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

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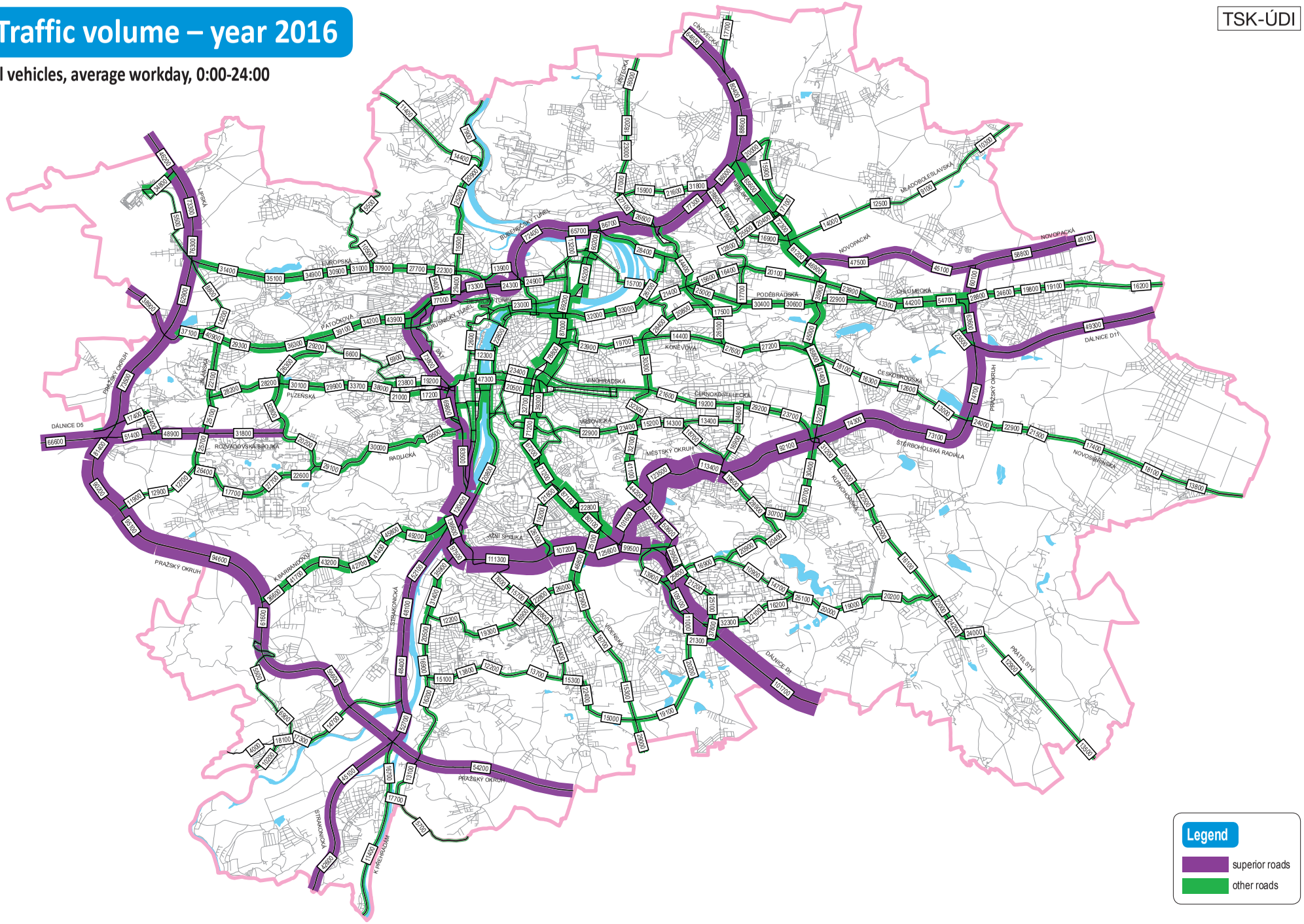
PRAGUE TRANSPORTATION YEARBOOK 2016

Traffic volume – year 2016

All vehicles, average workday, 0:00-24:00

TSK-ÚDI



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PRAGUE TRANSPORTATION YEARBOOK 2016

Dear readers,

You are currently looking at the 2016 Transport Yearbook, which has been compiled and published like every year by the City of Prague Technical Administration of Roads (TSK), responsible for the administration, development, repair and maintenance of roads and optimisation of automobile traffic and transport solutions within the city. Its activities provide the groundwork which, after receiving additional information from other institutions and partner organisations, make it possible for the Yearbook to be a comprehensive source of information on transport in Prague and the changes that took place in the preceding year. The information in all yearbooks is structured identically, thus allowing one to monitor the development of selected indicators in recent years, or in some cases as far back as 1961.

