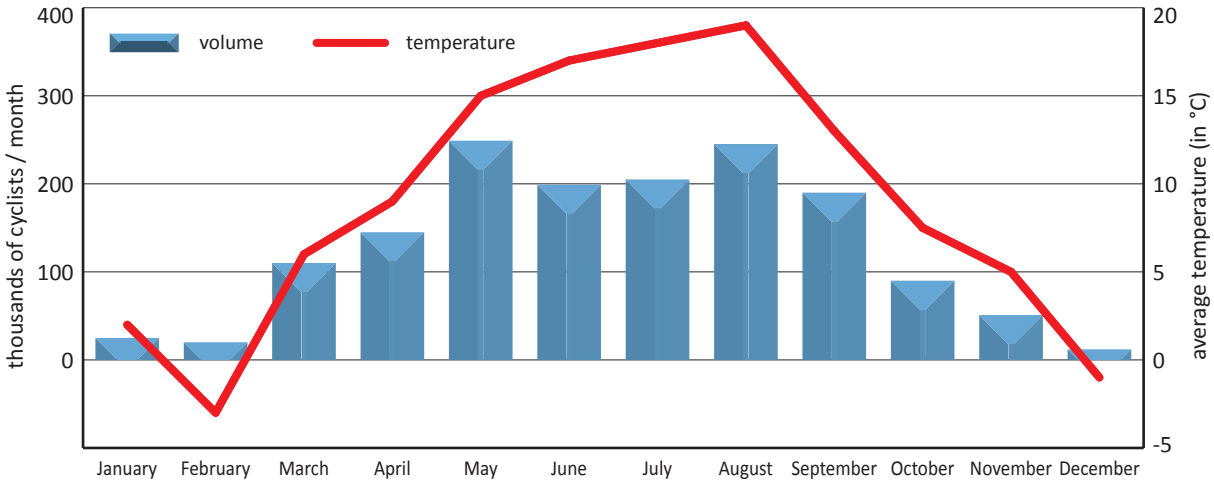
** counting did not start until 9 February 2011*

A comparison of 2012 and 2011 shows a rise in cyclist volume of approximately 17 %. The results of accidents involving cyclists in 2012 however were better.

Results of cyclist accidents in Prague 2002 – 2012 (source OSDP KŘP hl. m. Prahy)



Annual variation 2012, according to automatic bicycle counters – 10 locations installed in Phase I



5 PEDESTRIAN TRAFFIC

Walking is a basic, free and environmentally friendly form of transportation that allows for instant mobility independent of spatially and economically more demanding forms of transportation. We must also not forget its social and health function and the fact that it helps increase the quality of life in the city.

The volume of pedestrian traffic depends on the location and transportational and social significance of the road for pedestrians, as well as on the time of year. In Prague, the greatest volume of pedestrian traffic is still in the city centre on the "golden cross" at the intersection of the pedestrian routes Václavské náměstí – Na můstku – ul. 28. října – Na příkopě, where on a workday between 5 000 and 8 000 pedestrians pass through per hour.

In recent years the city has continued to enjoy the interest of visitors to Prague, predominantly from abroad. This has meant growing volumes of pedestrian traffic on the routes frequented by these visitors, in particular routes connecting the tourist hot spots of Prague Castle – Malá Strana – Old Town, where the volume of workday pedestrian traffic can reach 4 000 pedestrians an hour.

Prague residents are also attracted to the pedestrian routes that pass through the city's parks and recreational forests (Stromovka, Letná, Petřín, Šárka, Kunratický les, around the Hostivař reservoir, etc.).

Despite limited funding, some **linear pedestrian walkways** (pavements) were built or refurbished in 2012 as part of refurbishment of the whole roadway or as part of the "pavement programme". Many repairs were due to the poor condition of the pavements and were performed as part of regular maintenance.

Pedestrian traffic on Karlova street

Light-controlled pedestrian traffic on a narrow alley on Kampa

In connection with refurbishment of local roads, construction work was done on the sidewalks of the streets Michelská, Střížkovská, Brumovická, Na Popelce, Pod Kotlářkou, Pod Markétou and Rozdělená and in Čechova residential area.

Under the pavement programme work was primarily realised with contributions from the municipal districts Prague 3, 6, 7 and 10. Among the most costly were the construction or repairs done to sidewalks on the streets Kubišova, U Pekařky, Kundratka, Kotlaska, Šárecká, A. Čermáka, Rooseveltova and Charlese de Gaulla.

One positive development for pedestrians on local roads is the creation of new **pedestrian and residential zones** which do not merely serve to move people from point A to point B, but also allow them to remain there for longer periods of time, thereby emphasising the social role of these zones. To this end pedestrian and residential zones are equipped with appropriate street furniture. In 2012 new pedestrian zones in the centre of the city were created in Prague 1 in the area of Václavské náměstí and on the streets Jindřišská and Ostrovní.

Also contributing to the relaxation of residents and visitors to the city is the overall landscaping of formerly neglected and little used **public space**. For instance, in 2012 landscaping of the public space on Obchodní náměstí ("Central Park" Modřany) continued.

In 2012 a reorganisation of the whole public space around Letenské náměstí in connection with construction of the Blanka tunnel complex brought many positives for pedestrians. The following were the most important structural and organisation changes carried out as part of the project:

- The creation of new public transport stops on the street Milady Horákové heading toward Špejchar (including an island and light-controlled passenger access) and by the street U Sparty.
- New traffic signals at the street U Sparty.
- New protective islands at the light-controlled crossing across Milady Horákové by the tunnel.
- Eight new parking spots.
- New traffic signals at the pedestrian crossing across Veletržní by Šmeralova.
- Kerb extension at the pedestrian crossing on Šmeralova by Veletržní.

Also contributing to the comfort of pedestrians are **local traffic calming measures** on local streets or parts thereof. This can be executed by a change in the traffic regime, for example on and around the street Karoliny Světlé in Prague 1, or by applying component measures that primarily aim to slow down motor vehicles. These measures are:

- Raised roadbeds at intersections with an integrated crossing (e.g. 2 locations in Prague 10).
- Speed humps, particularly fully integrated ones (e.g. two humps on Truhlářská in Prague 1, a successful hump on Jeseniova in Prague 3, in Prague 9 on Jablonecká and at the intersection of Litoměřická – Valečovská, in Prague 22 on Rozdělená); in Prague 12 an assembled speed hump was installed on Podchýšská before the enter to Cholupice.
- Traffic buttons, for example in two locations in Prague 10.

Attention was given to pedestrian safety, particularly around pedestrian crossings. Examples implemented in 2012 are:

- In Prague 3 extended kerbs were installed at crossings on the streets Jeseniova by the primary school, Milešovská by Odříčkova, Roháčova by Černínova (+ assembled speed hump + extra lighting) and Slavíkova by Křížkovského and Zvonařova (+ extra lighting) and central traffic islands were added at the crossings across Ondříčkova by Milešovská and across Prokopova by Prokopovo nám.
- In Prague 9 a new crossing was added at the street K náhonu and the existing crossing was modified (traffic islands, optical speed bars).
- In Prague 9 – Kbely, speed cushions installed on pedestrian crossings with public transport traffic have proven useful (Toužimská, Klenovská).
- In Prague 10 a new crossing across Průmyslová at plukovníka Mráze was installed and the intersection Kutnohorská x K Měcholupům was modified – new bituminous surface and new traffic signals were installed, a traffic island was added and the surface was refurbished on the sidewalks as well, including modifications for persons with reduced mobility and orientation.
- In Prague 11 the pedestrian crossing across Výstavní at K jezeru was modified and repairs were made to the railings.
- In Prague 13 two existing pedestrian crossings on Červeňanského were equipped with traffic islands and a new pedestrian crossing was built at the terminal bus stop.

New traffic signals at Milady Horákové-U Sparty

Attention was also paid to creating **barrier-free crossings** with tactile elements for persons with reduced mobility or orientation. Altogether 97 crossings were converted to be barrier-free, the most in Prague 10 (34 locations).

In order to increase the safety of pedestrians and also reduce the negative effects of motor vehicle traffic, **zones with a speed limit of 30 km/h** are established in predominantly residential areas. Such zones were established, for example, in Prague 10 and 14 (a new zone was signed in the Velká Ohrada estate).

6 TRANSPORT TELEMATICS AND TRAFFIC MANAGEMENT

Transportation telematics integrates information and communication technology with traffic engineering in order to optimise the performance of the existing infrastructure, improve traffic safety and increase the quality of transportation in general. The field has increasingly extensive applications in traffic management processes using traffic lights and control centres, as well as in monitoring, early warning and information systems.

6.1 Construction and renewal of traffic signals

In 2012 a total of 18 new traffic signals were built within the City of Prague by TSK and other investors, 6 of them at stand-alone pedestrian crossings, bringing the total number of traffic signals in Prague to 612. The number of traffic signals on the tram network grew by five over the past year, with the number of traffic signals with tram right-of-way increasing by 6 and the number giving priority to buses by 23 (see Chapter 7).

Basic data on traffic signals in Prague

Total in Prague	Stand-alone pedestrian crossings	Centrally controlled
612	118	294
On tram network	**Tram right-of-way**	**Bus right-of-way**
238	164	167
Number of new and refurbished traffic signals in 2012		
18 new, of which 6 at new stand-alone pedestrian crossings		19 refurbished

New traffic signals were installed in 2012 in connection with the refurbishing of Michelská street at the previously unpredictable intersection of Michelská and U Plynárny, as well as at the intersection Michelská – Ohradní. The complicated situations arising from the uncontrolled traffic at the intersection Kutnohorská – K Měcholupům were helped by the installation of traffic signals. In connection with the construction of the City Ring Road, Letenské náměstí and the surrounding streets were given a facelift and a new traffic signal was installed at the intersection Milady Horákové – U Sparty. A stand-alone light-controlled pedestrian crossing across Zenklova ulice at the stop Okrouhlická makes it safer for pedestrians to cross the street.

New traffic signal 4.475 U plynárny – Michelská

Refurbished traffic signal 7.155 Letenské náměstí

The refurbishing of traffic signals continued in 2012. The most important of these were at the highly trafficked intersections Vinohradská – Jičínská (Flora) and Generála Šišky – Československého exilu. Refurbishing of the intersection and traffic signal 7.208 at nábřeží Kapitána Jaroše – Dukelských hrdinů led to increased safety for both pedestrians and cyclists. Important renovations were also done at the intersection on Letenské náměstí. At náměstí I. P. Pavlova, on Revoluční and by the Karlův most, devices were installed to count down the time until the “walk” or “don’t walk” symbol on the pedestrian traffic signal.

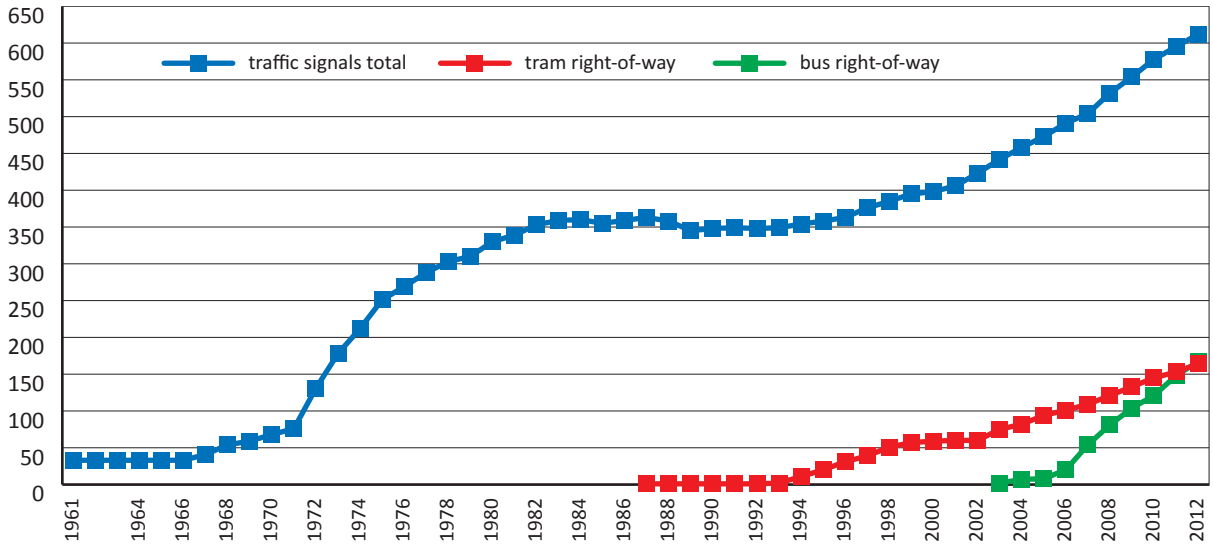
Newly installed traffic signals in Prague

0.092	Kutnohorská – K Měcholupům	5.594	Vrchlického – crossing Mahenova
0.350	Vinohradská – crossing Vinohradské hřbitovy	7.102	Milady Horákové – U Sparty
0.383	Počernická – Cerhenická	8.231	Zenklova – crossing Okrouhlická
0.720	U Slavie – Vladivostocká	8.700	Rohanské nábřeží – Thámova
2.062	Jaromírova – crossing Svatoplukova	8.922	Kostelecká – ramps Cínovecká west
4.474	Komořanská – crossing K modřanskému nádraží	9.634	Českobrodská – shopping centre
4.475	U plynárny – Michelská	9.641	Chlumecká – underpass north
4.722	Generála Šišky – crossing Sídliště Libuš	9.680	Chlumecká – parking „A“
4.728	Michelská – Ohradní	9.696	Chlumecká – parking „C“

Refurbished traffic signals in Prague

2.076	Vnislavova – crossing Přemyslova	5.589a	Výpadová – Vrážská
2.362	náměstí Míru – Jugoslávská	5.589b	Karlická – crossing at nám. Osvoboditelů
3.309	Vinohradská – Jičínská (Flora)	6.128	Karlovarská – Bílá Hora loop
3.613	Vinohradská – Pod židovskými hřbitovy	6.152	Patočkova – crossing Meziškolská
4.403	Vídeňská – crossing at stop Ústav mateřství	6.917	Slánská – Bazovského
4.450	Generála Šišky – Československého exilu	7.028	nábřeží Kpt. Jaroše – Dukelských hrdinů
4.471	Michelská – crossing at No. 7	7.155	Letenské náměstí
5.518	Podbělohorská – Nad Klamovkou	7.163	Dukelských hrdinů – Kostelní
5.554	Jeremiášova – Radlická	9.396	Českobrodská – ramp to Průmyslová
5.555	Bucharova – K Hájům		

Development of number of traffic signals and those with preference for public transport vehicles



Development of basic data on traffic signals in Prague

Year	1961	1971	1981	1990	2000	2005	2006	2007	2008	2009	2010	2011	2012
Traffic signals total	33	76	339	348	398	473	491	504	532	554	578	594	**612**
Stand-alone crossings	-	9	37	45	57	72	76	78	86	96	108	112	**118**
Centrally controlled	-	-	-	20	116	192	212	218	231	236	270	283	**294**
With tram right-of-way	-	-	-	1	59	94	101	109	121	133	145	158	**164**
With bus right-of-way	-	-	-	-	-	8	20	53	81	104	121	144	**167**

6.2 Control centres

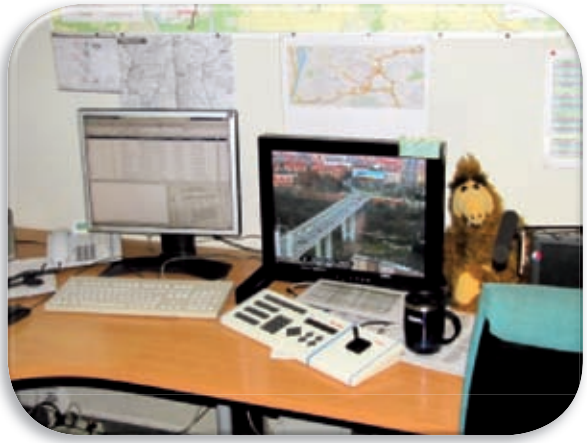
The system of central traffic management in the city is administered by the Technical Administration of Roads of the City of Prague – Department of Transportation Engineering. The Urban Traffic Control Centre (UTCC) is located in the MHD Central Dispatching building on the street Na bojišti in Prague 2.

As of 31 December 2012, a total of 294 traffic signals were connected to the UTCC Prague via the various Area Traffic Control Centres (ATCC). It was thus possible to control nearly half (48 %) of all the traffic signals installed in Prague's streets from the top level. The connection of further traffic signals continued throughout the year.

List of ATCCs in Prague, their control systems and number of traffic signals connected

Control area	Name of ATCC	Jurisdiction	Number of traffic signals	Control system
C1a	Na bojišti	Centre 1, right bank	65	SCALA
C1b	Těšnov	Centre 1, right bank	17	VRS 2100
C1c	Na Moráni	Centre 1, right bank	14	VRS 2100
C2	Smíchov	Centre 2, left bank	80	SCALA
C3	Holešovice	Centre 3, Holešovice	28	VRS 2100
V	Libeň	East	33	VRS 2100
S	Ládví	North	26	SCALA
J	Pankrác	South	1	SCALA
JZ	Nové Butovice	Southwest	3	SCALA
JV	Skalka	Southeast	5	SCALA
SZ	Dejvická	Northwest	1	SCALA
SZ	Na bojišti (temporary)	Northwest	21	SCALA

Main hall of UTCC Prague



TIC Prague

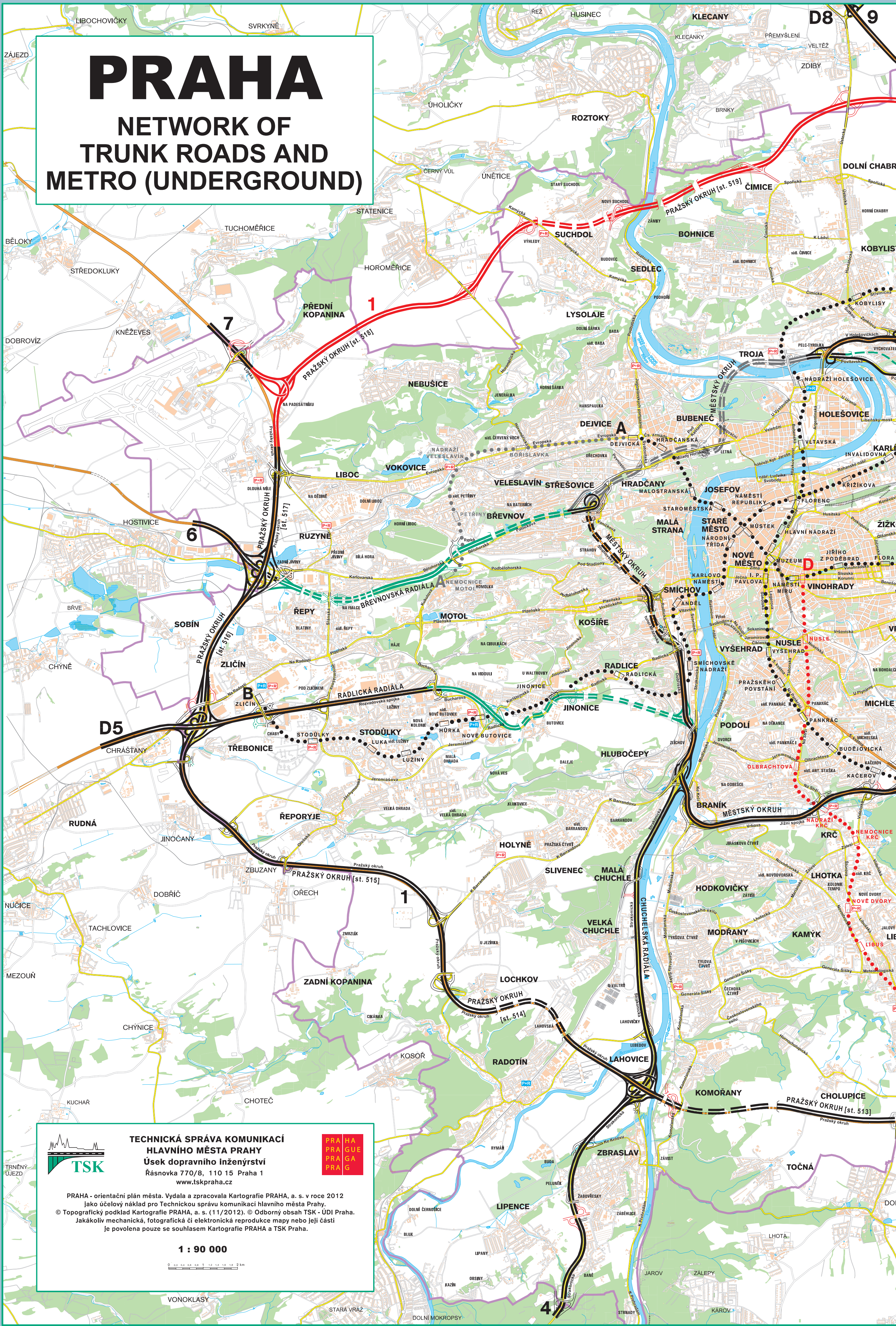
6.3 Traffic Information Centre (TIC) Prague

TIC Prague has been in operation since 1 July 2005, offering information services in monitoring and classifying traffic levels, providing information on planned long-term closures and exceptional circumstances on the road network and providing output from the city's information database, primarily for websites. The sources of data for the information distributed are the UTCC Prague systems and a number of devices installed on the streets.