In 2016, transport in Prague was primarily influenced by the major transport works opened in the previous year (the extension of the A metro line to Nemocnice Motol and the new Malovanka – Pelc-Tyrolka segment of the City Ring Road). Both works recorded noticeably higher use in 2016 compared to 2015. The number of passengers transported by metro as well as the total number transported by public transport within the city grew by over 1 % in 2016, and the volume of passenger automobile traffic also rose compared to 2015 by 2 % on average. The intensity of traffic in the tunnels of the northwest section of the City Ring Road increased by as much as 14 %.

In the development of freight transport in 2016, boat and air transport showed noticeable growth, automotive freight transport only slight growth, while rail transport reported a considerable drop-off.

The City of Prague budget provided roughly the same funding for the needs of transport in 2016 as in the year prior. Although these funds were earmarked primarily for the operation of public transport, they did allow for an increase in the scope of refurbishing, repairs and maintenance of roads and tram tracks at the expense of development investments. As an investor, the City of Prague, through TSK and the Prague Public Transport Company (DPP), devoted special attention to public transport priority, improving conditions for pedestrians (barrier-free crossings and access to tram and bus stops), reducing noise (road and tram track surfaces, sound barriers) and increasing traffic safety.

Discussion as well as criticism from visitors to Prague was caused by the expansion of paid parking zones executed last year in parts of Prague 3, 5, 6 and 8. The number of controlled parking spots thus increased by nearly 90 % (a total of 82 712 spots) and brought about better parking conditions for residents of the new zones (37 706 parking spots were reserved for them in purple and blue zones).

A set of arduous studies focused on the traffic behaviour of city residents and visitors was completed last year. One of the results is an update on the modal split data.

Studying the Yearbook will provide you with more detailed data on the various modes of transport in Prague in 2016. I hope it will be interesting for you and that you will be able to make good use of it.

Petr Dolínek
Deputy Mayor of the City of Prague
for Transport, Sport and Leisure

In Prague, 31 March 2017

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1 BASIC DATA

1.1 Selected data on the City of Prague as of 31 December 2016

Land area	**496** km^2
Number of inhabitants	**1 280 508**
Total length of road network	**3 977** km
of which administered by TSK	2 311 km
administered by others	1 666 km
Number of bridge structures on the road network administered by TSK*	**678**
of which bridge structures over the Vltava	29
grade-separated crossings	294
underpasses	124
Number of road tunnels (total length 14 km)	**13**
Number of motor vehicles	**1 002 645**
of which number of passenger automobiles	795 178
Vehicle ownership (vehicles per 1 000 inhabitants)	**783**
Automobile ownership (passenger automobiles per 1 000 inhabitants)	**621**
Length of metro network	**65,1 km**
Length of tram network	**142,7 km**
dedicated track bed	52 %
Length of urban and suburban bus network in Prague	**825 km**
Number of traffic signals	**658**
signals at separate pedestrian crossings	152
Vehicle kilometres travelled (VKT) by automobile on the whole road network	
average workday	22,3 m VKT
annually	7,0 bn VKT
Modal split – motor transport (by number of trips on city territory over the workday)**	
public transport	59 %
automobile transport	41 %
Modal split – motor and non-motor transport (by number of trips on city territory over the workday) **	
public transport	42 %
automobile transport	29 %
combination of public and automobile transport	2 %
cyclists	1 %
pedestrians	26 %
Number of recorded traffic accidents	**22 876**
Number of recorded traffic accident injuries	**2 198**
fatal	21
serious	194
minor	1 983
Relative accident rate (number of accidents per 1 million VKT)	**3,3**

* *Records according to ČSN 73 6220 Records of Road Bridge Structures*

** *Balance of all trips in passenger transport within the city per workday. Data based on special studies from 2014-2016*

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 (mil.)		1,281	10,579	12,1
Number of motor vehicles (in thousands)		1 003	7 266	13,8
	of which passenger cars (thousands)	795	5 346	14,9
Vehicle ownership	motor vehicles per 1 000 persons	783	687	-
	persons per 1 motor vehicle	1,3	1,5	-
Car ownership	passenger cars per 1 000 persons	621	505	-
	persons per 1 motor vehicle	1,6	2,0	-

Comparison of VKT in the years 1990–2016 (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
2014	21,8	147,0
2015	21,8	154,9
2016	**22,3**	**159,4****
Index 2016/1990 (%)	305,1	197,0**
Index 2016/2015 (%)	102,1	102,9**