Another important TIC Prague service for drivers is RDS-TMC (Radio Data System – Traffic Message Channel), which is able to display current traffic information on navigation maps inside vehicles and adapt routes to the current situation. The appearance of the messages (broadcasting is provided in cooperation with Czech Radio) is completely standardised according to the international ALERT C

PRAHA

NETWORK OF TRUNK ROADS AND METRO (UNDERGROUND)



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PRAHA - orientační plán města. Vydala a zpracovala Kartografie PRAHA, a. s. v roce 2012 jako účelový náklad pro Technickou správu komunikací hlavního města Prahy.

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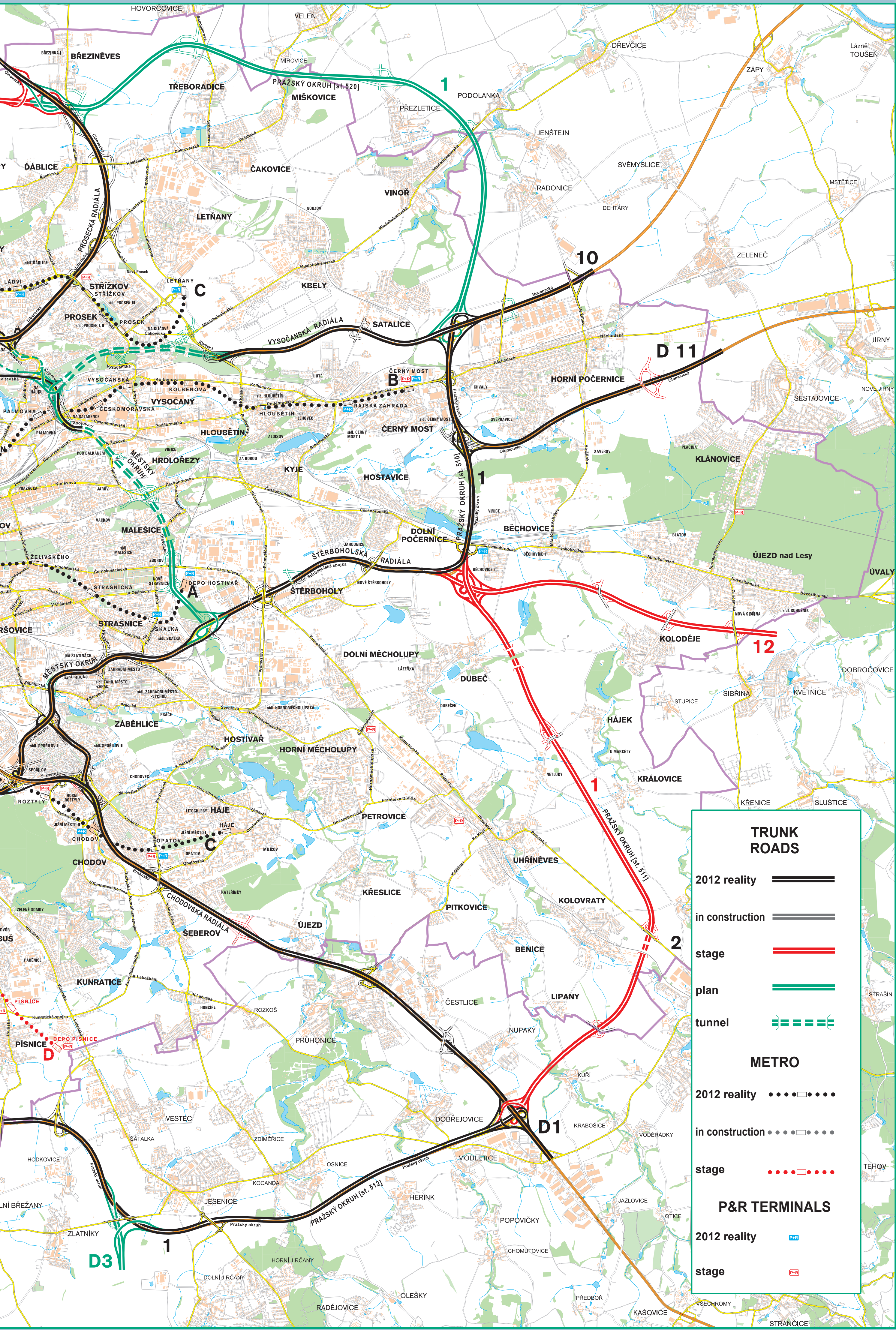


TRUNK ROADS
2012 reality
in construction
stage
plan
tunnel
METRO
2012 reality
in construction
stage
P&R TERMINALS
2012 reality
stage
PRAŽSKÝ OKRUH [st. 520]
PRAŽSKÝ OKRUH [st. 510]
PRAŽSKÝ OKRUH [st. 511]
PRAŽSKÝ OKRUH [st. 512]
VYSOČANSKÁ RADIÁLA
PROSECKÁ RADIÁLA
ŠTĚRBOHOLSKÁ RADIÁLA
CHODOVSKÁ RADIÁLA
MĚSTSKÝ OKRUH
DEPO HOSTIVAŘ
DEPO PÍSNICE
1
2
10
12
D 11
D1
D3
A
B
C
D
HOVORČOVICE
BŘEZINĚVES
TŘEBORADICE
MIŠKOVICE
VELEŇ
MIROVICE
PODOLANKA
PŘEZLETICE
DŘEVČICE
ZÁPY
Lázně TOUŠEŇ
JENŠTEJN
SVÉMYSLICE
RADONICE
DEHTÁRY
MSTĚTICE
ZELENEČ
ĎÁBLICE
ČAKOVICE
VINOŘ
LETŇANY
KBELY
STŘÍŽKOV
PROSEK
SATALICE
JIRNY
HORNÍ POČERNICE
NOVÉ JIRNY
ŠESTAJOVICE
VYSOČANY
KOLBENOVA
HLOUBĚTÍN
ČERNÝ MOST
RAJSKÁ ZAHRADA
PALMOVKA
ČESKOMORAVSKÁ
HRDLOŘEZY
KYJE
HOSTAVICE
KLÁNOVICE
MALEŠICE
DOLNÍ POČERNICE
BĚCHOVICE
ÚJEZD nad Lesy
ÚVALY
ŽELIVSKÉHO
STRAŠNICKÁ
STRAŠNICE
SKALKA
ŠTĚRBOHOLY
KOLODĚJE
DOLNÍ MĚCHOLUPY
DUBEČ
DOBROČOVICE
SIBŘINA
KVĚTNICE
STUPICE
HÁJEK
KRÁLOVICE
ZÁBĚHLICE
HOSTIVAŘ
HORNÍ MĚCHOLUPY
PETROVICE
ROZTYLY
HÁJE
OPATOV
CHODOV
UHŘÍNĚVES
KŘENICE
SLUŠTICE
KŘESLICE
PITKOVICE
KOLOVRATY
ŠEBEROV
ÚJEZD
BENICE
KUNRATICE
ČESTLICE
LIPANY
STRAŠÍN
PÍSNICE
PRŮHONICE
NUPAKY
ROZKOŠ
KUŘÍ
VESTEC
DOBŘEJOVICE
KRABOŠICE
VODĚRÁDKY
ŠÁTALKA
ZDIMĚŘICE
MODLETICE
HODKOVICE
OSNICE
KOCANDA
HERINK
JESENICE
JAŽLOVICE
OTICE
TEHOV
ZLATNÍKY
POPOVIČKY
CHOMUTOVICE
HORNÍ JIRČANY
DOLNÍ JIRČANY
OLEŠKY
RADĚJOVICE
PŘEDBOŘ
KAŠOVICE
VŠECHROMY
STRANČICE

standards. RDS-TMC broadcasting was launched for the territory of Prague in 2005, making it the first such site in the Czech Republic and in the whole former Eastern Europe.

Since 1 September 2010, TIC Prague has been operated exclusively by employees of TSK and the activity of dispatchers was expanded to include checking the information entered into the TIC Prague editing system, servicing the system of devices for traffic information (DTI), recording any differences between the automatically generated information and the actual situation, and last but not least monitoring alternative sources of traffic information and entering the ascertained facts into the editing system. A new aspect of the work of dispatchers is verifying the automatic traffic scenarios with the proposed measures for providing traffic information through the DTIs.

Current traffic information acquired from TIC Prague is used by City of Prague web traffic applications to create a traffic volume map, tables with traffic levels, to distribute screen captures from selected traffic cameras and to provide information about road restrictions and closures.

6.4 Other transport telematics systems and facilities

The transport telematics systems in the City of Prague also include television monitoring systems, variable information signs, devices for determining and providing travel time information, systems for high-speed weighing of freight vehicles (WIM), devices for speed measurement and capturing red-light violations, strategic spot and sectional detectors and weather detectors.

Television monitoring systems in City of Prague (TVD)

System	Cameras	System description	As of
TVD-TSK	272	Monitoring of traffic situation – run by TSK	31 Dec 2012
MKS	748	Monitoring of safety situation – run by City Hall Crisis Management Department	25 June 2012
DP	1 200	Monitoring situation in metro – run by DPP	31 Dec 2011

The centre of the **TVD-TSK camera monitoring system** is the Urban Traffic Control Centre and the main users are the dispatchers at UTCC and TIC Prague. Of the overall count of 272 traffic monitoring cameras, 140 have a video detection function. Of these 94 are located in Prague's road tunnels (46 in the Strahov tunnel, 31 in Mrázovka tunnel, 11 in the Letná tunnel and 6 in the Zlíchov automobile tunnel). Using a software definition of potential events that could take place within the camera's field of vision, these cameras can detect a stopped vehicle, recognise emerging congestion or identify an object on the carriageway that is blocking traffic. The remaining 46 video detection cameras are located on the Jižní spojka, on the streets Spořilovská and 5. května, and as of 2012 also on the streets Průmyslová, Kbelská, Strakonická and Štěrboholská radial road. These are cameras of the Comprehensive Telematic Monitoring System (CTMS) and they can be rotated and used by operators for general traffic monitoring as well. In 2012 a total of 26 cameras of this type were added. Stills from 129 TSK traffic cameras are available along with other traffic information TSK Prague website. The process of digitising TSK's traffic cameras and integrating them into the city-wide Municipal Camera System continues.

DTI Karlovarská

DTI Vinohradská

Devices for traffic information (DTI – formerly VIS) – goal for completion of OPD project			
Number	Location	Number	Location
ZPI-001	City Ring Road 2.5 km heading west	ZPI-522	Radlická
ZPI-002	City Ring Road 2.5 km heading east	ZPI-523	Vrchlického
ZPI-011	Štěrboholy Radial Road 1	ZPI-531	Strakonická 3
ZPI-012	Štěrboholy Radial Road 2	ZPI-532	Hořejší nábřeží
ZPI-021	Černokostelecká	ZPI-533	Dienzenhoferovy sady
ZPI-022	Vinohradská	ZPI-611	Karlovarská
ZPI-121	Hlávkův most	ZPI-612	Patočkova 1
ZPI-122	Wilsonova 1	ZPI-621	Evropská 1
ZPI-123	Wilsonova 2	ZPI-622	Evropská 2
ZPI-131	Na Františku	ZPI-623	Podbabská
ZPI-321	Jana Želivského	ZPI-631	Patočkova 2
ZPI-401	City Ring Road 8.0 km heading west	ZPI-731	Korunovační
ZPI-402	City Ring Road 8.5 km heading east	ZPI-811	Cínovecká
ZPI-411	5. května 1	ZPI-812	Liberecká
ZPI-412	Spořilovská	ZPI-813	V Holešovičkách
ZPI-421	Vídeňská	ZPI-821	Rohanské nábřeží
ZPI-423	Modřanská 1	ZPI-831	Nad Šutkou
ZPI-431	5. května 2	ZPI-911	Novopacká
ZPI-432	5. května 3	ZPI-921	Mladoboleslavská
ZPI-433	Modřanská 3	ZPI-922	Chlumecká 1
ZPI-434	Modřanská 2	ZPI-923	Chlumecká 2
ZPI-501	City Ring Road 11.0 km heading north	ZPI-924	Poděbradská
ZPI-502	City Ring Road 11.5 km heading south	ZPI-925	Českobrodská 2
ZPI-503	City Ring Road 12.0 km heading north	ZPI-926	Českobrodská 1
ZPI-511	Strakonická 1	ZPI-931	Kbelská
ZPI-512	Strakonická 2	ZPI-932	Průmyslová 1
ZPI-513	Rozvadovská spojka 1	ZPI-933	Průmyslová 2
ZPI-514	Rozvadovská spojka 2	tun. ZPI 1	Strahov tunnel
ZPI-521	K Barrandovu	tun. ZPI 2	Malovanka interchange

Also serving to directly or indirectly manage and influence traffic in Prague are the **devices for traffic information – DTI** (formerly VIS – variable information sign). In the last quarter of 2012 construction was started on 37 new DTIs on the road network in Prague and existing DTIs in 17 locations began to be refurbished. A further 4 DTIs were already in operation from the preceding period. Following completion of the project in the first half of 2013 there will be a total of 58 DTIs located around Prague.

The devices are installed with the goal of providing information on the situation immediately in front of the driver, about exceptional circumstances, restrictions and closures. The placement of DTIs is planned with regard for the important points where a decision must be made so that drivers can re-evaluate their route choice in time. At periods of calm when there are no exceptional circumstances to display, the tables are designed to show information on travel times to important destinations or about the occupancy in nearby P+R lots. If no information needs to be provided, the DTI displays the current time to indicate that it is in working order. Three of the signs being built are large-scale (approx. 3x4 m) and allow for full-colour display of easy-to-understand congestion maps of the connecting road network. The majority of DTIs are also equipped with adjustable traffic symbols allowing them to display the appropriate warning symbol according to the type of situation.

Devices for determining and providing information on travel times	
Street (section)	**Street (section)**
Evropská (Nová Šárka – Vítězné nám.)	Strakonická (Zbraslav – Barrandovský most)
Jižní spojka (cable bridge – K Barrandovu)	Cínovecká, V Holešovičkách (Kostelecká – Povltavská)
K Barrandovu, Jižní spojka (K Holyni – 5. května)	Horňátecká, V Holešovičkách (Kobylisy – Povltavská)
Karlovarská, Patočkova (Drnovská – Strahov tunnel)	Průmyslová, Kbelská (Průmyslová – Cínovecká)
5. května, Jižní spojka (Ryšavého – Barrandovský most)	Kbelská, Průmyslová (Cínovecká – Jižní spojka)

The same camera technology is used for **measuring travel times** as is for measuring vehicle speed. Licence plate recognition does not serve for restrictive measures in this case, but to inform drivers. The travel time is calculated automatically from the licence plates without any human intervention and the licence plate photos are immediately erased from the system. As of 31 December 2012, there were ten road sections where drivers were provided with information on the current expected trip time between two points. Added in 2012 were sections in both directions on Průmyslová and Kbelská between Jižní spojka and Cínovecká.

In connection with the gradual installation of new DTIs, which make it possible to display this information clearly, it is planned that information on travel times will be provided on up to approximately 75 road segments in Prague. This scale will allow them to significantly contribute to reducing the stress on drivers and help them select an appropriate alternative route.

Devices for high-speed weighing of freight vehicles (WIM)

Street (section)	Street (section)
Cínovecká (before Kostelecká, toward centre)	Strakonická (Výpadová – Dostihová, toward centre)
Karlovarská (before Drnovská, toward centre)	Štěrboholská spojka (Nedokončená – Průmyslová, toward centre)
K Barrandovu (before Ke Smíchovu, toward centre)	Rozvadovská spojka (before Řeznická, toward centre)
Kbelská (before Prosecká, toward Průmyslová)	

The principle of the **system of weighing vehicles while they are in motion** (WIM – Weigh-in-motion) is based on the measurement of the dynamic effects of individual wheels on the carriageway. Each wheel is measured several times on sensors while passing through the station and at the same time the speed, acceleration and deceleration are also determined. Signals from sensors (based on quartz crystals) located in the carriageway form the basis for establishing the weight. The system is calibrated by driving through vehicles with known wheel, axel and total weight, which then allow the weight of the axels and whole vehicle to be determined.

In 2012 this method of weighing vehicles was expanded by five locations on entry roads to the city that are important for freight transportation (Cínovecká, Karlovarská, Rozvadovská spojka, K Barrandovu, Štěrboholská spojka).

Section speed measurement

Number	Location	Number	Location
1	5. května – toward centre	15	Lipská – toward R7
2	Bělohorská – from centre	16	Lipská – toward Prague Outer Ring Road
3	Cínovecká – direction Holešovice	17	Patočkova – toward centre
4	Dobříšská – direction Barrandovský most	18	Poděbradská – toward centre
5	Dobříšská – direction tunel Mrázovka	19	Poděbradská – from centre
6	Dobříšská – sections 5 and 22 together	20	Podolské nábřeží – toward centre
7	Evropská – toward centre	21	Spořilovská – toward centre
8	Horoměřická – toward centre	22	Strahovský tunel – direction Mrázovka
9	Horoměřická – toward Horoměřice	23	Strahovský tunel – direction Patočkova
10	Jižní spojka 1 – by Vrbova ul., direction Krč	24	Strakonická – toward centre
11	Jižní spojka 2 – section 5. května – Chodovská	25	tunel Mrázovka – direction Barrandovský most
12	Jižní spojka 3 – Průmyslová – cable bridge	26	tunel Mrázovka – direction Strahovský tunel
13	Jižní spojka 4 – sections 8 and 9 together	27	Ústecká – from centre
14	Jižní spojka 5 – Spořilovská – 5. května	28	V Holešovičkách – from centre

Devices for **measuring speed on a road section** consist of a pair of gates with cameras that take a picture of the vehicle at the beginning and end of the section. On the basis of vehicle identification from the licence plate, the length of the section and the time data, the average speed is calculated.