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

Comparison of registered vehicles in 1961–2016

Year	Prague					Czech Republic (up until 1971 Czechoslovakia)				
	Population	Motor vehicles		Passenger cars		Population	Motor vehicles		Passenger 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 %
2014	1 259	881 235	206 %	690 037	206 %	10 538	6 693 284	166 %	4 908 462	204 %
2015	1 267	941 145	219 %	740 745	220 %	10 554	6 990 542	173 %	5 130 266	213 %
2016	**1 281**	**1 002 645**	**234** %	**795 178**	**237** %	**10 579**	**7 265 766**	**180** %	**5 346 182**	**222** %

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.

In 2002–2011 they were taken from the new keepers of this data – for Prague this was the Prague City Hall Department of Transport Administration and for the Czech Republic the Ministry of Transport's Department of Transport Administration.

Starting in 2012 the data have been taken from the new central vehicle registry (data administered by the Ministry of Transport's Department of Road Vehicles).

1.3 Balance of number of trips and modal share in passenger transport

In the past year, comprehensive evaluation was conducted on a set of major traffic studies, including a transport sociology investigation of Prague and Central Bohemia residents and directional studies of automobile and public transport at the border of Prague. The individual surveys took place in the years 2014–2016.

In the case of Prague and Central Bohemia inhabitants, a modern method of data collection was used called CAWI/CATI – computer-assisted web/telephone interviews. In each of the two regions (City of Prague and Central Bohemia), over five thousand respondents were contacted.

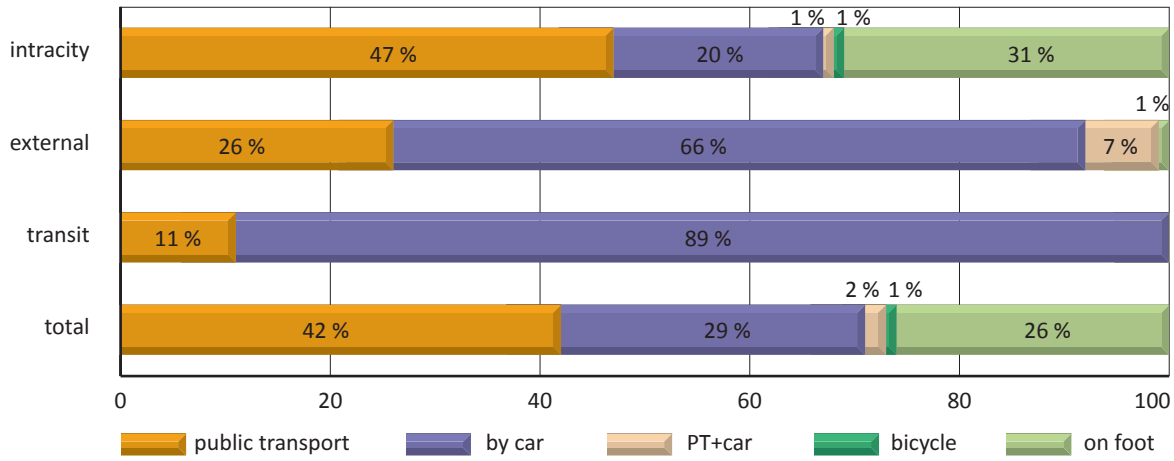
A complete enumeration of the number of automobiles and persons in trains and buses was conducted in surveys at the boundary of Prague, with questions on the point of origin, destination and purpose of the trip and other traffic sociology indicators being posed to approximately 5 % of the persons in automobile traffic and 15 % in public transport.

Based on this set of surveys, it was possible to compile a balance of the total number of trips by persons within the city and update the data on modal share. Thanks to the innovative data collection method, it was possible (in contrast with earlier data) to capture a greater proportion of trips taken solely on foot (from point of origin to destination without using another means of transport) and thereby confirm the fundamental significance of walking for connecting individual points of origins and destinations in the city. The high share of public transport in satisfying transport needs in the city was also confirmed. The share of automobile transport was calculated as slightly lower than in the previous data, yet even so individual automobile transport remains the second most important means for transporting persons in the city. This figure does not include “economic” traffic using light commercial vehicles with a maximum permissible weight of 3.5 t, which in the other indicators in this yearbook, particularly in Chapter 2, is classified along with passenger cars. The differences of the data currently presented compared to earlier data thus must be understood as a clarification and not a development over time.