At the end of 2012, speed was measured in this manner at 28 stretches in Prague. Four new sections were implemented – two on Lipská in both directions near the grade crossing (in the area Na Padesátníku) as well as two on Horoměřická, also in both directions.

Section speed measurement on Lipská street

Section and spot speed measurement on Horoměřická street

Spot speed measurement			
Number	**Location**	**Number**	**Location**
1	Horoměřická (by V Šáreckém údolí, from centre)	5	Sokolská (intersection with Ječná)
2	Horoměřická (by V Šáreckém údolí, into centre)	6	Strakonická (by ul. K zahradám, into centre)
3	K Barrandovu (intersection with Lamačova)	7	Střešovická (by Ořechovka stop, into centre)
4	Legerova (intersection with Rumunská)		

Spot speed measurement using one camera and a detection loop was first realised in Prague in 2010 near the Ořechovka tram stop in the direction toward the city centre. In 2012, restrictive profile speed measurement devices were installed at three locations (on Horoměřická in both directions in combination with sectional speed measurement and on Strakonická).

Intersections with system of documenting red-light violations			
Number	**Location**	**Number**	**Location**
0.612a	Černokostelecká – Průmyslová (NT)	5.529	Plzeňská – Jeremiášova
2.029	nám. I. P. Pavlova – Sokolská (NT)	5.569	K Barrandovu – Lamačova (NT)
2.069	Legerova – Rumunská (NT)	5.974	K Barrandovu – Ke Smíchovu (NT)
4.409	Chodovská – U plynárny	6.109	Čs. armády – crossing (pedestrian priority)
4.449	Chilská – Opatovská	6.122	Bělohorská – Kukulova (NT)
4.450	Generála Šišky – Československého exilu	8.278	Střelničná – Ďáblická
5.018	Jiráskův most – Janáčkovo nábřeží	9.223	Poděbradská – Kbelská (NT)
5.499	K Barrandovu – K Holyni (NT)	9.297	Kolbenova – Kbelská (NT)

NT = new camera technology allowing for recognising licence plates and stolen vehicles

At 16 intersections in the city, devices have been installed for detecting and **documenting the running of red lights**. In 2012 this device was added at the pedestrian crossing on ulice Čs. armády, where it tested recording the infractions of drivers who do not stop for pedestrians at the crosswalk.

Strategic spot detectors (SDDŘ), section detectors (SDDÚ) and weather detectors (KVD)		
Detectors	**No.**	**Description**
SDDÚ	23	Two gates with cameras designed for collection of data on a section.
SDDŘ	143	Video detectors placed on VO columns designed for collection of data on a spot.
KVD	28	Sensors monitoring meteorological data useful for drivers, e.g. winter road maintenance.

An important source of traffic data is the network of 166 **strategic traffic detectors** which covers the majority of main roads in the City of Prague. 23 of these are sectional (cameras that look like the system for section speed measurement) and 143 are for a specific spot (27 first generation + 108 that were 85 % financed from the EU Operational Programme Transportation under the project “Urban Road Traffic Management and Regulation System for the City of Prague” + 8 built into the entry radial roads into Prague as part of the project “Harmonisation of Telematic Systems on the City Ring Road and Radial Roads” in 2012).

7 PRIORITY FOR PUBLIC TRANSPORT VEHICLES

Implementation of priority for public transport vehicles has been ongoing in Prague since the beginning of the 1990s based on the "City of Prague Transportation Policy Principles". This process helps maintain a positive ratio of persons transported by mass transit in relation to individual transportation. It also helps keep public transport flowing smoothly and transportation quality standards high.

7.1 Priority for public transport vehicles at traffic signals

New and refurbished traffic signals are now by default equipped with technology that allows the right-of-way to be given to public transport vehicles. These vehicles thus have the option of first choice and extended green lights in real time according to their needs, in order that they can pass through controlled intersections without stopping where possible, or with only a minimum of delay.

Traffic signals with tram priority – basic data

Total on tram network	With tram priority	With absolute* tram priority	With conditional* tram priority
238 TS (100.0 %)	164 TS (68.9 %)	59 TS (24.8 %)	105 TS (44.1 %)
year 2012: +5 traffic signals	year 2012: +6 TS	year 2012: -1 TS	year 2012: +7 TS

** Absolute priority means that the tram will pass through the intersection without stopping; conditional means that a tram will be given the green at the earliest possible moment dependent on the prior demands at the other branches of the intersection.*

Five new traffic signals were built on the tram network in 2012, all of which had **priority for trams**. The number of signals with conditional right-of-way grew by seven (new signals +4, refurbished +1, reprogrammed +3, change of priority from absolute to conditional +2, priority taken away -3). The greatest boon to smooth tram service was the introduction of conditional priority at three intersections around Výtoň and at the entrance and exit of the Bílá Hora turn-around.

The number of traffic signals with absolute preference fell by one in 2012 (new signal +1, change of priority to conditional -2). The percentage of intersections with some form of tram priority reached 69 %.

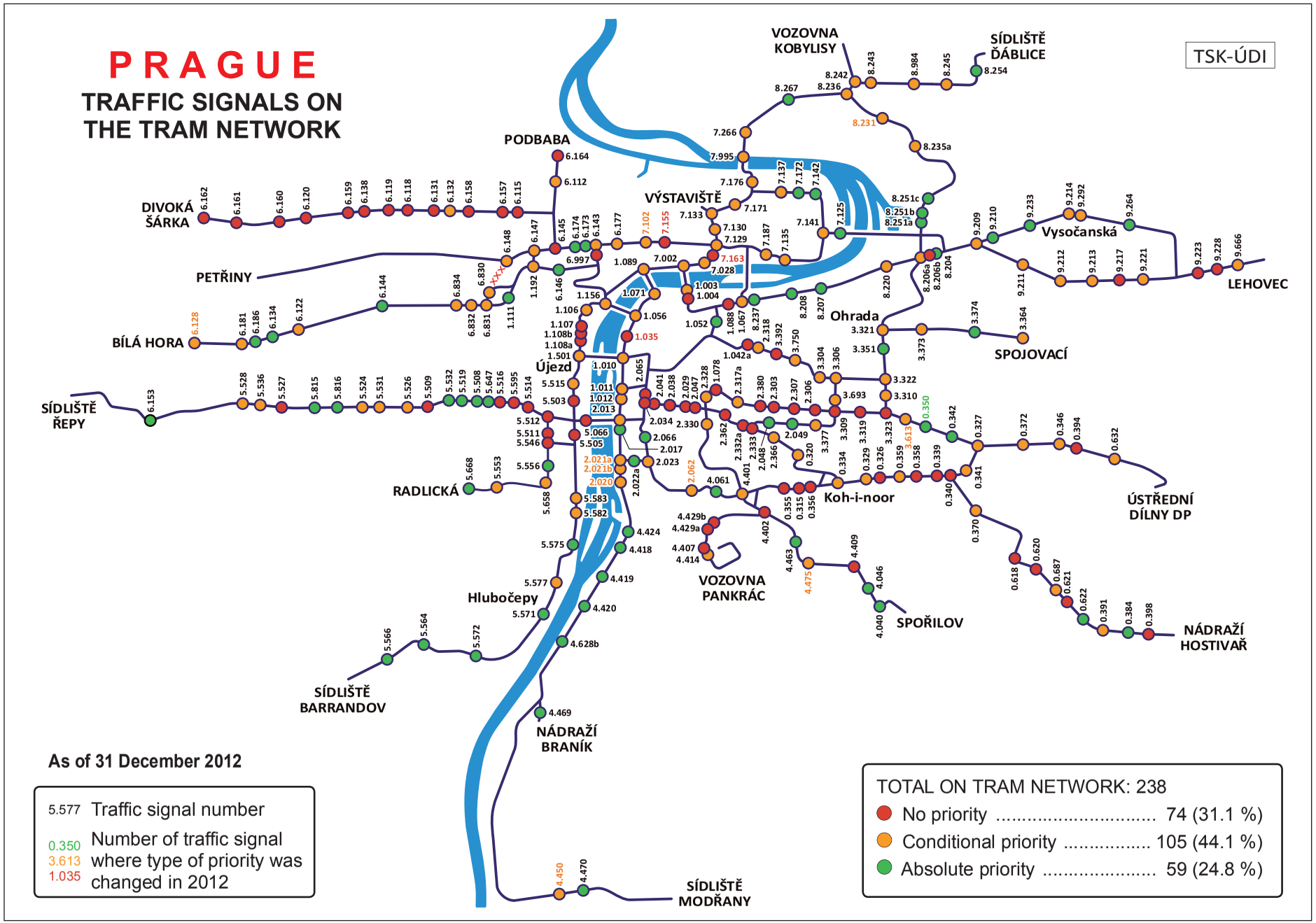
Traffic signal 8.231 Zenklova – Okrouhlická crossing

TS 0.350 Vinohradská – Vinohradské hřbitovy crossing

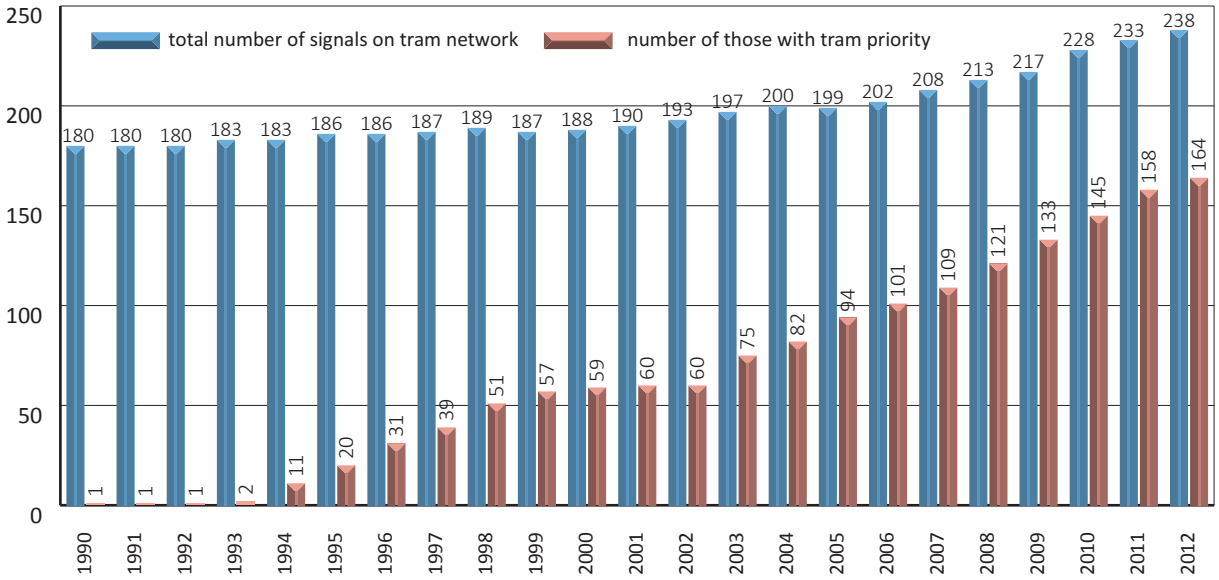
Intersections where tram priority was implemented in 2012

0.350*	Vinohradská – crossing Vinohradské hřbitovy (A)	4.475*	U plynárny – Michelská (C)
2.020	Rašínovo nábřeží – Vnislavova (C)	6.128	Karlovarská – loop Bílá Hora (C)
2.021a	Výtoň (C)	7.102*	Milady Horákové – U Sparty (C)
2.021b	Rašínovo nábřeží – Libušina (C)	8.231*	Zenklova – crossing Okrouhlická (C)
2.062*	Jaromírova – crossing Svatoplukova (C)		

** traffic signal new in 2012 (C) … conditional priority (A) … absolute priority*


PRAGUE
TRAFFIC SIGNALS ON THE TRAM NETWORK
TSK-ÚDI
VOZOVNA KOBYLISY
SÍDLIŠTĚ ĎÁBLICE
PODBABA
VÝSTAVIŠTĚ
DIVOKÁ ŠÁRKA
PETŘINY
BÍLÁ HORA
Vysočanská
LEHOVEC
Ohrada
SPOJOVACÍ
Újezd
SÍDLIŠTĚ ŘEPY
RADLICKÁ
Koh-i-noor
ÚSTŘEDNÍ DÍLNY DP
Hlubočepy
VOZOVNA PANKRÁC
SPOŘILOV
NÁDRAŽÍ HOSTIVAŘ
SÍDLIŠTĚ BARRANDOV
NÁDRAŽÍ BRANÍK
SÍDLIŠTĚ MODŘANY
As of 31 December 2012
5.577 Traffic signal number
0.350 3.613 1.035 Number of traffic signal where type of priority was changed in 2012
TOTAL ON TRAM NETWORK: 238
No priority ..... 74 (31.1 %)
Conditional priority ..... 105 (44.1 %)
Absolute priority ..... 59 (24.8 %)

Traffic signals on the tram network



Bus priority at traffic signals – basic data

With bus priority	With active* bus detection	With passive* bus detection
167 TS (100 %)	160 TS (94.7 %)	7 TS (5.3 %)
year 2012: +23 TS	year 2012: +25 TS	year 2012: -2 TS

* *Passive detections means buses are detected in a special lane through classic vehicle loop detection. Active detection works on the basis of radio communication between the vehicle and the traffic signal controller. An infrared beacon is used to locate vehicles approaching the intersection.*

Bus priority was put in place at the first pair of intersections in Prague in 2003 as part of the city's participation in the Trendsetter project. After that bus priority was primarily implemented at the traffic signals around the new sections of the metro, more recently it has become the standard for most new or refurbished traffic signals. In 2012, 23 new traffic signals were added where buses are given priority using active detection. At traffic signals 3.613 Vinohradská – Pod žižkovskými hřbitovy and 5.506 Strakonická – Nádražní there was a change from passive to active priority.

Intersections where bus priority was implemented in 2012

0.350	Vinohradská – crossing Vinohradské hřbitovy	5.518	Podbělohorská – Nad Klamovkou
0.383	Počernická – Cerhenická	5.554	Jeremiášova – Radlická
0.720	U Slavie – Vladivostocká	5.555	Bucharova – K Hájům
3.364	Koněvova – Spojovací	5.589a	Výpadová – Vrážská
4.403	Vídeňská – crossing by stop Ústav mateřství	5.589b	Karlická – crossing nám. Osvoboditelů
4.434	Vyskočilova – Želetavská	6.152	Patočkova – crossing Meziškolská
4.437	Michelská – Podle Kačerova	9.226	Spojovací – K Žižkovu
4.450	Generála Šišky – Čs. exilu	9.634	Českobrodská – shopping centre
4.463	Nuselská – Mendíků	9.641	Chlumecká – north underpass
4.471	Michelská – crossing	9.680	Chlumecká – parking "A"
4.475	Michelská – U plynárny	9.696	Chlumecká – parking "C"
4.728	Michelská – Ohradní		

Traffic signals on the bus network

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of signals with bus priority	0	8	20	53	81	104	121	144	**167**

Bus at TS 0.720 U Slavie – Vladivostocká

TS 4.475 Michelská – U plynárny

7.2 Other measures for public transport vehicle priority

An important indicator of the quality of public transport in a city is the degree to which public mass transport is separated from individual transport. For trams, reduction of the number of areas with mixed traffic and an increase of public transport vehicle priority is achieved by constructing tracks on its own track bad, potentially also separated from other traffic by concrete dividers (in Prague 52 % of the 142.4 km of tram track is on its own track bed). For buses, greater fluidity is achieved with separated bus lanes.

Tram priority – raised thresholds along tram tracks

The first longitudinal divider used in Prague was a classic concrete kerbstone, built into the 50 m of carriageway on Bělehradská street before the intersection with Anglická in 1996. Low concrete separating thresholds with a cornered and later also narrowed design had reached a total length of 10 490 metres at the end of 2012. The newest additions are on the streets Jičínská (going north from the Flora intersection), Zenklova (ahead of the intersection with Klapkova heading into the centre) and around the intersection nábřeží Kapitána Jaroše – Dukelských hrdinů.

A raised media divider on nábř. Kpt. Jaroše

A bus at the tram stop Želivského

Bus priority – dedicated lanes

At the end of 2012 the total length of dedicated bus lanes had reached around 20 000 metres on roads (an increase of about 4 000 metres) and around 7 700 metres on tram track bed. Important bus lanes were implemented over the past year on the streets Opatovská, Rabakovská, Výstavní and on Barrandovský most heading from Smíchov to Braník. Buses now drive onto the tram tracks at, for example, the area of the Želivského stops, on Švehlova street before the intersection with the Jižní spojka ramp and on Plzeňská street in the segment Stroupežnického – Tomáškova.

8 ROAD TRAFFIC SAFETY

8.1 Traffic accidents

In 2012 there were 17 795 accidents recorded in Prague (+7 % compared to 2011), with 26 casualties (-33 %) and 2 245 injuries (+0 %). There were 630 accidents involving pedestrians (+5 %), with 12 persons killed (-30 %) and 613 injured (+12 %). Pedestrians themselves were at fault for 278 accidents (+13 %), resulting in 3 casualties (-57 %) and 251 injuries (+16 %).

The decisive majority of accidents were caused by drivers (17 206 of 17 795 accidents, or 97 %). The main causes of accidents caused by drivers were improper driving and failure to yield. The number of accidents where alcohol was detected in the culprit was 480 (-5 %).

Number, impact on health and main causes of traffic accidents in Prague

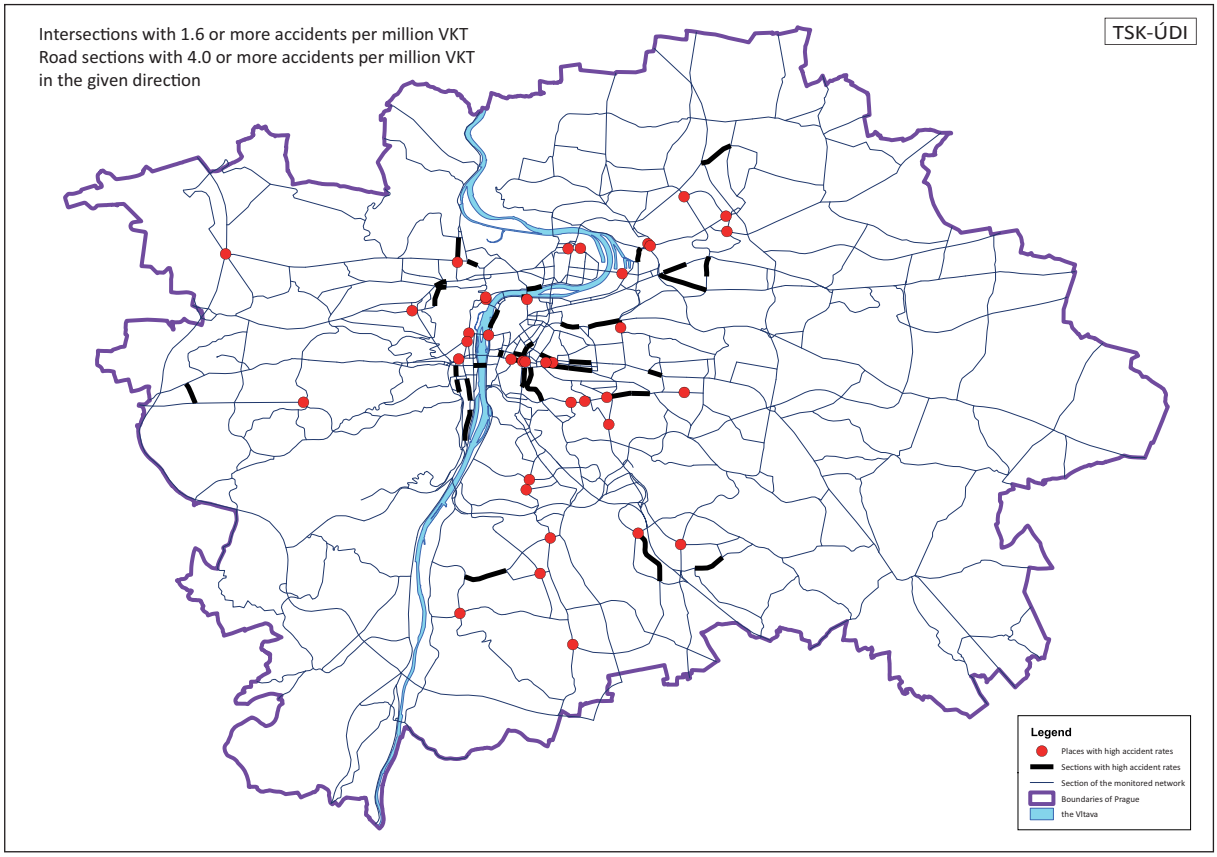
Year	2010	2011	2012	Diff. 12/11
Number of accidents	18 190	16 572	17 795	**+7 %**
Number of fatal injuries	29	39	26	**-33 %**
Number of serious injuries	279	279	236	**-15 %**
Number of minor injuries	1 893	1 962	2 009	**+2 %**
Number of accidents with injury	1 885	1 955	1 914	**-2 %**
Number of accidents without injury	16 305	14 617	15 881	**+9 %**
Number caused by the driver	17 555	15 991	17 206	**+8 %**
due to: failure to keep proper distance	3 240	2 848	3 266	**+15 %**
lack of due care and attention	2 784	2 506	2 367	**-5 %**
red-light violation	338	289	288	**0 %**
failure to yield in violation of a traffic sign	1 065	1 003	948	**-5 %**
failure to yield when making a left turn	577	525	577	**+10 %**
failure to yield when passing from lane to lane	1 444	1 215	1 185	**-2 %**
crossing speed limit	8	11	5	**-55 %**
failure to adapt speed to density of traffic	92	160	138	**-14 %**
failure to adapt speed to vehicle condition	101	126	118	**-6 %**
failure to adapt speed to road conditions (ice, potholes, wetness, mud, etc.)	1 172	682	785	**+15 %**
failure to adapt speed to road (turn, width, decline, incline, etc.)	152	194	163	**-16 %**
Caused by road defect	96	44	18	**-59 %**
Caused by pedestrian	262	245	278	**+13 %**
Caused by cyclist	72	105	98	**-7 %**

The basic trends in accident rate in 2012 can be characterised by a slight growth in the number of recorded accidents in comparison with the preceding year, a sharp drop in the number of fatalities, a decrease in the number of seriously injured persons and an almost unchanged number of minor injuries and accidents resulting in injury.

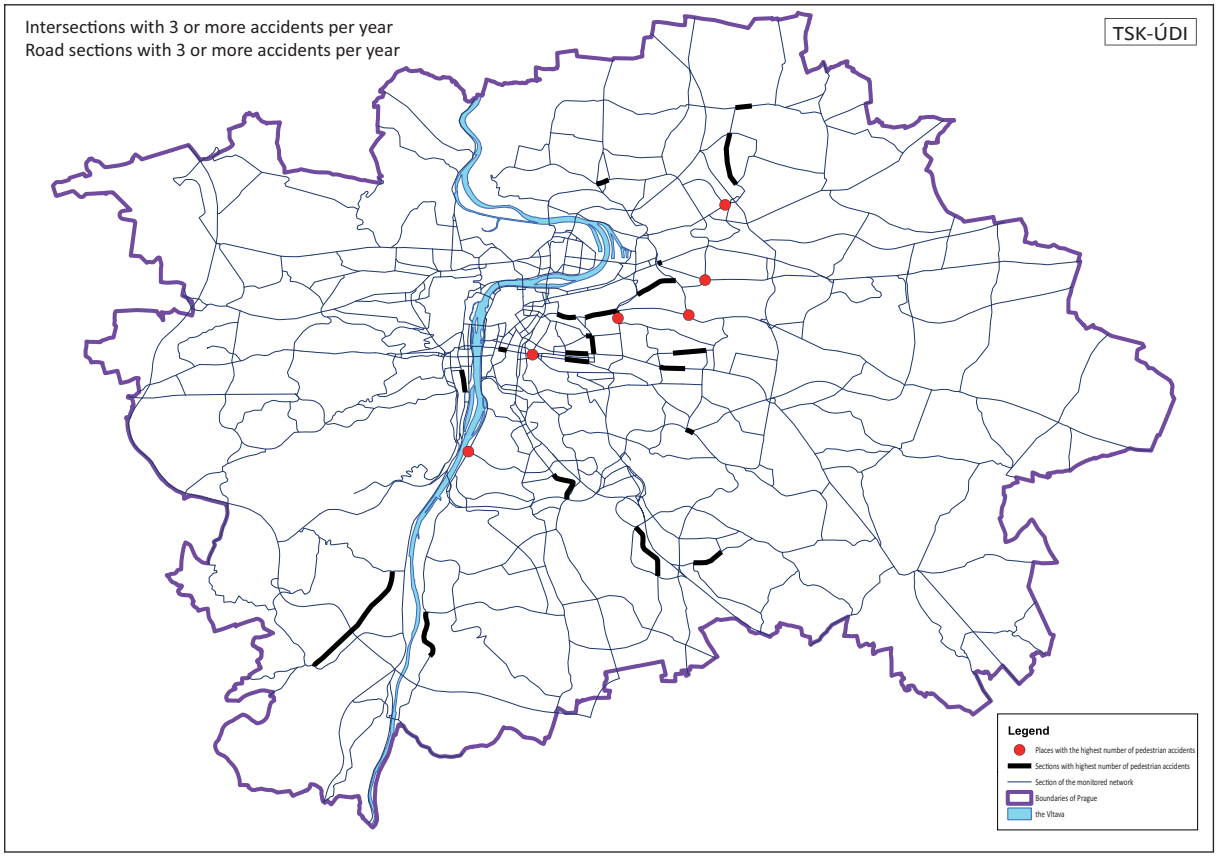
In assessing the long-term trends in accident rates it can be stated that from the 1960s through the 1980s, the long-term development of the accident rate was relatively positive, as the number of recorded traffic accidents roughly corresponded to the development of traffic volume and increased at a slower rate than traffic volume. In the 1990s the general tendency of development reversed to become quite negative, as the number of traffic accidents started growing more rapidly than the volume of traffic. This led to an increase in the risk of accident, expressed as an indicator of the relative accident rate (the number of accidents per million vehicle kilometres travelled).

Only after 2001 did the number of recorded traffic accidents begin to fall again, despite the ongoing rise in automobile traffic. The relative accident rate has also decreased, by 66 % in 2012 compared to 2000. In 2012 the Prague-wide average was 2.5 recorded accidents per million vehicle kilometres travelled.

Places and stretches with high accident rates in Prague in 2012



Places and stretches with the highest number of pedestrian accidents in Prague in 2012



The provisions of Act No 361/2000 Coll. on Road Traffic and its subsequent amendments have also had an influence on the marked drop in the number of recorded accidents since 2001, having several times changed the obligation to report an accident to the police. Traffic accidents without injury or damage to third party property need only be reported where the material damage exceeds the following amounts:

Until end of 2000	From January 2001	From July 2006	From January 2009
CZK 1 000	CZK 20 000	CZK 50 000	CZK 100 000

A positive trend in traffic safety is the reduction in the number of fatal, serious and minor injuries incurred in traffic accidents, despite the ongoing growth of automobile traffic in the city. The overall number of injuries in traffic accidents has fallen from 3 861 in 2000 to 2 271 in 2012, by 41 %, while in the same period automobile traffic in Prague has risen 31 %.

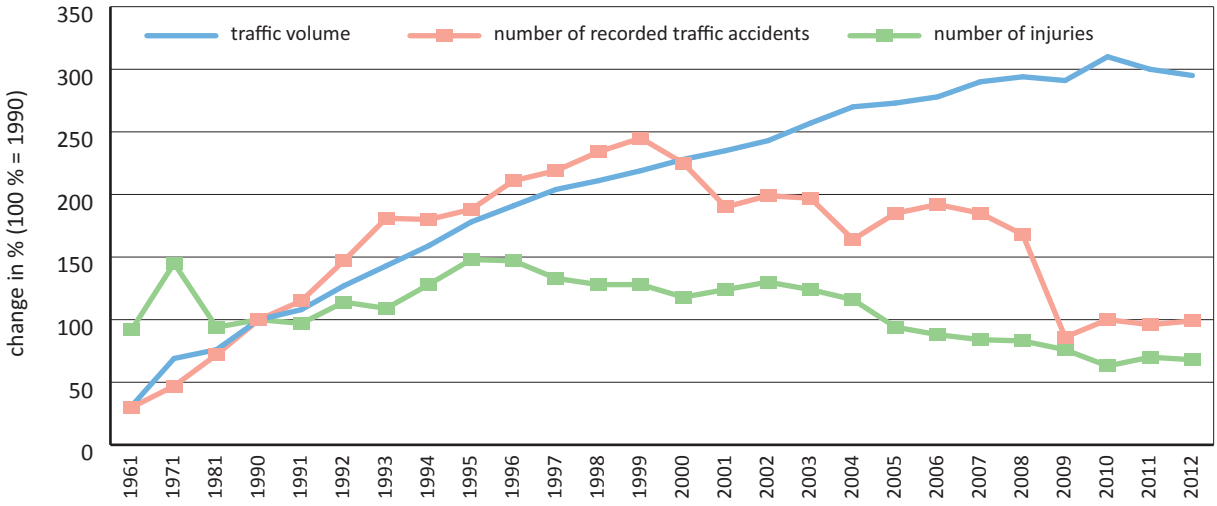
Also still positive is a comparison of the long-term trend in the number of injuries with the volume of automobile traffic. Over the past 22 years, automobile traffic has risen to triple 1990 levels (by 199 %), while the number of injuries in traffic accidents has fallen 31 % (from 3 269 injuries in 1990 to 2 271 in 2012), covering all kinds of injury – fatal, serious and minor.

Number of traffic accidents, injuries and relative accident rate in Prague

Year	Total accidents		Fatal injuries		Serious injuries		Minor injuries		Relative accident rate	Traffic volume (%)
	number	%	number	%	number	%	number	%		
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
2000	40 560	225	80	85	521	141	3 260	116	7.4	228
2010	18 190	101	29	31	279	76	1 893	67	2.5	304
2011	16 572	92	39	41	279	76	1 955	70	2.3	301
2012	**17 795**	**99**	**26**	**28**	**236**	**64**	**2 009**	**72**	**2.5**	**299**

100 % = 1990 Relative accident rate = number of accidents per million VKT (average values, whole road network in Prague)
Traffic volume = vehicle kilometres travelled on whole road network

Accidents, injuries and traffic volume in Prague 1961 – 2012 (whole road network, annual total)



8.2 Traffic education

A number of traffic education programmes took place in the City of Prague in 2012, above all for children and youth. A number of programmes were provided with the goal of helping increase

the effectiveness of traffic education at schools. A central aspect was education at child traffic playgrounds (hereinafter CTPs), as well as the programme for beginning cyclists (Young Cyclist Traffic Competition), traffic education shows for children and youth, interactive theatre presentations with traffic education themes and more.

Children were taught according to the thematic plan at nine permanent CTPs. This plan, drawn up by the Ministry of Transport, is binding for CTPs in all the regions of the Czech Republic. In 2012 a new CTP was opened in Prague 20. In 2012 a total of 45 972 primary school students went through organised training at Prague CTPs.

A programme for beginning cyclists – the Young Cyclist Traffic Competition (YCTC) – is held by the Ministry of Transport in cooperation with the Ministry of Education, Youth and Sport and is made up of four parts: tests on the rules of the road, a practical road test (in Prague these take place at child traffic playgrounds), a road skill test (a practical ride around various obstacles) and first aid knowledge. This event is primarily focused on primary school students in their senior years (ISCED 2 – grades 6-9) and the winning teams move on through district, city and national rounds to an international competition, which in 2012 took place in Bochnia, Poland. In 2012, 133 schools took part in the first round, a growth of 6.4 % over the previous year. The national round took place in Chomutov in the Ústí nad Labem Region.

District round of the YCTC in Prague 5

District round of the YCTC in Prague 9

Another form of prevention of traffic accidents is a series of traffic education shows for primary school children. In 2012, ten such shows were presented. Fifty-five interactive theatre performances of “The Fairytale Traffic Light” and “Aunt Berta’s Bike” were presented at the Police Museum. Children are pulled into the action, working together with actors and puppets. For the youngest age group this is a very interesting and effective form of traffic education.

A number of safety drives took place for adult participants of road traffic as well in 2012 (spring and autumn skill rides for the driving public, events for hearing-impaired motorists). Altogether there were seven events for adult drivers as well as several traffic safety events for the whole family. Seminars continued to be provided on methods of traffic education at schools, for CTP employees as well as for seniors, who were provided with reflective materials at the end of the sessions.

Another element of traffic education for adults is the driver training that every employer is required to provide within the meaning of the Labour Code for employees that drive a business or personal vehicle of up to 3.5 t while carrying out their work.

Bicycle bell-ringing

8.3 Measures to increase traffic safety

In 2012, a total of CZK 27.5 million was spent under the BESIP (road traffic safety) budget to implement measures to increase safety on the road network in Prague. These measures included minor structural modifications, modifications of traffic markings and the installation of traffic devices. Important modifications are performed both as investment projects and road maintenance.

Current expenditures (CZK 2.9 million spent in 2012) are designated in particular for installing assembled speed humps, performing carriageway surface roughening, modifying and placing crash barriers and railings, as well as for other non-structural traffic safety devices, in particular near schools and pedestrian crossings.

An amount of CZK 24.6 million was drawn for capital spending on construction of structural speed humps, installing extra lighting at pedestrian crossings and other primarily structural safety measures.

New traffic island at crossing on náměstí Míru

Crossing at the stop Divadlo Na Fidlovačce

Traffic islands making it easier for pedestrians to cross the street were built as part of a BESIP project at a cost of CZK 4.9 million at nám. Míru, Výstavní – Staňkova, Křesomyslova – Divadlo na Fidlovačce and Ke Smíchovu by the nursery and primary school. Long, structurally modified speed humps were installed at a cost of CZK 3.8 million in 2012 at the intersection Fibichova – Křížkovského and on Jeseniova in front of the primary school.

Extra lighting at pedestrian crossings was installed at a cost of CZK 3.4 million at ten locations (e.g. Výstavní – Staňkova, Českobrodská – Hrabačovská, Hrozenkovská – Vratičová, Goetheho – Českomalínská, Hornoměcholupská, Šrobarova – U Vinohradské nemocnice, Vrážská – MHD nádraží Radotín, Českobrodská – Lanžovská).

Other structural measures (financed including funding for general maintenance and other sources) that took place included, for example, the structural modification of the intersection Kutnohorská – K Měcholupům, installation of speed cushions (e.g. Klenovská, Brunelova), short assembled traffic humps (e.g. Nad Kazankou, Na Petřinách, Na Hanspaulce), traffic mirrors (e.g. Žampionová, Na dolinách, Milevská), traffic safety railings (Novodvorská, Ke Krči, Brněnská) and the modification of pedestrian crossings and other features as part of the Safe Routes to School programme. In 23 locations, particularly by schools and pedestrian crossings, modifications and refurbishing of traffic markings and equipment was carried out according to the demands of the individual municipal districts, road surfaces were treated using the “ROCBINDA” system (e.g. Jeremiášova – Mukařovského, Jeremiášova – Smíchovská), the carriageway was roughened (e.g. Mukařovského, Oistrachova, Čs. armády), and in eight locations current speed detectors were installed (e.g. Mladoboleslavská, Přátelství, Starodubečská, Podbělohorská, Argentinská).

Assembled traffic buttons on the street Na Petynce

9 CHANGES IN TRAFFIC ORGANISATION

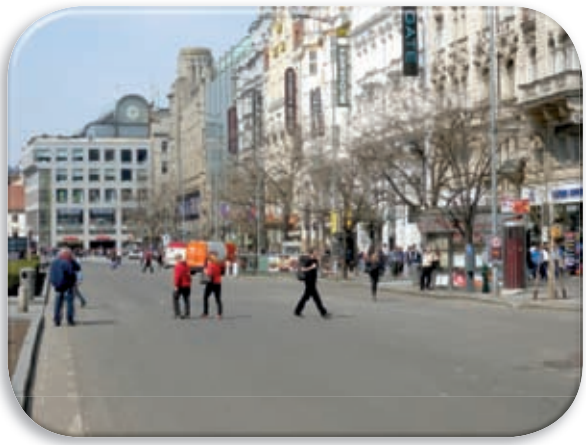
The most important **permanent change** to traffic organisation in 2012 was the opening in May of the complete grade-separated crossing Cínovecká – Kbelská – Veselská in Letňany.

The construction of the Letňany Interchange markedly improved the fluidity of this intersection, which along with the Průmyslová Half-Ring Road currently fills in for the as yet unimplemented northeast section of the Prague Outer Ring Road, and will evidently continue to do so for some time. This means that a great traffic load will be routed through here, including long-distance transit traffic, in particular in connection with the already opened new segment of Novopacká street (the Vysočany Radial Road).

In August of 2012, with continuing construction on the City Ring Road, the south part of Milady Horákové was opened in phases starting with the section from Špejchar to U Sparty and then up to Letenské náměstí. Over the course of September and October the north roadway was also opened and work was completed on refurbishing and renewing the connection of Šmeralova and Čechova streets.

At the end of December, as part of construction on the City Ring Road Malovanka – Špejchar, the north part of Patočkova in the direction toward Střešovická was opened in its definitive form all the way to the Malovanka Interchange, including telematic elements in the direction toward the Strahov tunnel, which helped considerably improve the fluidity of traffic on the streets Patočkova and Milady Horákové heading away from Prašný most.

Temporary embankment road during repairs on Rašínovo nábř.



Pedestrian zone on lower part of Václavské náměstí

Over the course of 2012, **short-term changes** continued to be made in traffic organisation due to construction of the City Ring Road and grade-separated intersections at Malovanka, Prašný most and Špejchar. Although these could be considered local in nature, they had a significant impact on the fluidity of traffic, not only on the roads of Prague 6, but of the whole northwest sector of the city.

Restrictions were in place for the whole year on the Štěrboholy Radial Road at the site of the future Rybníčky Interchange, as well as on Evropská and Kukulova in connection with the construction of stations on the V. A metro route from Dejvická to Motol. In the first half of the year there were restrictions on Zenklova during tram track refurbishment and on Kbelská and Veselská during construction of the Letňany Interchange. During the summer months there were significant traffic restrictions on Letenské náměstí including complete closure of Letenský tunel.