Balance of number of trips by persons within the city on a standard workday

Trips by	intracity (around Prague)	external (to/from Prague)	transit (through Prague)	total
Public transport	2 208 100	241 800	9 100	2 459 000
Automobile transport	954 300	614 700	77 400	1 646 400
Combined car and public transport	36 400	64 600	-	101 000
Bicycle	23 300	3 300	-	26 600
Foot	1 490 300	14 000	-	1 504 300
Total	4 712 400	938 400	86 500	5 737 300

Modal share by type of trip



2 AUTOMOBILE TRANSPORT

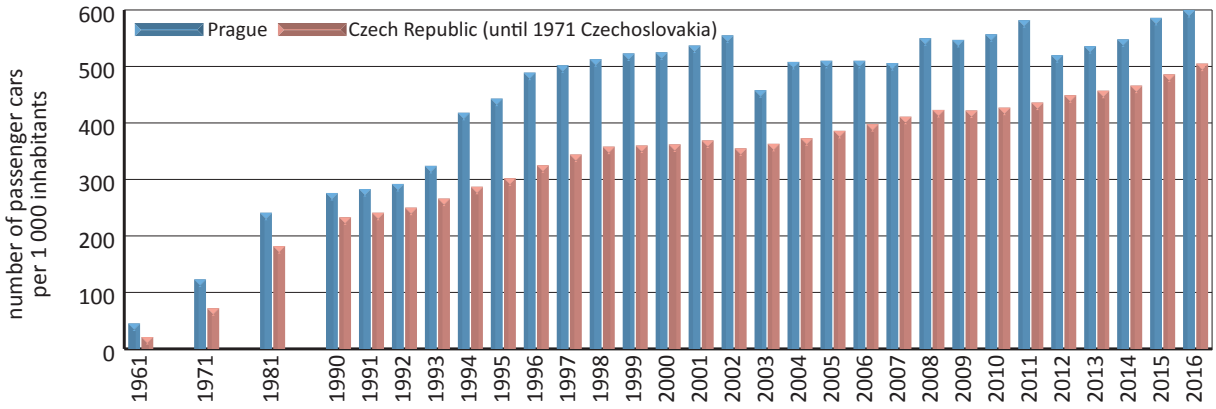
2.1 Development of vehicle and car ownership

The total number of motor vehicles registered within Prague increased dramatically up until 1999, after which the growth slowed. As of the end of 2016 there was one registered passenger automobile per 1.6 inhabitants.

Degree of vehicle and car ownership

Year	Prague				Czech Republic (until 1971 Czechoslovakia)			
	Motor vehicles		Passenger cars		Motor vehicles		Passenger cars	
	vehicles per 1 000 ppl	persons per 1 vehicle	cars per 1 000 ppl	persons per 1 car	vehicles per 1 000 ppl	persons per 1 vehicle	cars per 1 000 ppl	persons 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
2015	743	1,3	584	1,7	662	1,5	486	2,1
2016	**783**	**1,3**	**621**	**1,6**	**687**	**1,5**	**505**	**2,0**

Development of car ownership



Note: In 2003–2007 the administrator for Prague data on the number of vehicles used a different algorithm that produced lower values. In 2012 the data were taken over by the central register of the Czech Ministry of Transport.

2.2 Volume of automobile traffic on workdays

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

All data on traffic volume apply to the period from 0:00-24:00 of an average workday. All data on automobile traffic exclude municipal public transport buses.

Traffic volume
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.

Automobile traffic in the territory of Prague as measured by traffic volume on the whole road network increased on average by 2 % in 2016 compared to the previous year. In the period of 0:00-24:00 of an average workday for the year, motor vehicles drove 22.253 million VKT in all of Prague. Of this amount, passenger cars accounted for 20.472 million VKT, or 92 %.

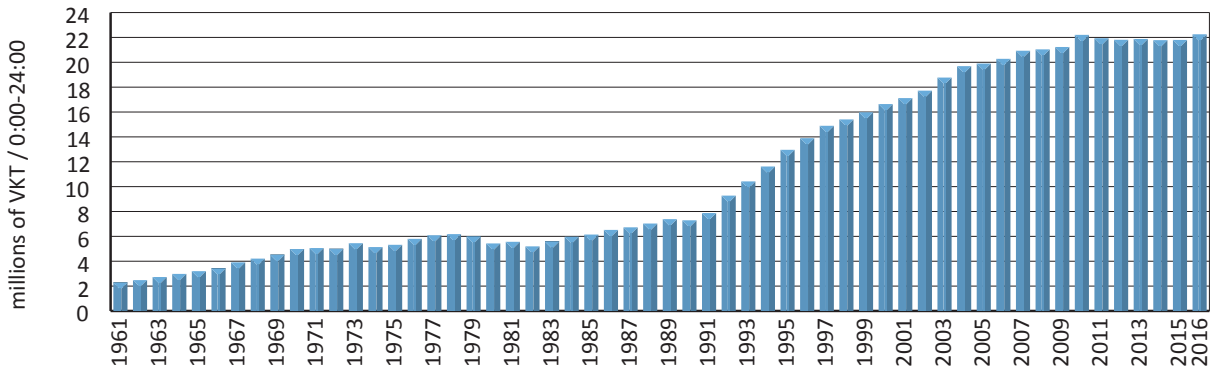
Longer-term tendencies: the annual growth of automobile traffic recorded within the city after 1990 practically ceased in 2008 and 2009 and, after more significant growth in 2010, it essentially stagnated between 2011 and 2015, with growth setting in once again in 2016.

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

Year	Motor vehicles total		Passenger automobiles		Passenger automobiles 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
2015	21,798	299	20,070	343	92
2016	**22,253**	**305**	**20,472**	**350**	**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)



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".

Greater city centre – central cordon

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 (with the Strahov and Mrázovka tunnels lying outside the central cordon), 259 000 vehicles entered (single-direction) the greater city centre in the 24 hours of an average workday in 2016, of those 247 000 passenger automobiles. In comparison with the previous year these numbers are practically unchanged.

Longer-term tendencies: 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 34 %, roughly to the level of 1992.

Outer zone of the city – outer cordon

Based on counts done at the outer cordon, which expresses the volume of traffic at the entrances from the main roads and motorways into the continually settled area of the city, over the 24 hours of an average workday 313 000 vehicles entered Prague (single-direction) across the boundary of the outer cordon, of which 279 000 were passenger cars. Compared to the previous year this was an increase of 5.2 %.

Longer-term tendencies: 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 to 2014, which once again increased significantly in 2016.

Prague road network segments with heaviest traffic in 2016

	Segment	Total vehicles per day (0:00-24:00)
1.	Barrandovský most	137 000
2.	Jižní spojka v úseku 5. května – Vídeňská	126 000
3.	Jižní spojka v úseku Chodovská – V korytech	124 000
4.	Strakonická v úseku Dobříšská – Barrandovský most	120 000
5.	Jižní spojka v úseku V korytech – Průběžná	113 000

Prague road network tunnels with heaviest traffic in 2016

	Tunnel	Total vehicles per day (0:00-24:00)
1.	Zlíchovský tunnel	84 000
2.	Brusnický tunnel	77 000
3.	Strahovský tunnel	74 000
4.	Dejvický tunnel	73 000
5.	Bubenečský tunnel	72 000

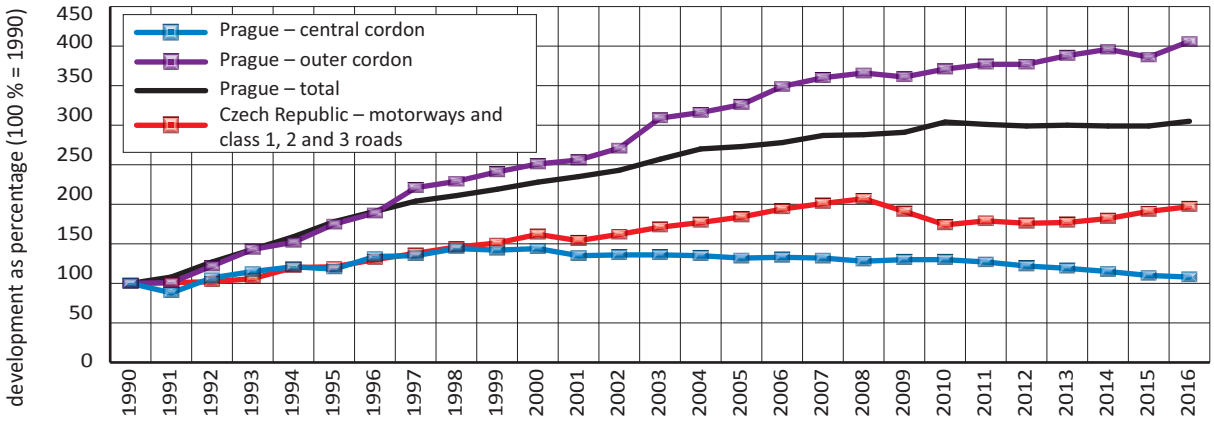
Grade-separated intersections on the Prague road network with the heaviest traffic in 2016