In the second half of the year there were traffic restrictions on the Prague Ring Road, specifically where the ramp from the D 11 joins up and at the Třebonice Interchange on the ramps from Rozvadovská spojka and the D 5. Traffic restrictions on Strakonická in connection with the construction of flood prevention walls lasted nearly the whole year and the complete closure of Michelská while it was being refurbished lasted until the end of November.

A significant change in traffic organisation in the centre of the city was the creation of a pedestrian zone on the lower half of Václavské náměstí from the start of April. The pedestrian zone leads from the lower closed-off part of Václavské náměstí up to the tram connection of Vodičkova and Jindřišská streets. The current closure of the way from Jindřišská to the square makes it impossible to use Václavské náměstí to cross through to Mezibranská street.

10 PARKING

10.1 Parking in the city centre

In the core of the city centre, over the whole territory of the municipal districts Prague 1, Prague 2, Prague 7 and the parts of Prague 3, the paid parking zones (PPZ) remained in place to the same extent as in 2010 – 2011.

The most important change to the operation of PPZs was the increased role of mixed zones. A mixed zone with a total of 15 spots was newly marked out in Prague 1. The number of vehicle spots in mixed zones fell on the other hand in Prague 2 (by 28 spots) and Prague 7 (by 19 spots).

The number of spots and parking meters in the PPZs within the city centre in the individual municipal districts in 2012 is shown in the following table:

Number of spots and parking meters

Zone	Orange zone		Green zone		Mixed zone						Blue zone	Total	
					Orange-blue		Green-blue		Total				
	of meters	of spots	of meters	of spots	of meters	of spots	of meters	of spots	of meters	of spots	of spots	park. meters	of spots
Prague 1	67	855	74	1 255	1	15			1	15	6 648	142	8 773
Prague 2	64	1 183	37	850			14	360	14	360	10 060	115	12 453
Prague 3	63	970	34	722			11	471	11	471	11 671	108	13 834
Prague 7	29	453	37	908	1	10	26	741	27	751	7 385	93	9 497
Total	**223**	**3 461**	**182**	**3 735**	**2**	**25**	**51**	**1 572**	**53**	**1 597**	**35 764**	**458**	**44 557**

Types of PPZ in the centre of Prague

	Blue zone*	Green zone	Orange zone	Mixed zone
Type of parking	Resident and subscriber parking	Paid parking	Paid parking	Combination of residential and paid parking
Time of parking	Long-term parking for holders of parking cards	Medium-term paid parking (6 hrs)	Short-term paid parking (2 hrs)	For holders of parking cards and for paid parking (during the day)
Users	Residents with permanent residence and businesses with place of business in the PPZ	Visitors to city centre	Visitors to city centre	Residents, business owners and visitors in order to have more uniform use of parking capacity

** At the borders of the PPZs in the city districts 1, 2 and 3 there are also so-called "intersecting zones" where residents and subscribers that are holders of valid parking cards in the neighbouring district can park.*

The blue zones are in operation daily from 8:00 until 6:00 of the next day. Only between 6:00 and 8:00 can spots in blue zones be used by vehicles without parking cards. During the day such vehicles may only park in these spots for a maximum of 3 minutes. Two-hour or ten-hour scratch cards may be purchased for making deliveries or performing services in blue zones.

The operating times, price and method of payment in green, orange and mixed zones are listed on the traffic sign and parking machines marked with the according zone colour.

As of the end of 2012, there were 44 557 spots for vehicle parking in PPZs within Prague, of which 35 764 (80 %) were reserved for residents and subscribers, 7 196 (16 %) for visitors and 1 597 (4 %) were mixed spots. The total number of spots in PPZs changes slightly over the course of the year, generally as a result of various road restrictions.

Number of spots, occupancy and respecting of zones in the centre of Prague in 2012*

City district	Blue zone			Orange and green zones			Mixed zone		
	of spots	Occ. coef.	Resp. coef.	of spots	Occ. coef.	Resp. coef.	of spots	Occ. coef.	Resp. coef.
Prague 1	6 648	79.1 %	84.5 %	2 110	77.0 %	46.7 %	15	85.5 %	71.4 %
Prague 2	10 060	74.9 %	89.4 %	2 033	63.9 %	52.6 %	360	56.5 %	64.9 %
Prague 3	11 671	67.8 %	89.1 %	1 692	57.9 %	58.8 %	471	34.8 %	67.8 %
Prague 7	7 385	71.7 %	91.7 %	1 361	58.9 %	50.0 %	751	68.9 %	74.9 %
Total	**35 764**	**73.4 %**	**88.7 %**	**7 196**	**63.7 %**	**52.0 %**	**1 597**	**60.9 %**	**65.4 %**

* *The occupancy coefficient expresses the percentage of full spots in the zone; the respect coefficient expresses the percentage of drivers who have duly paid the parking fee.*

A year-on-year comparison of changes to the occupancy and payment percentages in the blue (resident and subscriber) or orange and green (visitor) zones is carried out every December:

Comparison of changes in respect and payment rates

Blue zone	Prague 1		Prague 2		Prague 3		Prague 7	
	Coef. RSP	Coef. OCC	Coef. RSP	Coef. OCC	Coef. RSP	Coef. OCC	Coef. RSP	Coef. OCC
December 2011	87.1 %	77.2 %	91.5 %	73.6 %	87.7 %	70.1 %	93.2 %	70.9 %
December 2012	88.0 %	78.7 %	91.5 %	74.4 %	88.6 %	66.0 %	92.8 %	72.1 %
Zones with parking meters	**Prague 1**		**Prague 2**		**Prague 3**		**Prague 7**	
	Coef. RSP	Coef. OCC	Coef. RSP	Coef. OCC	Coef. RSP	Coef. OCC	Coef. RSP	Coef. OCC
December 2011	46.0 %	72.7 %	50.7 %	62.4 %	59.7 %	62.0 %	48.0 %	58.6 %
December 2012	48.2 %	74.0 %	50.1 %	62.0 %	46.5 %	58.1 %	47.6 %	56.8 %

10.2 Parking in the rest of the city

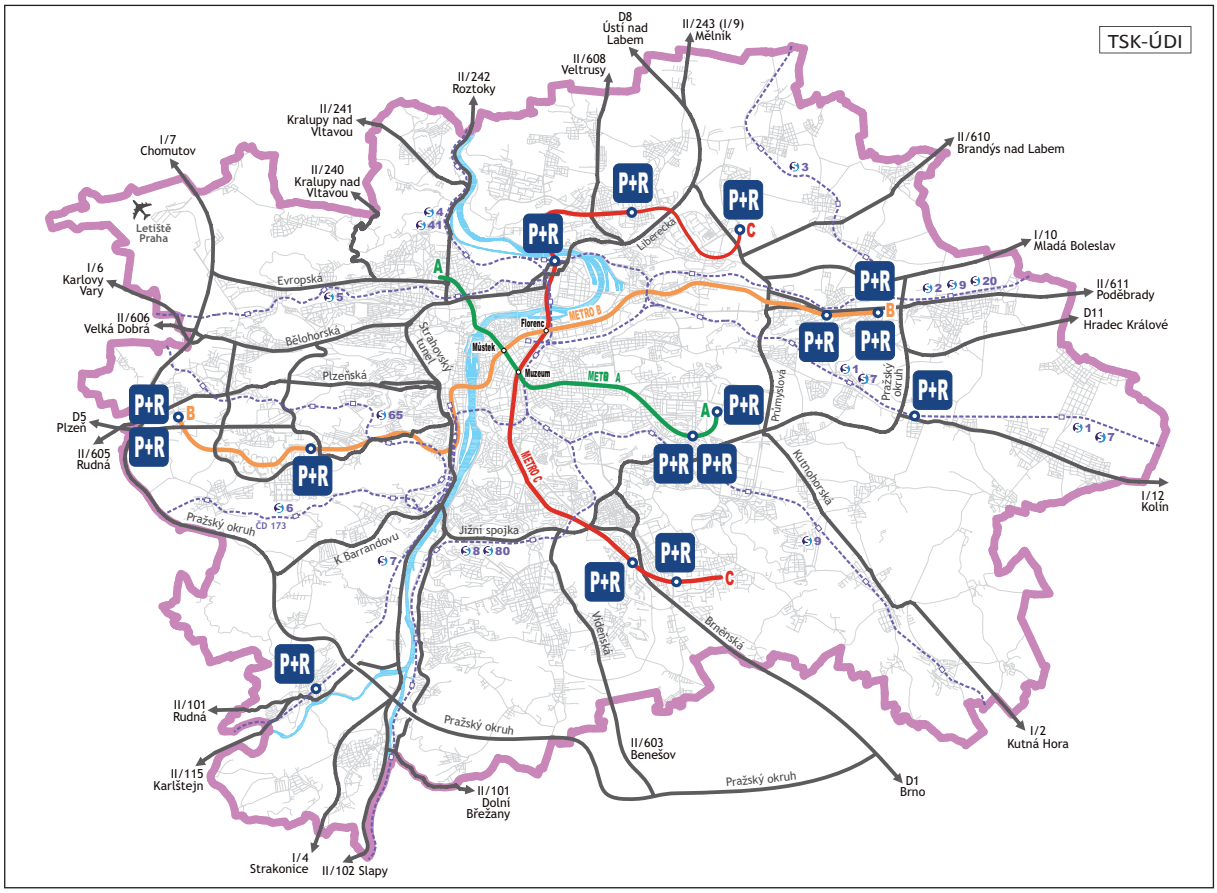
The basic characteristics of the parking situation in the rest of the city, particularly in those areas with multi-story buildings, are as follows:

- Demand for parking spaces considerably exceeds the existing supply. When new blocks of flats are built, new parking spots are created, but their number is generally not recorded.
- The lack of parking spaces around metro stations is made worse by the fact that existing spots are taken up by motorists from Prague and its surroundings driving to the metro.
- Full use is not made of the paid parking in existing parking garages.
- The number of parking spaces on roads and in parking garages is not recorded.
- The various city districts are ordering studies and projects to organise the parking situation or are updating existing documents. For example the Prague 10 municipal district distributed questionnaires to residents and from the resulting analysis of the parking situation concluded that there is a deficit of 18 000 parking spots. Prague 21 – Klánovice also prepared and approved a study of parking and traffic on its territory.

Both TSK and the municipal districts are looking for ways to increase the number of parking spots, particularly as part of construction projects on local roads. For example, in 2012 a total of 62 new parking spots were created in Prague 4 during the refurbishing of Michelská street, while in Prague 9 new parking spots were created by increasing the parking inlets on Kovanecká (11 spots) and Podvinný mlýn (3 spots) and placing grid panels that let through grass on the sidewalk on Poštovská street (6 spots). New parking spaces were also created on local streets in Prague 15 (Tenisová) and Prague 20 (Stoliňská).

10.3 Park and Ride facilities (P+R)

The system of P+R facilities offers a different method of travelling to the city centre than driving a personal car. It allows potential users to park their car at stations with high-capacity rail service and continue on to the centre of the city (or even to the other side of the city) by public mass transit. In many cases this combination provides the fastest possible way of travelling through the urban agglomeration.



The system of P+R lots in Prague has been in operation since 1997. The lots are guarded public parking lots with regulated hours.

As of 1 October 2012 , P+R Palmovka was closed (176 spots) due to the start of construction on a business centre and thus the P+R parking lot system comprises 16 lots.

P+R Nové Butovice

P+R Nádraží Holešovice

Basic data on the P+R system in Prague

Number of parking lots in P+R system	Total structural capacity	Number of spots per 1 million city residents
16 (13 locations)	3 008 spots	2 413
Permitted vehicles	**Operating hours**	**Daily rate**
personal cars, bicycles	4:00 – 1:00 (Běchovice 7:00 – 19:00)	CZK 20

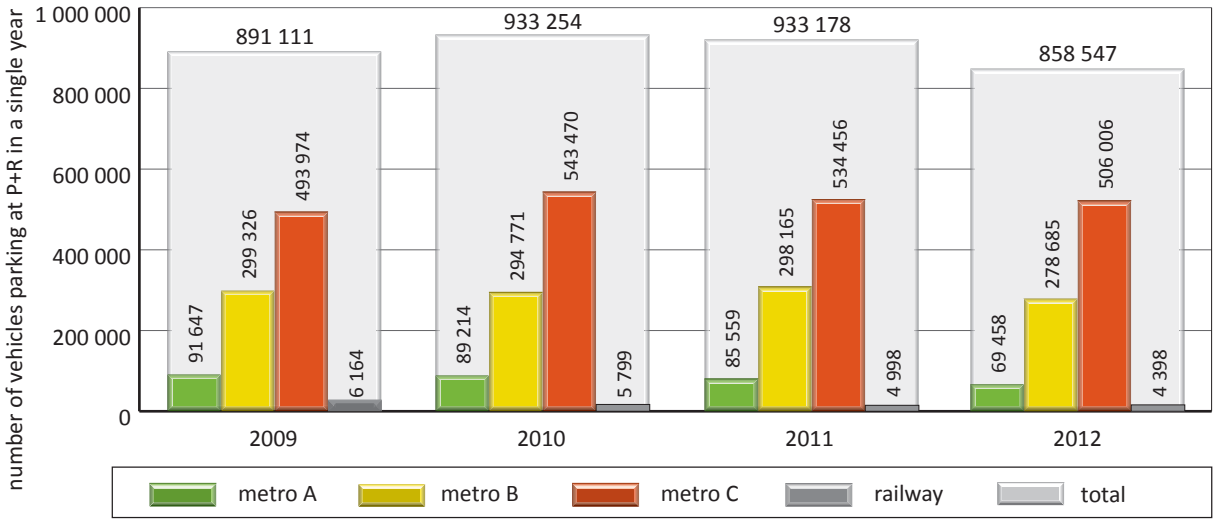
The total structural capacity of the P+R system is broken down according to use between spots for the basic function of the P+R system (2 739 spots), spots permanently reserved for vehicles transporting a person with a serious handicap – marked in accordance with the Act on Land Roads (130 spots), spots for other purposes or residents with a valid contract on long-term parking of a vehicle (139 spots).

Spots reserved for the basic function of the P+R system

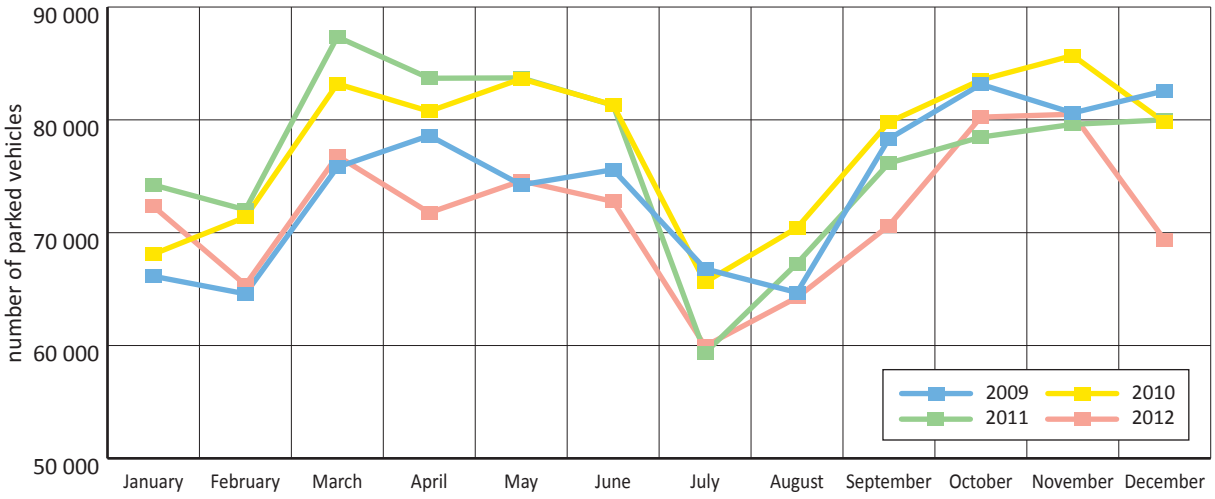
Lot	of spots	Cars parked monthly		Lot	of spots	Cars parked monthly	
		Oct 2011	Oct 2012			Oct 2011	Oct 2012
Běchovice	86	69	53	Nové Butovice	57	1 992	2 045
Černý Most 1	294	10 174	10 733	Opatov	181	5 452	5 653
Černý Most 2	131	3 146	3 327	Radotín	15	314	331
Depo Hostivař	169	4 944	4 727	Rajská zahrada	88	2 465	2 695
Holešovice	74	3 670	3 681	Skalka 1	63	1 521	1 473
Chodov	653	18 322	19 249	Skalka 2	74	574	368
Ládví	78	2 054	2 216	Zličín 1	83	3 424	3 109
Letňany	633	16 712	18 029	Zličín 2	60	2 513	2 551

Daily parking is set at the flat rate of CZK 20. Each violation of the terms and conditions leads to a CZK 100 fee. Violation of the terms and conditions includes, for example, leaving a transportation device (car or bike) at the lot outside the operating hours (i.e. overnight), or parking an car at the lot without demonstrating subsequent use of public transport.

Year-on-year development of use of P+R system



Annual variation in use of P+R system



Parking reserved for residents at P+R lots

On the basis of a contract with TSK, some of the capacity at selected P+R lots is reserved for long-term vehicle parking. A parking contract is conditioned on having a registered personal or business address in the vicinity of the lot. Reserving part of the capacity for residents meant better use of the temporarily excessive capacity at the P+R lot.

At P+R Běchovice, Opatov, Skalka 1 and Radotín, all-day parking is reserved for a monthly fee of CZK 500 for natural persons or CZK 800 for legal persons. With the exception of P+R Běchovice the capacity of resident spots is permanently full. At P+R Rajská zahrada the monthly fee of CZK 250 provides a more practical alternative in the form of parking reserved only for nights (17:30-7:30) and weekends (all-day). The capacity of the parking lot is thus only used when there is decreased demand for P+R parking.

B+R (Bike and Ride) at P+R lots

A bicycle can be left in the guarded premises of the P+R lot during the operating hours for free. The cyclist announces their arrival to the lot attendant, from whom they receive a lock for locking the bicycle to a stand. They return the key to the attendant and are issued a control card for a returnable deposit (CZK 20). This card allows them to pick up the bicycle. Bicycle storage is not possible at P+R Chodov, P+R Černý Most 2, P+R Skalka 2 and P+R Zličín 2. The other P+R facilities are equipped with a stand for at least 4 bicycles (only P+R Zličín 1 has a covered stand structure for 10 bicycles).

Economics of operating system of P+R lots (amounts in thousands of CZK before VAT)

Year	Operating income	Operating costs	Economic balance
2009	8 717	30 711	-21 994
2010	9 077	30 961	-21 884
2011	11 775	31 204	-19 429
2012	**14 529**	**30 864**	**-16 335**

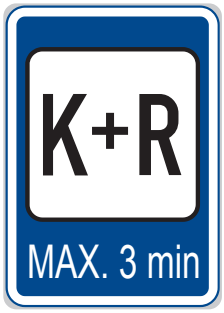
Contributing to the increase in operating income and thereby the improvement of the economics of providing the P+R system was a hike in the parking price at the beginning of the second half of 2011. Nevertheless the P+R system requires a subsidy of at least half its operating costs from the city budget each year.

10.4 Kiss and Ride points (K+R)

K+R is a method of combined transportation of passengers that connects personal car transport and public mass transit and vice versa without long-term vehicle parking. K+R “Kiss and Ride” stopping points allow for short-term stopping of vehicles (max. 3 min) in order for passengers to exit or enter near metro stations.