	Intersection	Total vehicles per day at the intersection (0:00-24:00)
1.	5. května – Jižní spojka	204 000
2.	Strakonická – Barrandovský most	180 000
3.	Jižní spojka – Chodovská	162 000
4.	Jižní spojka – Barrandovský most	134 000
5.	Liberecká – Cínovecká	131 000

At-grade intersections on the Prague road network with the heaviest traffic in 2016

	Intersection	Total vehicles per day at the intersection (0:00-24:00)
1.	Poděbradská – Kbelská	70 000
2.	Legerova – Anglická	64 000
3.	Kolbenova – Kbelská	63 000
4.	Černokostelecká – Průmyslová	63 000
5.	Mezibranská – Žitná	60 000

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



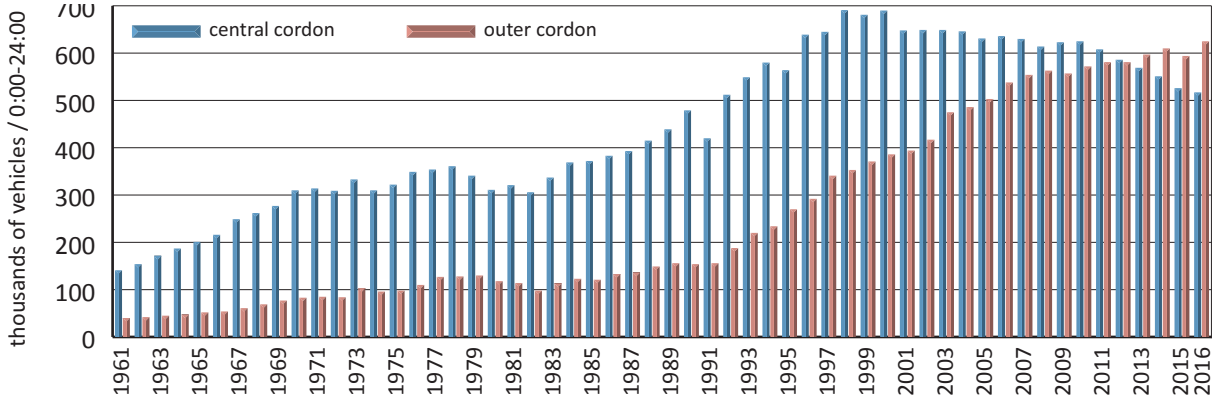
Data on traffic volume on various segments of the monitored road network in Prague for 2016 are available in table form on the TSK website in the section “Transport Engineering” and in graphic form on the inside cover of the yearbook.

Traffic volume at central and outer cordon in Prague (average 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
2015	505 000	119	9 000	21	526 000	110	528 000	476	56 000	151	594 000	386
2016	**495 000**	**117**	**9 000**	**21**	**517 000**	**108**	**558 000**	**503**	**56 000**	**151**	**625 000**	**406**

100 % = 1990 levels

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



Average occupancy of passenger automobiles (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
2014	1.30	1.30	1.30
2015	1.30	1.30	1.30
2016	**1.30**	**1.30**	**1.30**

2.3 Vehicle modal share and temporal traffic patterns

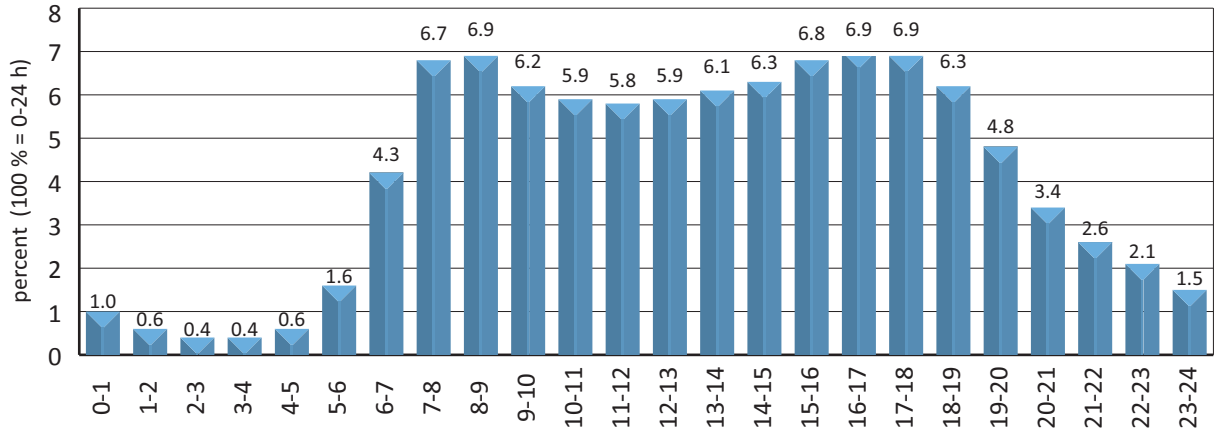
The modal share of traffic is dominated by passenger automobiles. In terms of territorial breakdown, the proportion of passenger vehicles increases toward the centre of the city. In 2016, this rate was 96 % at the central cordon, 89 % at the outer cordon and 92 % on average for the whole network.