K+R Opatov

K+R stopping points within the City of Prague are labelled with a „Sign on the carriageway“ (V15) road marking with the text „K+R“ along with a vertical „K+R Parking Lot“ sign (IP13e) with the text „MAX 3 min“.



IP13e

Currently there are 27 K+R stopping points available within the City of Prague. In 2012 as part of the adjustments to bus line routing on Švehlova, a new K+R point was created at the inlet for the Zahradní Město bus stop heading toward the centre.

K+R stopping points in Prague

toward centre				out of centre	
A	Dejvická (Evropská)	A	Náměstí Míru	B	Černý Most (Chlumecká)
A	Dejvická (Jugoslávských partyzánů)	B	Nové Butovice (Bucharova)	C	Chodov (Roztylská)
B C	Florenc (Ke Štvanici)	C	Opatov (Chilská)	C	Kačerov (Michelská)
C	Háje (Opatovská)	C	Prosek (Prosecká)	C	Letňany (Beladova)
C	Háje (U modré školy)	C	Prosek (Vysočanská)	C	Opatov (Chilská)
C	I. P. Pavlova (Legerova)	B	Radlická (Radlická)	C	Pankrác (Na Pankráci)
C	Kačerov (Michelská)	C	Vltavská (nábř. kpt. Jaroše)	B	Radlická (Radlická)
C	Kobylisy (Nad Šutkou)	A	Želivského (Vinohradská)	S	Radotín (Vrážská)
C	Ládví (Střelničná)	tram, bus	Zahradní Město (Švehlova)		
C	Letňany (Beladova)				

K+R Zahradní Město

K+R nám. Míru

11 TRANSPORTATION INFRASTRUCTURE AND ROAD MAINTENACE

Transportation infrastructure in Prague is primarily financed by the chapters of the City of Prague budget (see Chapter 12) and investment is organised above all by the Prague City Hall Municipal Investment Division (OMI), the Technical Administration of Roads of the City of Prague (TSK) and the Prague Public Transport Company (DPP).

State funds (via the State Fund of Transportation Infrastructure – SFDI) go to finance railway track within Prague, the Prague Outer Ring Road and also help finance city roads that make up for the as yet unbuilt sections of the Prague Outer Ring Road.

The most important transportation works put into operation in 2012 were the grade-separated intersection Kbelská – Veselská and the optimised railway track Lysá nad Labem – Praha-Vysočany, Structure 1. Construction work continued on other important transportation works that, in the future, will significantly influence the quality of transportation in the capital (the north part of the City Ring Road – the Blanka tunnel complex, and the extension of the A metro line to Motol).

Ramps to Kbelská – Veselská interchange

Signs before Kbelská – Veselská interchange

Most important transportation works in 2012

Name [investor]	Description
Blanka tunnel complex (City Ring Road section Malovanka – Pelc-Tyrolka) [OMI]	• Work continued on the whole 6 382 m long section of the tunnel complex. • In October 2012, traffic signal refurbishment on Letenské náměstí and the adjacent tram track section Letenské nám. – Špejchar was completed. • A new underpass from the metro hall to Dejvická street was opened. • In December the segment of Patočkova was re-opened between Střešovická and Myslbekova heading out of the centre. • Expected date of completion in 2014.
Trojský most (part of construction of Blanka tunnel complex) [OMI]	• Will connect banks of Holešovice and Troja, total bridge length 262 m, width 36 m. • Work was completed on the bridge arch and preparations were begun for installing the suspension rods. • Expected to be opened for trams in 2013, and for cars and bicycle transport a year later.
New section of metro A Dejvická – Motol [DPP]	• 6 119 m long section includes 4 stations – Červený vrch, Veleslavín, Petřiny & Motol. • Drilling of track and station tunnels and future metro stations completed, drilling of escalator tunnels begun. • Operation is expected to begin at the end of 2014.
Kbelská – Veselská grade-separated crossing [OMI]	• Conversion of Kbelská – Veselská intersection to grade-separated completed. • Grade separation considerably improved the flow and safety of the intersection, particularly in the direction from the streets Kbelská and Veselská, where all intersections have non-collision flows
Optimisation of railway track Lysá nad Labem – Praha-Vysočany, Structure 1 [SŽDC]	• Island boarding platform completed at station Praha-Horní Počernice including underpass and elevator for passengers. • At the station Praha-Vysočany and the Skály branch, electronic interlocking plants and electric heating of 19 important switches were installed.

Construction of Trojský most

New underpass to Dejvická street

Overview of most important road refurbishment and repairs in 2012

Name [investor]	Description
Milady Horákové (part of construction of Blanka tunnel complex) [OMI]	• Section Letenské náměstí – U Sparty. • Work included complete refurbishment of the tram tracks, carriageways and sidewalks, as well as shifting of underground infrastructure, new public lighting, trolley cables, and renewal of traffic signals at Letenské náměstí.
Jičínská [TSK]	• Original carriage surfacing on segment Vinohradská – Lucemburská changed from cobble pavement to bituminous and drainage refurbished. • Renewal of traffic signals at intersection Vinohradská – Jičínská including new traffic signage.
Repair of 5. května street [TSK]	• Section between bridge over Jižní spojka and Hvězdova refurbished in both directions. • Use of new Viaphone asphalt mix reduced noise by 5 decibels during the day, up to 8 decibels at night.
Phase II of repairs to the Na Větrníku street [TSK]	• Second phase (section Stamicova – Myslivečkova) included replacement of cobble pavement surface with bituminous surface. • Also carried out was modification of parking spaces, planting of greenery and building of a traffic island refuge for pedestrians.
Phase III of repairs of Michelská street [TSK]	• Third phase of repairs to Michelská street (Ohradní – Plynární) included demolition of old bridge over the Botič and construction of a new one, as well as refurbishment of the carriageway, pavements, utility infrastructure, public lighting, etc. • New traffic signal built at intersections with streets Ohradní and Plynární.
Repair of K Barrandovu street [TSK]	• Refurbishment (laying of Viaphone surface) took place between the streets Štěpařská and K Holyni in the direction into the centre.
Phase I of repairs to Malešická street [TSK]	• First phase (section Malešické nám. – Bacháčkova) included refurbishing of carriageway and pavements.
Poděbradská [TSK]	• Repairs performed on road surface in the section between the streets Hloubětínská and Slévačská heading out of the centre.

Among the further repairs carried out in 2012 were: decontamination of walls in Letenský tunel, replacement of bearings in cable bridge on the Jižní spojka and refurbishing of the streets Střížkovská, Na Popelce, V Kuťatech, Brumovická, Husitská, Koněvova, Pod Kotlářkou and Pod Markétou.

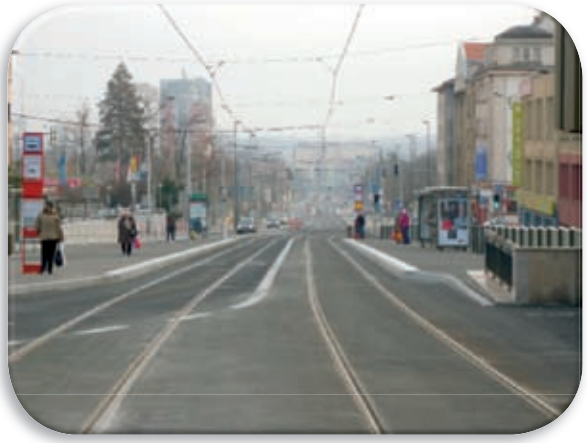
The intersection Kutnohorská x K Měcholupům underwent significant structural modifications and is now a light-controlled intersection. Along with the construction of a new traffic signal at the intersection, the carriageway and pavements were given new surfaces and traffic islands were installed, as were tactile and barrier-free elements.

Phase II of repairs to the street Na Větrníku

Phase III of Michelská repairs – new traffic signal at Ohradní

Overview of most important repairs and reconstruction in public transport in 2011

Name [investor]	Description
Refurbishment of Vinohradská tram track [DPP]	• Complete refurbishing of tram track from Želivského to the stop Vinice. In place of original large-scale panels, classic track construction was used with concrete ties and an open track top. • At the Želivského tram stops the middle unused metro exit to the platform of the former middle track was removed and the outlying track heading to the centre was moved to take its place. The remaining space was used to expand the boarding platform heading to the centre. • The renovation of the Želivského tram stop made it possible for it to also be used by buses, which makes transfers heading to the south part of the city easier.
Refurbishment of Flora intersection [DPP]	• Refurbishing of tram track intersection with addition of direct track connection from small to large part of Jičínská street and refurbishing of all adjacent branches to a distance of 600 m. Project also included refurbishing of Flora stops and other structures. • Original construction with large-scale panels replaced primarily by concrete slabs (W-tram) with bituminous covering. • A large operating bonus of the project is the removal of the restriction against trams of all types meeting with KT articulated cars in the turn (making it possible to use these trams from the Hloubětín depot)
Refurbishment of Zenklova tram track [DPP]	• Work was divided into three sections – part 1 (2011) Palmovka – Elsnicovo náměstí, part 2 Bulovka – Vychovatelna (large-scale panels replaced by classic construction on horizontal ties with open track top), part 3 Vychovatelna – Stírka (large-scale panels replaced by construction with W-tram concrete slabs). • Completion of this work led to noise reduction and increased speed and passenger comfort. • Okrouhlická stop was refurbished to be barrier-free and a new light-controlled crossing at the head of the stop was created.



New appearance of Želivského tram stop

Open track top on Vinohradská street

Several smaller projects were also realised. In February 2012 repairs were done on the tram tracks in the section Výtoň – Palackého náměstí. At the start of June the first part of Moskevská street was refurbished between Čechovo náměstí and Vršovická street, including barrier-free access to the Čechovo náměstí tram stop heading toward the centre. In the second half of the summer holidays the section of Dělnická street between Komunardů and the start of Libeňský most was refurbished, at the end of October the track on the highly burdened turn on Chotkova street was replaced and in November the turn-around at Kubánské náměstí underwent comprehensive refurbishment.

Zenklova street after refurbishing (Okrouhlická stop)

Flora tram stop after refurbishment

The Technical Administration of Roads of the City of Prague, as the administrator of most roads and road accessories in the city, is responsible for keeping them in satisfactory working order. It therefore provides for all necessary repairs, cleaning, and winter and summer maintenance. These are financed from the current expenditure section of the City of Prague budget and from contributions from SFDI and certain municipal districts. In 2012, CZK 1.006 billion was spent on repairs and maintenance and CZK 497 million on winter maintenance.

Summer repairs on Jičínská street

New Viaphone surface on 5. května street

In 2012 TSK also focused on reducing the noise burden from motor vehicles in the city. One of the most important projects in this regard was the completion of the resurfacing of the street 5. května, which was begun in 2011. In 2012 work took place on the segment between Hvězdova and the ramp to the Jižní spojka. TSK once again made use of the special Viaphone asphalt surface, which significantly reduces the noise from passing cars. The project was realised in July in August when traffic levels are lower in order to avoid potential traffic complications.

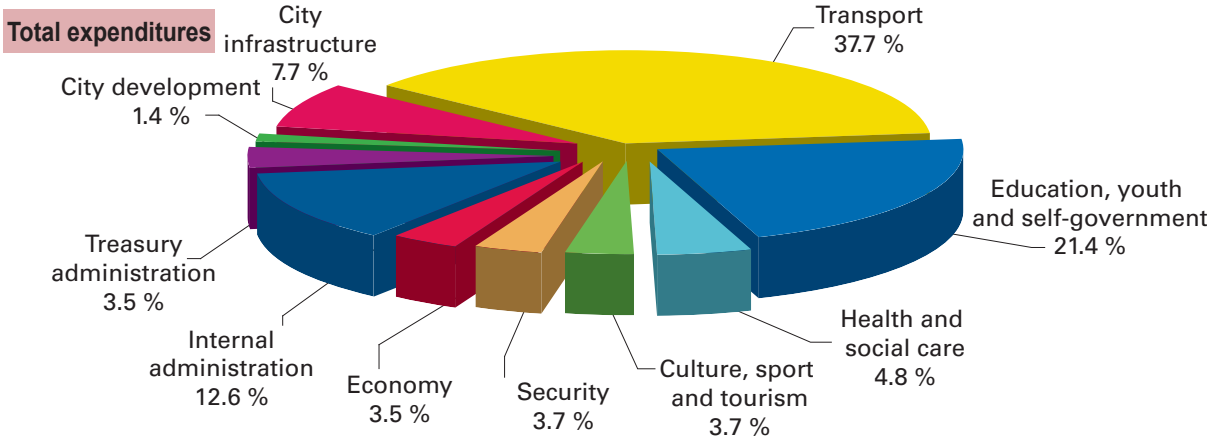
12 FINANCING THE OPERATION AND DEVELOPMENT OF MOBILITY

The operation of urban transport and the realisation of transportation infrastructure in 2012 was financed from the budget of the City of Prague, with contributions from the state budget, the own resources of the Prague Public Transport Company, and other city organisations. Funding also came from grants from EU funds and European Investment Bank (EIB) loans.

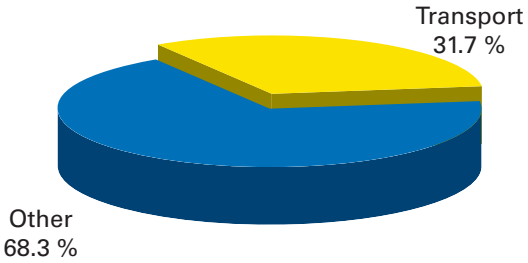
The City of Prague municipal budget, updated 30 June 2012, totalled CZK 65.5 billion in expenditures, of which the expenditures under Chapter 03 Transport totalled just under CZK 24.8 billion. Chapter 03 was thus once again the most substantial chapter of the municipal budget in terms of expenditures in 2012 (38 %). A further CZK 45 million earmarked for covering the operation of safety systems for the metro and Strahov automobile tunnel was drawn from Chapter 07 Security.

Transport accounted for 32 % of the City of Prague's current expenditures and transport investments for over 50 % of capital spending.

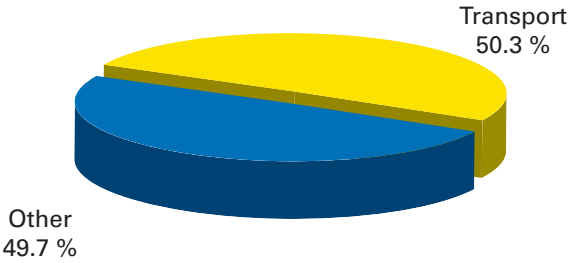
Breakdown of municipal budget expenditures in 2012 (budget updated as of 30 June 2012)



Transport as % of current expenditures

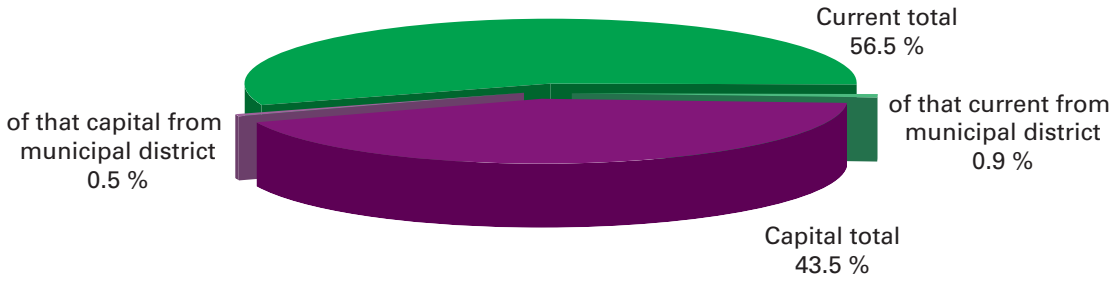


Transport as % of capital expenditures



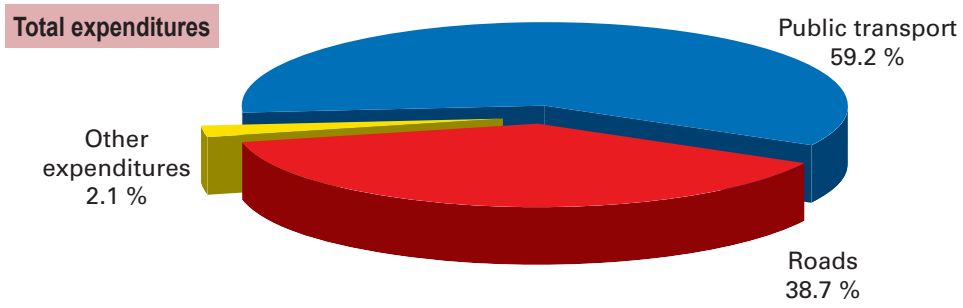
Of the total amount contained in Chapter 3 Transport (CZK 24.8 billion), CZK 14 billion was earmarked for current expenditures and over CZK 10.8 billion for capital spending.

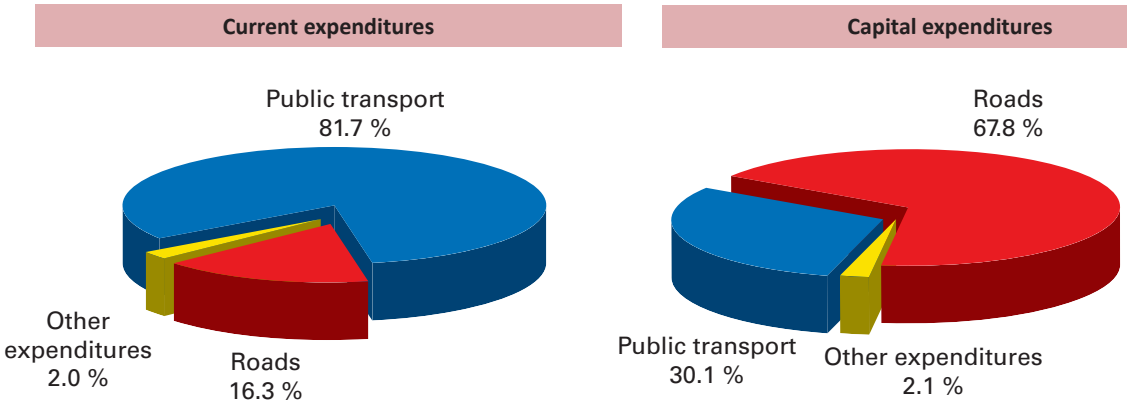
Proportion of current and capital expenditures in Chapter 3 Transport (budget updated 30 June 2012)



Ever year, expenditures associated with passenger public transport form the decisive bulk of current expenditures. CZK 11.4 billion was set aside for this purpose in the adjusted budget. CZK 2.3 billion was earmarked for administration, maintenance and operation of roads and CZK 0.3 billion went to cover various other necessary expenditures.

Structure of municipal budget transport expenditures in 2012 (budget updated as of 30 June 2012)



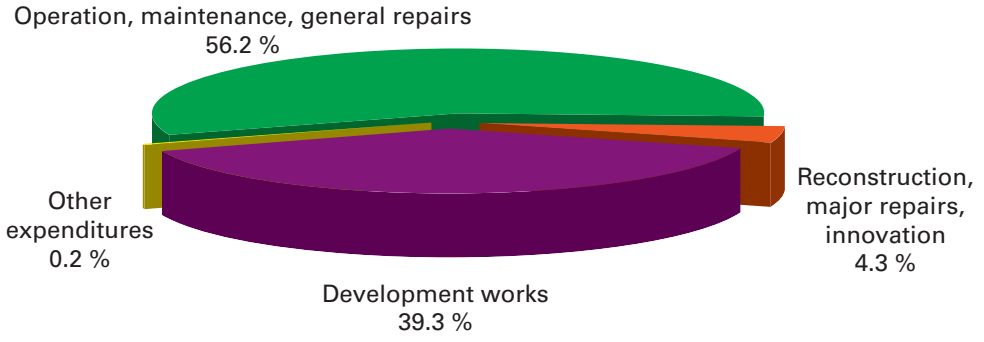


The capital expenditures went primarily to pay for development investments, i.e. construction of new roads and metro lines and other transportation equipment (90 %), as well as more extensive repairs and refurbishment of transport routes and equipment (10 %). Capital expenditures were dominated by expenditures for improving the road network and the conditions for road traffic. Of the total amount of CZK 10.8 billion, CZK 3.3 billion went to renewal and development of public transport and CZK 7.3 billion to investment in the road network.