Basic characteristics of daily variation of workday traffic volume in Prague

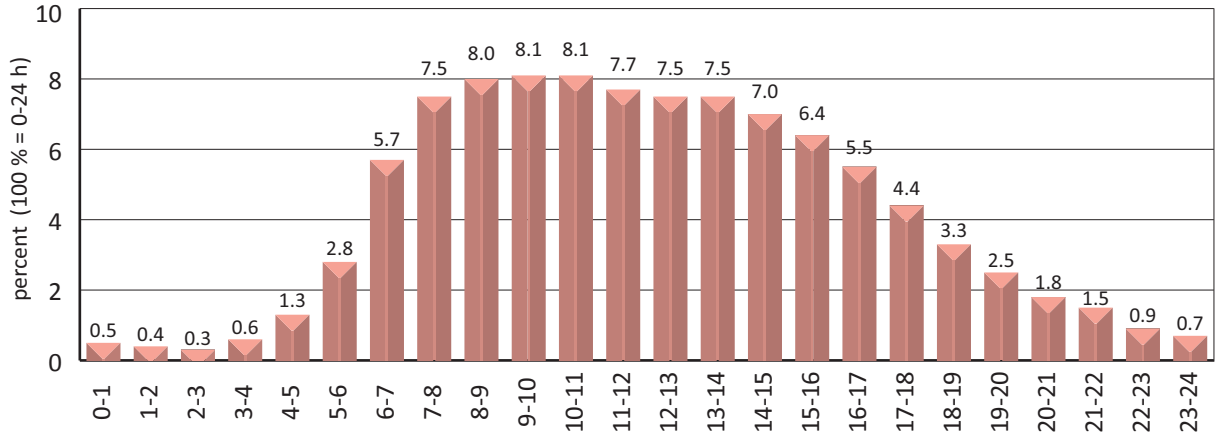
- The majority of traffic volume for the whole day takes place during the daytime period (75 % for 6:00-18:00), with the period 6:00-22:00 accounting for approx. 92 %.

- After 19:00, 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 hours are 16:00-17:00 and 17:00-18:00.
- The volume of the morning peak hour makes up 6.9 % of the total, as do each of the afternoon peaks, with 100 % equalling the whole volume for 0:00-24:00 of an average workday.
- The difference between the peak hours and the noon sag is not very pronounced.

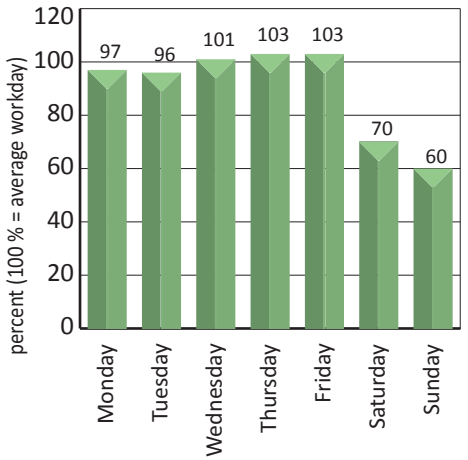
Daily variation of total automobile traffic (2016, Prague, whole network, workday)



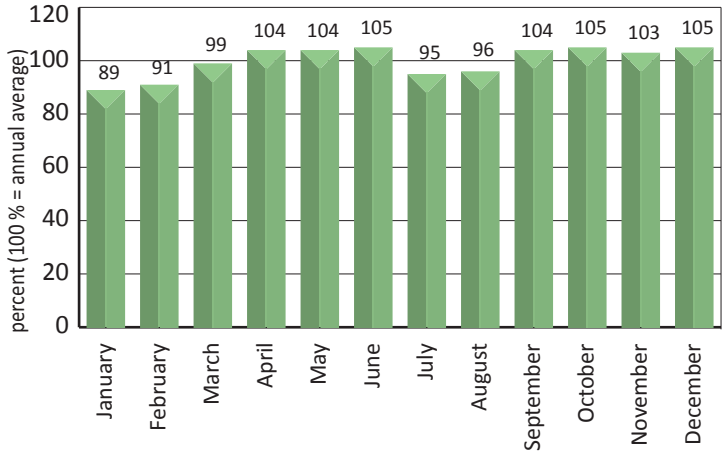
Daily variation freight vehicles and buses, not incl. public buses (2016, Prague, whole network, workday)