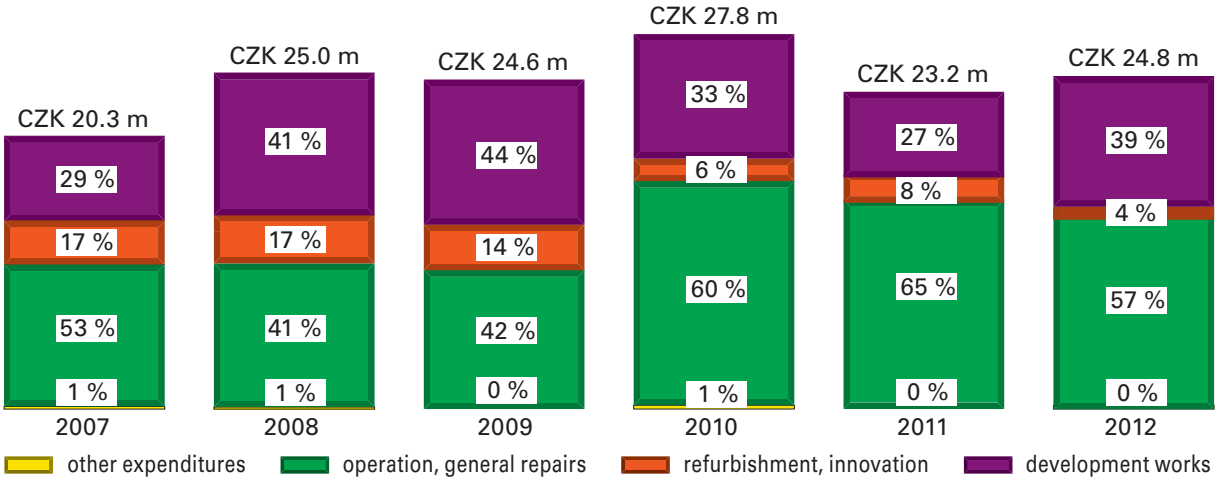
Of the total transportation expenditures in the adjusted 2012 budget, the amount set aside for ensuring the operation, renewal and development of public passenger transport was 59 % and the amount for ensuring road transport and development of the road network was 39 %.

A more detailed breakdown of the items in the expenditures of Chapter 03 shows that nearly CZK 14 billion went to securing operation, general repairs and maintenance of the city's transportation system, CZK 1 billion went to major repairs, refurbishing and renewal of technical facilities and just under CZK 10 billion was earmarked for development investments.

Structure of total transport expenditures in 2012 city budget (budget updated as of 30 June 2012)



Development of structure of transport expenditures in City of Prague budgets



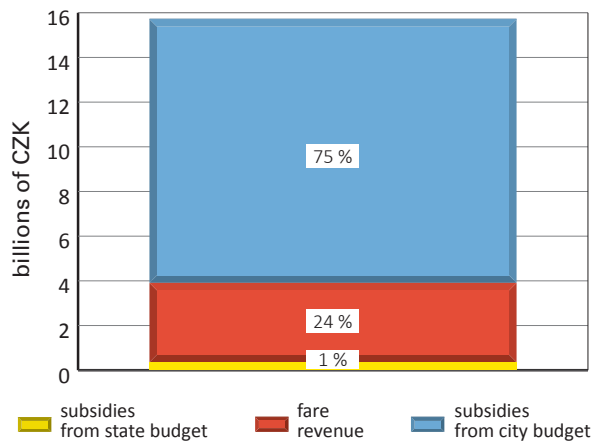
Targeted bound contributions were provided to the City of Prague from the state budget for operating the metro and Strahov tunnel safety systems, and to cover certain PID operating costs. A contribution was allotted from the budget of the State Fund for Transport Infrastructure (SFDI) for the maintenance, repair and construction of roads that are temporarily fulfilling the function of the lacking superior road network. The state budget also adds to EU funds to help finance EU operational programmes.

The state also takes part in building the Prague Outer Ring Road, having assumed full responsibility for financing it. A total of CZK 1.73 billion was drawn in 2012 for the southwest part of the ring road, in particular completing the intersection with the D1 motorway (including VAT and valorisation). Of this CZK 0.12 billion was a loan from the European Investment Bank, CZK 0.04 billion a loan from the European Investment Bank for the Operational Programme Transport and CZK 1.57 billion was contributed from the budget of the State Fund for Transport Infrastructure. The SFDI funding along with funding from the EU Cohesion Fund also went to finance Structure 1 of the Optimisation of Railway Track Lysá nad Labem – Praha Vysočany in 2012.

The Prague Public Transport Company contributed CZK 3 billion of its own resources to cover investment costs for the city's transportation system, of which CZK 2.1 billion went to renewing the MHD fleet.

An important source of funding for the operation of the city's transportation system is the revenue from the sale of passenger public transport tickets. The basic relationship between the volume of revenue and subsidies in operating Prague Integrated Public Transport within the city in 2012 is evident from the following graph.

Operating subsidies and fare revenue in PID within Prague in 2012



Praha-Horní Počernice railway station during renovation

13 EU PROJECTS WITH PARTICIPATION OF TSK

One of the important tasks that must be addressed in developing the Czech Republic's capital city is ensuring that the whole territory of Prague lives up to the level demanded by the European Union in terms of transportation, i.e. that the goals of the European Transport Policy be fulfilled. These objectives are defined in a document called a White Paper and they are to be achieved through "initiatives" that include specific measures. In the initiative entitled Innovating for the future – technology and behaviour there is a demand for more effective application of integrated traffic management systems, traffic information systems and systems allowing better use of transportation infrastructure.

The demands outlined by the European Union in the White Paper, as well as in its other documents and directives focusing on transportation policy, are naturally also reflected in the transportation policy of the Czech Republic and documents approved by the responsible bodies of the capital city.

What is important in all this is that all steps to improve transportation in Prague count on significant contributions from EU sources of funding. For this reason, important transportation projects affecting Prague are realised under the Operational Programme Transportation under priority axis 5 – "Modernisation and Development of the Prague Metro and the Road Traffic Management Systems in the City of Prague".

Operational Programme Transport (OPD)

The first project under priority axis 5 was the **Prague Urban Road Traffic Management and Regulation System**. Implementation was provided for by the Technical Administration of Roads of the City of Prague, which is charged with planning and realising projects that deal with the development of transportation telematics. Implementation took place in the years 2007 – 2011 and was supported financially by the European Union. The Cohesion Fund contribution was approved by the European Union in the amount of CZK 556 million, which comprised 85 % of the total costs. The remaining 15 % was co-financed by the City of Prague from its budget.

Following up on the successful establishment of a road traffic management and regulation system in the capital is Prague's second project approved for support under priority axis 5 of OPD, entitled **Increasing Road Safety in Prague**. Implementation was launched in 2009. The project was approved for CZK 493 million in financial support from the Cohesion Fund, which represents 85 % of the planned total costs.

The project was divided into three basic areas:
- Traffic management and monitoring in tunnels
- Provision of traffic information
- Harmonisation of telematic systems on the City Ring Road and radial roads in connection with new structures

Depiction of event detected in Strahov Tunnel

DTI Dinzenhoferovy sady

Realisation of the project in 2012 took place in all three basic areas. By mid-2012 two areas had been completed – “Traffic management and monitoring in the Strahov automobile tunnel” and “Harmonisation of telematic systems on the City Ring Road and radial roads in connection with new structures”. The remaining area “Provision of traffic information using a system of DTIs” (device for traffic information) will be completed in May 2013. Integral parts of the whole project were the creation of the proper technical conditions, doing publicity for the whole project and planning. The full-fledged launch is expected in July of 2013.

Traffic management and monitoring in the Strahov automobile tunnel (SAT)

The project involved:

- updating the SAT management system including the security system
- refurbishing the SAT control centre, a management system for the tunnels of the City and Prague Outer Ring Roads, transfer of global information from the tunnels to the UTCC
- updating the tunnel simulator with programming for the City Ring Road tunnels linking to the SAT
- updating indications of dangerous ADR goods for the City Ring Road tunnels
- replacement of GE30/31 safety system stations, which come from the G.E.Fanuc 90/30 series, with more efficient GE 90/70 models
- adjusting the SAT operating code, traffic management and technology of the City and Prague Outer Ring Road tunnels from SAT including creation of an electronic application for the operating code

Provision of traffic information using a system of DTIs

Drivers in Prague will be navigated by 58 new and modernised information boards that will help increase traffic flow and safety. All functions on the new boards should be up and running by mid-2013.

The boards measure 3 x 4 metres and provide drivers with general information, for instance warnings about traffic restrictions, trip time estimates for up to three destinations at once or information on the occupancy of parking lots. Text information for drivers is displayed in three short rows. Symbols can also be displayed on the DTIs and in the case of exceptional events colour can be used as well. At three locations in Prague there are atypical boards that display a map of traffic density on adjoining road segments.

Harmonisation of telematic systems on the City Ring Road and Radial Roads

The content was:

- modernisation and harmonisation of tunnel video detection systems
- integration of video detection systems into the tunnel management system
- fill in missing two-line safety information boards
- integration of safety information boards into the tunnel management system
- integration of safety information boards into the UTCC
- scenarios for managing and influencing traffic
- ensuring traffic monitoring at entry points to Prague on main radial roads including statistical weighing of freight vehicles and determination of directional flow
- ensuring UTCC management scenarios for traffic management around the main radial roads
- dynamic macro-model of traffic flow based on FCD technology
- ensuring real-time macro-model of traffic flow covering whole of Prague and the main roads into Prague to a distance of 20 km from the city
- provision of additional data sources for all special telematic systems that influence traffic, including RDS-TMC broadcasting

14 OTHER FORMS OF TRANSPORT IN PRAGUE

14.1 Air transport

Both passenger and freight air transport in Prague are primarily operated at the airport in Ruzyně located at the northwest edge of the city (public international airport with an external border) which in 2012 was renamed the Václav Havel Airport Prague. Aside from this there are several other smaller airports within the city or its close surroundings (Letňany – grass-covered public domestic airport, Kbely – military airport, Točná – grass-covered public domestic airport, currently out of service, Vodochody – private international airport).

The Prague Airport has three take-off and landing runways, one of which is in long-term closure. The total capacity of the runway system is approximately 200 000 aircraft movements (take-offs and landings) per year. There are three terminals for checking through passengers at the airport. In the north part of the airport are Terminals 1 and 2 (1 – flights outside the Schengen area, 2 – flights to the Schengen area), while Terminal 3 (general aviation) is located in the south part. The overall capacity of the terminals that serve to check through passengers is 15.5 million per year. There are two terminals for freight, each with a capacity of 100 000 t/year.

North section – Terminals 1 and 2

South section – Terminal T3

In 2012 a total of 386 carriers used the services of the airport in Ruzyně, of those 49 carriers on regular passenger lines, 11 low-cost carriers and 5 freight carriers. The other carriers operated charter flights, private flights and irregular freight transport. Altogether flights were made to 737 destinations from the airport in 2012, of those 132 destinations in regular transport and 250 destinations in charter transport. The greatest volume of passengers was dispatched to destinations in the United Kingdom (1.21 m), Germany (1.05 m), France (1.01 m), Russian (0.98 m), Italy (0.86 m) and Spain (0.67 m). The majority of passengers (91 %) were headed to European destinations, followed by destinations in Africa (4.1 %) and the Middle East (2.2 %). The most heavily trafficked destination was the Charles de Gaulle Airport in Paris with a volume of 0.80 million passengers, followed by Moscow Sheremetyevo (0.59 m), Frankfurt (0.49 m), London Heathrow (0.40 m) and Amsterdam (0.40 m).

Compared to 2009, when a general drop-off was recorded, both passenger and freight air transport saw a worldwide recovery in 2010 and in terms of passenger transport this trend has continued. In 2012, compared with 2011, the average number of passengers increased 3.9 % worldwide, with broad variation by region – in Europe and America the growth was only 1.8 % and 1.6 % respectively, while in the Middle East it was 12 %, elsewhere 6-7 %. Freight transport essentially stagnated when averaged worldwide (-0.2 %), falling the most in Europe (-3 %) while growing in the Middle East by 4.2 %.

The position of Prague's airport compared internationally can be seen in the following table:

Number of passengers processed at selected airports (millions/year)					
Airport	**2000**	**2010**	**2011**	**2012**	**12 / 11**
Hartsfield-Jackson International (Atlanta)	80.2	89.3	92.4	**95.5**	103.4 %
London Heathrow	64.3	65.7	69.4	**70.0**	100.9 %
O'Hare International (Chicago)	72.1	67.0	66.8	**66.8**	100.0 %
Paris Charles de Gaulle	47.8	58.2	61.0	**61.6**	101.0 %
Frankfurt	49.0	53.0	56.4	**57.5**	102.0 %
Amsterdam Schiphol	39.3	45.3	49.8	**51.0**	102.4 %
Madrid Barajas	32.6	49.9	49.7	**45.2**	90.9 %
Roma Fiumicino	25.9	36.3	37.7	**37.1**	98.4 %
Copenhagen Kastrup	18.2	21.5	22.7	**23.3**	102.6 %
Vienna Schwechat	11.8	19.7	21.1	**22.2**	105.2 %
Stockholm Arlanda	18.3	17.0	19.1	**19.6**	102.6 %
Brussels Airport	21.5	17.1	18.9	**19.0**	100.5 %
Letiště Václava Havla Praha	5.8	11.6	11.8	**10.8**	91.5 %
Warsaw Frederic Chopin	4.3	9.0	9.3	**9.6**	103.2 %
Budapest Ferihegy	4.7	8.2	8.9	**8.5**	95.5 %
Bratislava M. R. Štefánika	0.3	1.7	1.6	**1.4**	87.5 %

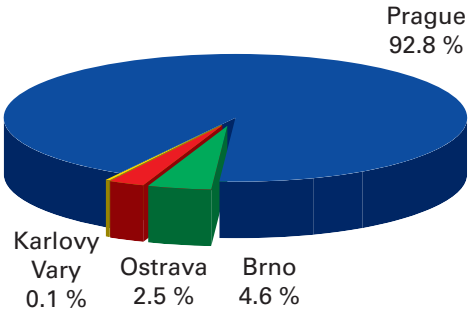
Source: The Chicago Department of Aviation, Fraport Group and airport websites

The total volume of passengers checked through in 2012 at the four most highly trafficked Czech airports (Prague, Brno, Ostrava, Karlovy Vary) totalled 11.6 million, 8.5 % less than in 2011. The volume of freight transported by air (goods and post) fell by 14 %, totalling 59 400 tonnes.

The contribution of Prague's airport to the total volume at the four aforementioned Czech airports in passenger transport was 92.8 % (0.2 % more than in 2011), in freight transport 89.2 % (1.5 % less than in 2011).

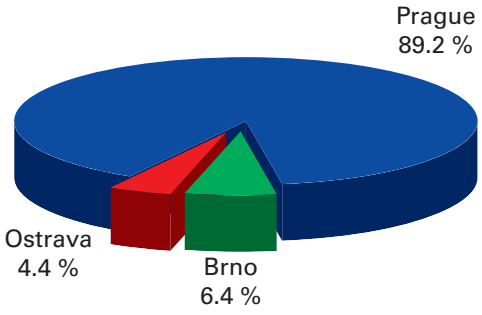
Share of airports in passenger volume

% of total volume of passengers



Share of airports in freight volume

% of total volume of goods and post



In 2012 a total of 10 807 890 passengers were checked through at the airport in Prague, which represents a drop of 8.3 % compared to 2011. This drop was felt however exclusively in transfers and transit (-52.8 %), while the number of "local" passenger grew by nearly 2 %.

The majority of passengers were checked through on regular flights. Of the total volume of 10.8 million, 63.7 % were transported on network carrier lines, while the share of low-cost companies totalled 24.6 % and the share of charter companies 11.6 %. The most passengers were checked through in August (1 201 700), the least in February (607 300). In comparison with 2011 the monthly maximum achieved in 2012 was 9.3 % lower.

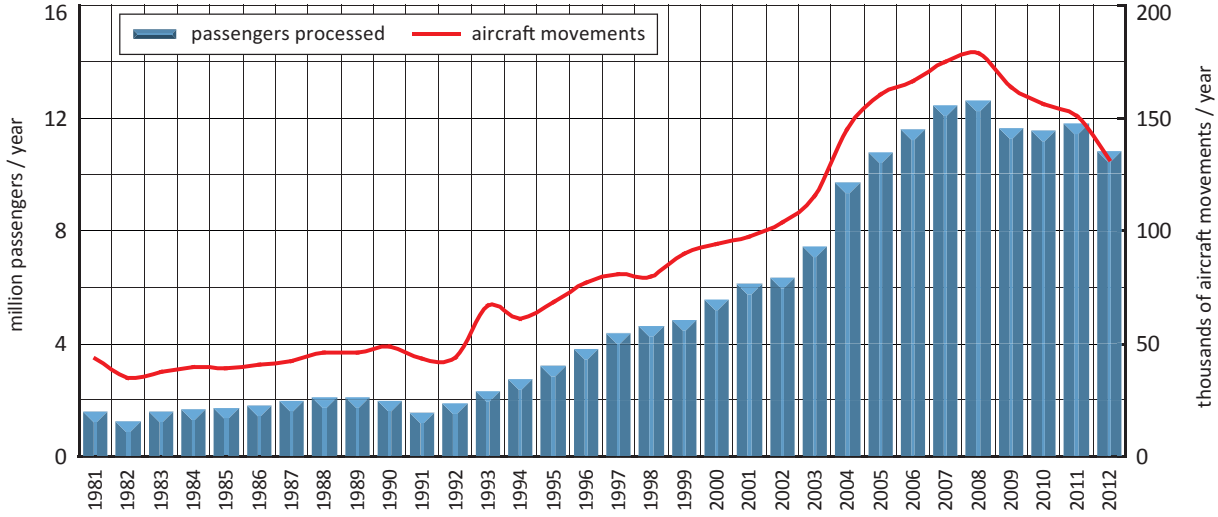
In air freight transport in 2012, a total volume of 52 977 t was transported. Freight transport was thus 9 711.5 t less than in 2011 (a drop of 15.5 %). The most freight was transported in March (5 036.5 t), the least in July (4 160.7 t). The monthly maximum in 2012 was 12.2 % lower than in 2011.

The number of aircraft movements in 2012 totalled 131 564, which is 18 988 less than in 2011 (a fall of 12.6 %). The greatest number of movements (12 440) was recorded in June, the lowest (9 057) in February. In comparison with 2011 the maximum monthly number of movements in 2012 was 13.9 % lower.

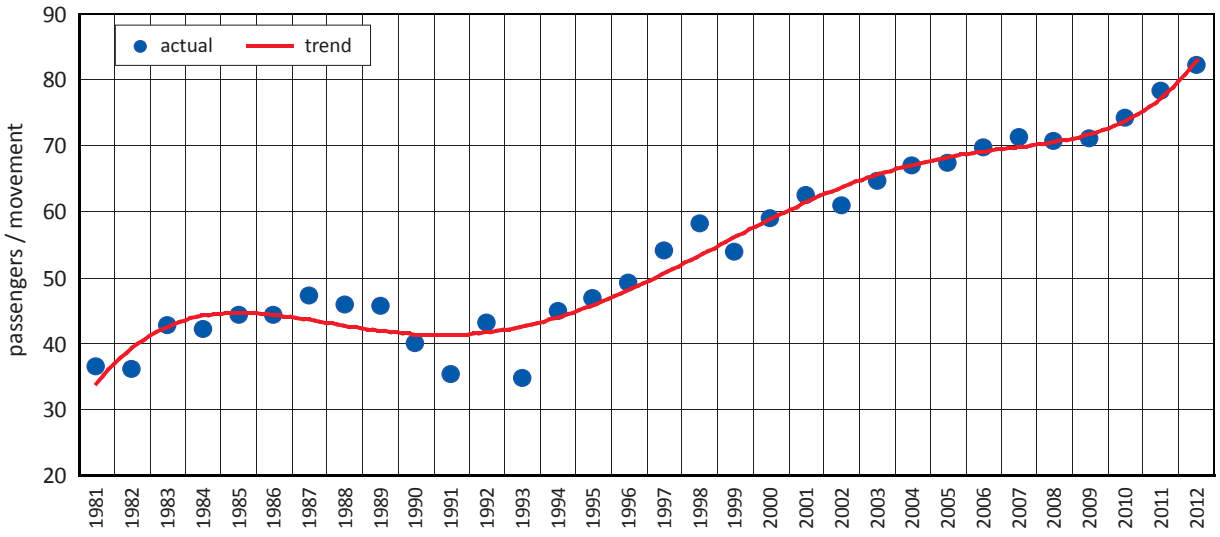
After 1991, which was the weakest year for passenger transport since 1982, the number of passengers checked through began to grow sharply, so that already in 1993 the highest values in the history of the airport (around 2.2 million/year in 1978-79) had been surpassed. At the same time the number of airport movements also grew. This long-term trend of growth in air transport was interrupted in 2008 and 2009 due to the economic crisis and the monthly numbers of passengers cleared fell below the level of past comparable periods. Overall the passenger volume at Prague's airport in 2009 dropped nearly to the level of 2006, where it remained in 2010 as well. Following a slight increase in 2011 (by 2 %), in 2012 it again dropped sharply nearly to the level of 2005.

In terms of long-term trends, a slight shift can be seen in passenger interest to the period outside the traditional summer tourist season. While in 1990 the two summer holiday months accounted for 25 % of the annual volume, in recent years this has oscillated around 22 % (2012 – 22.1 %). In the long-term the number of persons per aircraft movement has also increased, in 2012 reaching 82.1 persons/movement (1990 – 40 persons/movement).

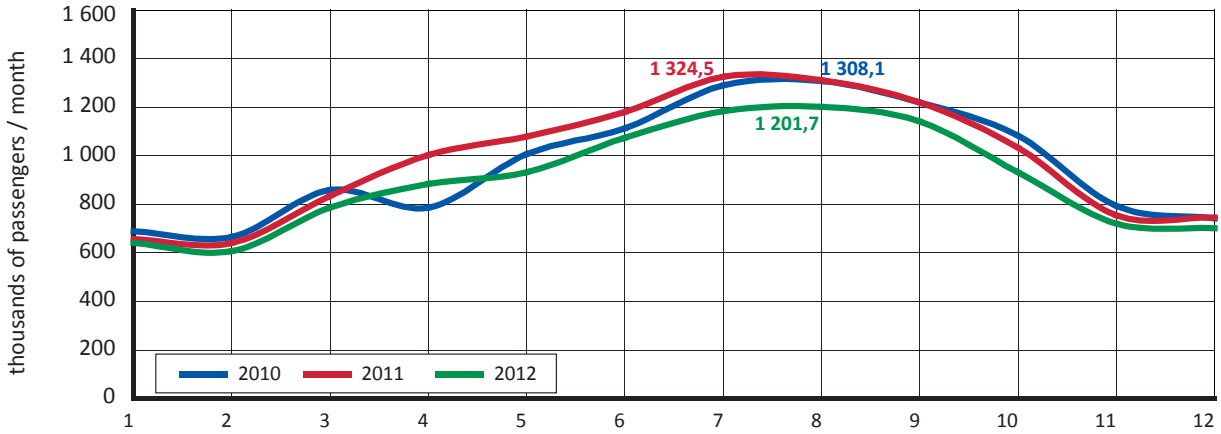
Development of output at Prague Airport (number of passengers and aircraft movements)



Development of number of passengers per movement (Prague Airport 1981 – 2012)

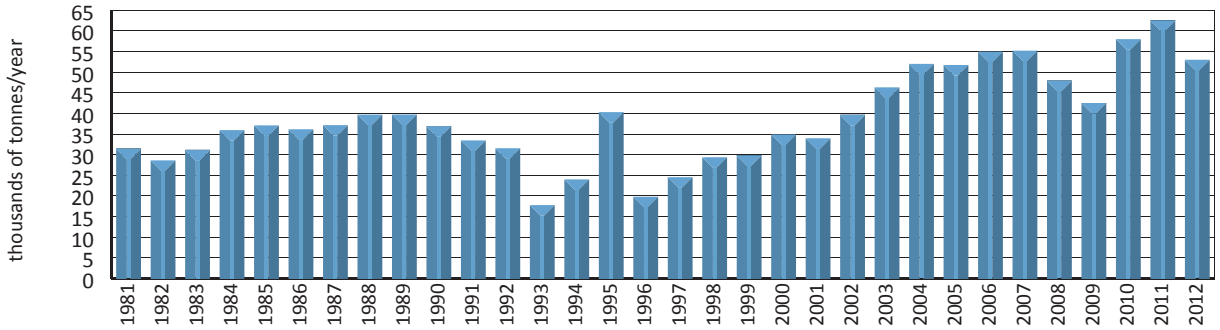


Monthly passenger numbers at Prague Airport in 2010 – 2012



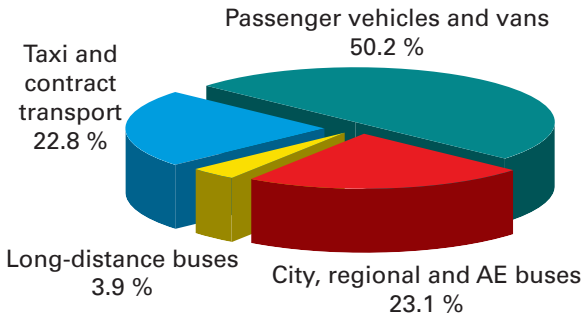
Freight transportation at the airport in Prague also grew from the mid-nineties and in 2005 the long-term average surpassed the highest average volume reached in the past. In comparison with the years 1981-90, when the average annual volume was 35 400 t/year, the average of the years 2003 –2012 (52 500 t/year) was 44.5 % higher, despite the drop-off in the years 2008-9 and 2012.

Development of freight volume at Prague Airport (fright cleared – goods and post)



Ruzyně Airport is located approximately 11 km from the centre of the city. The airport is served by two express bus lines to the end stations of the A and B metro lines in Dejvice (A) and Zličín (B) as well as other PID bus lines. Long-distance and regional bus lines also pass through. The special Airport Express bus line, intended primarily for airline passengers, goes from Praha hlavní nádraží train station to Terminals 1 and 2. Taxi service is also provided, both by personal cars and minibuses, and a number of car rental services operate here. Individual automobile transport is the predominant method of transporting persons between the airport and the city.

Modal split of trips to and from Prague Ruzyně Airport (June 2012, workday, 6:00-22:00)



In 2012, more than 7 200 stopping and parking spots were available to the public and airport employees in the north part of the airport complex, of which 600 places were located in the cargo zone. The largest number of parking spots (5 000) is available for the public and employees in parking sectors A, C, D and T1+2. The majority of spots are mid-term and long-term; 460 short-term spots are available for operative access.

In the south part of the complex are 110 public parking spaces situated by Terminal 3. Other spots in this part of the complex are for airport employees, organisations with a relationship to the airport and residents of the adjacent residential buildings.

14.2 Water transport

Water transport in Prague provides for the transportation of persons and cargo along the Vltava, of which 30.9 km flows within the boundaries of Prague. There are five locks in Prague (Modřany, Smíchov, Mánes, Štvanice, Podbaba). The capacity of the waterway is determined by the capacity of the Podbaba (5.2 million t/year) and Smíchov (2.8 million t/year) locks.

Development of number of boats passed through locks in Prague

Year	Lock				
	Modřany	Smíchov	Mánes	Štvanice	Podbaba
2000	1 898	21 716	3 747	5 775	1 897
2005	2 530	24 576	2 329	7 740	1 799
2010	2 414	25 797	2 720	8 950	2 335
2011	2 713	24 599	3 738	11 858	2 640
2012	**3 405**	**27 518**	**3 611**	**10 317**	**2 695**

Podbaba lock

Passenger boat transport along the Vltava is predominantly for tourist and social purposes. Several companies operate year-round, specialising in various types of sightseeing tours around Prague and a wide range of other services.

The largest operators of passenger boat transport include Pražská paroplavební společnost, a. s. (PPS), Evropská vodní doprava, s. r. o. (EVD), AQUAVIA Praha, s. r. o. and Pražské Benátky, s. r. o.

The oldest operator of water transport along the Vltava is Pražská paroplavební společnost, a. s. (PPS), which was founded in 1865. This company currently operates 8 large boats that anchor at Rašínovo nábřeží between Palackého most and Jiráskův most. The company organises regular boat line cruises and a number of sight-seeing cruises through Prague.

The largest company operating boat transport in Prague is Evropská vodní doprava, s. r. o. (EVD). This company was divided into two entities: Evropská vodní doprava – Sped, s. r. o., which operates both domestic and European-wide freight transport, and Prague boats, s. r. o., which specialises in passenger transport in Prague and operates 18 modern boats docking by Čechův most. All boats are operated year-round, either at regular time intervals or according to the individual wishes of those ordering.

Also operating is a water craft powered by solar energy, the Elektronemo (solar panels cover as much as 45 % of the consumption of the electric motors). The vessel can take on as many as 28 people, gives sightseeing tours along the Vltava and anchors at Kampa. Also in operation is the small ecological boat Šárka (with a capacity of 12 persons). This boat is rented out for tours around Malá Strana, the National Theatre, the Karlův most and the Čertovka stream.

Development of number of persons transported by two largest carriers (persons/year)

	2005	2006	2007	2008	2009	2010	2011	2012
EVD	196 000	199 000	230 000	179 000	145 000	193 000	205 000	**209 000**
PPS	86 000	115 000	229 000	208 000	94 000	91 000	107 000	**98 000**

The company AQUAVIA Praha, s. r. o. organises social events on three boats – Moravia, Czechie and Klára. The company organises one- to two-hour cruises or according to the customer's wishes, leaving from the Na Františku docks.

Visla and Odra at Rašínovo nábřeží

Na Františku dock

Pražské Benátky, s. r. o runs canal sight-seeing cruises along the Vltava year-round. The parlour express boat Nepomuk is used for private events. The company also operates four all-wood covered boats and seven open boats. Some have now been constructed as copies of the "Vltava nudists" with flat bottoms and nearly vertical sides which can also sail through shallow areas without any problem. The company also operates ferries in Prague that are part of the PID system (see Chapter 3.6).

In addition to these large companies there are also a number of smaller companies that operate tours and social events based on individual orders. There are docks for these companies on both banks of the Vltava in the centre of the city, for example at Na Františku, Kampa and Dvořákovo nábřeží. Not only do the companies take orders for sight-seeing cruises around Prague, but they also organise trips to Slapy, Nelahozeves, Poděbrady, Mělník and Dresden. Historical boats are also in operation – OLD TIME BOATS for 6-10 persons, motor boats – TAXI BOAT for 2-3 persons and a number of sight-seeing restaurant boats.

Various domestic and foreign operators also carry out freight transport on the river. One of the largest operators is Evropská vodní doprava – Sped, s. r. o., which runs domestic and international transport of bulk cargo, heavy loads, containers, liquids, etc. Their fleet includes 38 vessels and one tanker. The company also owns floating facilities (platforms for construction and other uses).

Development of volume of goods passed through locks in Prague in 2000 – 2012 (tonnes/year)

Year	Lock				
	Modřany	Smíchov	Mánes	Štvanice	Podbaba
2000	108 168	197 740	238	201 712	370 037
2005	56 759	59 378	690	106 749	302 726
2010	3 476	5 868	829	6 698	165 166
2011	0	2 805	264	1 647	180 634
2012	**0**	**7 383**	**6 277**	**11 845**	**194 720**

There are 4 harbours within the city – Radotín, Smíchov, Holešovice and Libeň which serve for the transhipment of various types of cargo. The operator is České přístavy, a. s. The users of the harbours are transportation, warehousing, transhipment and manufacturing companies. In addition to the harbours, temporary transhipment stations and mobile floating ramps are also used to handle cargo.

Development of volume of bulk cargo at Prague harbours 2005 – 2012 (tonnes/year)

Year	Harbour			
	Praha-Radotín	Praha-Smíchov	Praha-Holešovice	Praha-Libeň
2005	36 408	11 396	99 308	2 934
2010	0	364	53 207	0
2011	0	0	68 349	926
2012	**0**	**0**	**80 044**	**0**

14.3 Freight rail transport

The Prague railway node, the largest and most important railway node in the Czech Republic, is an important crossroads of railway corridors on the trans-European network and of combined transport routes according to the international agreements AGC and AGTC (AGC – European Agreement on Main International Railway Lines, AGTC – European Agreement on Important International Combined Transport Lines and Related Installations).

The length of track within Prague totals more than 200 km, with approximately 160 km serving for passenger transport. Also currently in operation in Prague are around 60 delivery tracks of a combined length of 120 km. The largest volume of goods transported in Prague by rail is along the tracks designated for freight transport, Malešice – Libeň and Běchovice – Malešice. An exception is the segment Hostivař – Uhříněves, which is highly trafficked by both passenger and freight trains.

Praha-Uhříněves railway station

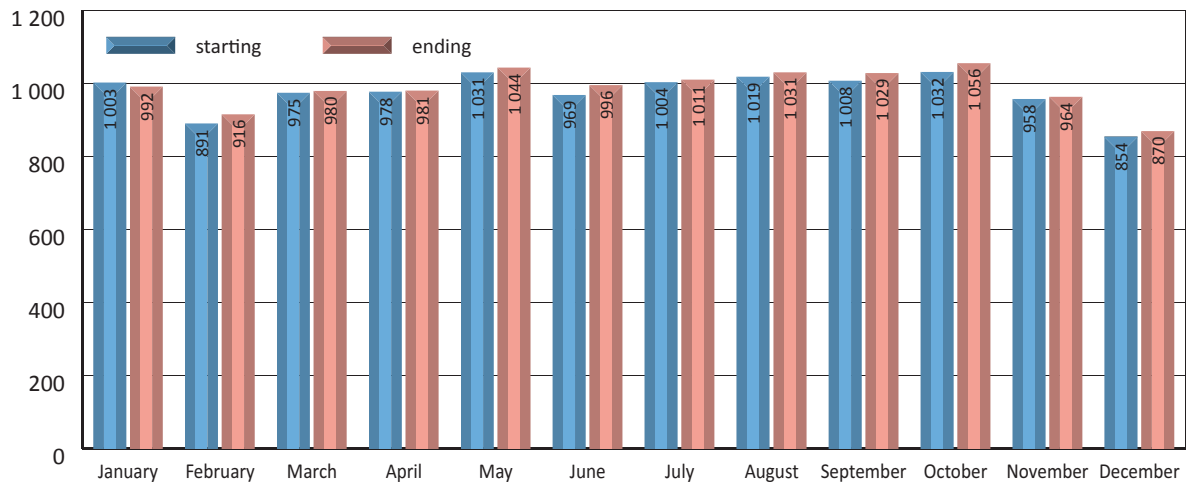
Praha-Malešice rail yard

The Praha-Uhříněves terminal is the largest container terminal in Prague. It is estimated that on average it clears 250 trucks a day. In 2012 around 107 600 waggons were cleared there and approximately 1 010 000 TEUs were transhipped (TEU is the unit of container capacity, 1 TEU is the equivalent of one 20-foot container).

Number of freight trains beginning and ending at selected Prague terminals in 2012

Station	Bubny	Hostivař	Krč	Libeň	Malešice	Radotín	Smíchov	Uhříněves	Vršovice	Zličín
starting	135	224	96	3 605	1 666	238	48	5 145	531	35
ending	154	233	103	3 526	1 955	272	45	4 947	593	42

Number of freight trains beginning and ending in Prague by month



The important nodes for transit freight rail transport are the stations Praha-Uhříněves and Praha-Malešice. Nearly 22 000 freight trains transiting through Prague passed through them in a year.

The largest Czech freight carrier is ČD Cargo. In Prague it has a share in about 80 % of the loaded and unloaded waggons and roughly 94 % of trains. In Prague ČD Cargo serves above all the combined transport terminals of the company Metrans in Prague-Uhříněves and ČSKD Intrans in Prague-Žižkov. From these their trains are connected to the north German ports of Hamburg and Bremerhaven as well as with other terminals in the Czech Republic and surrounding countries. Among the main raw materials shipped are black coal, slag and cement at Prague-Radotín and scrap metal in Prague-Krč. Also important is the siding yard in Prague-Hostivař for loading scrap metal and transporting cable spools, metallurgical material and shipments for the Prague Public Transport Company.

Number of waggons loaded and unloaded for ČD Cargo at Prague railway stations in 2012

Station	Loaded	Unloaded	Station	Loaded	Unloaded	Station	Loaded	Unloaded
Horní Počernice	418	393	Radotín	1 689	2 429	Veleslavín	0	4
Hostivař	1 217	479	Řeporyje	246	16	Vršovice	274	127
Krč	494	40	Satalice	542	409	Vysočany	475	503
Libeň	205	105	Smíchov	1	65	Zbraslav	3	13
Malešice	4 587	6 022	Strašnice	2 816	145	Zličín	31	28
Modřany	2	0	Uhříněves	93 375	100 608	Žižkov	14 627	13 419

Attached to the Praha-Malešice station is the Czech Post siding from which the ČD Cargo “postal express” trains leave every evening to North Moravia. Also leading into this station is the siding from the heating plant Teplárna Malešice, onto which whole trains of black coal are loaded in the heating season. Compressed natural gas travels to Praha-Satalice in tank cars and various chemical products and materials go to Praha-Horní Počernice.

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TELEMATIC APLIANCES ON THE ROADS OF PRAGUE

TSK-ÚDI

Evropská
Bělohorská
Plzeňská
Radlická
D5
Pražský okruh
K Barrandovu
Strakonická
Jižní spojka
Vídeňská
Brněnská (D1)
D8
Liberecká
Kbelská
Mladoboleslavská
Novopacká
Chlumecká
D11
Pražský okruh
Českobrodská
Průmyslová
Kutnohorská

Legend

- Strategic sectional detectors for one direction
- Strategic point detectors for both direction
- Strategic point detectors for one direction
- Cameras for section speed measurement for one direction
- Documentation of red-light violations
- Variable information signs
- Cameras for complex monitoring system (monitoring + traffic data collection)

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