Weekly variation (Prague, whole network, total vehicles)



Annual variation (Prague, whole network, total vehicles)



3 PUBLIC TRANSPORT

3.1 Prague Integrated Public Transport

Within the territory served by Prague Integrated Public Transport (PID) it is possible to travel using a single travel document regardless of the mode of transport, thereby giving public transport a competitive edge over individual transport. The beginnings of the integrated system in Prague stretch back to 1992; in 1996 a transfer zone tariff was introduced and from that time the PID system has continued to expand.

Basic data on PID	
Modes of transport under PID	Metro, trams, urban and suburban buses, railway, Petřín funicular, ferries
PID organiser	ROPID (Regional Organiser of Prague Integrated Transport)
Inhabitants with access to PID	**1 978 531** (**1 280 508** in Prague and **698 023** in the Central Bohemian and Ústí Regions
Area served	**3 839** km2 (City of Prague **496** km2, Central Bohemian and Ústí Regions **3 343** km^2)
Municipalities served	**375** (**93** served by railway and bus, **43** only by railway, **239** only by bus)
Number of PID lines	**405** (**197** solely within Prague, **114** btw. Prague and region, **94** solely in region)
Number of PID carriers	**18** (Prague Public Transport Company, Czech Railways and **16** private carriers)
Persons transported annually	**1 355 758 400** (**1 278 358 400** within Prague and **77 400 000** in Central Bohemia)
Cost of basic PID tickets	In Prague – CZK **24** (valid 30 min), CZK **32** (valid 90 min), CZK **3 650** (valid 1 year)
PID operating costs in Prague	CZK **18.9** bn (**78.4** % Prague, **20.4** % revenue, state budget **1.1** %, other entities **0.1** %)
PID fare revenue in Prague	CZK **3.87** bn (**20.4** % of costs)

A 81-71M train at Nemocnice Motol station

A 15T ForCity Alfa tram at Stejskalova stop

Development of PID system								
Year	**1992**	**1995**	**2000**	**2005**	**2010**	**2014**	**2015**	**2016**
Number of PID suburban and regional bus lines	2	11	89	147	150	157	161	**167**
Number of municipalities served by PID suburban bus lines	2	15	159	299	299	309	313	**332**
Number of PID railway stations and stops	23	59	190	212	222	229	235	**238**

Development of annual PID VKT volume								
Year	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Metro, trams, urban buses (millions of VKT/yr)*	169.0	171.4	178.1	176.9	172.0	170.9	175.9	**181.0**
Suburban and regional buses (millions of VKT/yr)*	24.6	25.1	25.2	25.8	26.3	26.7	29.3	**31.1**
Railway lines solely in PID territory (millions of VKT/yr)	-	10.9	11.2	11.4	11.4	11.5	11.8	**12.6**

** new data based on real performance in every year*

405 lines operated under PID

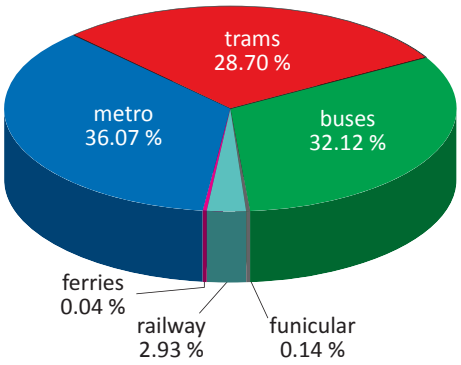
Mode of transport	Lines	Type and numbering of lines
Metro	**3**	A, B, C
Trams	**33**	24 day lines (numbered 1-26), 9 night lines (numbered 51-59)
Urban buses **with routes solely within City of Prague boundaries**	**153**	118 day lines (numbered 100-269), 14 night lines (numbered 501-515), 19 school lines (numbered 551-575), 1 line for persons with reduced mobility (H1) and 1 AE line (with separate fare)
Suburban buses **with routes btw. city and region**	**92**	82 day lines (numbered 301-398), 10 night lines (numbered 601-610)
Regional buses **with routes solely in the region**	**75**	74 day lines (numbered 401-495), 1 seasonal cyclobus
Railway **29 tracks under PID, of which 11 enter the territory of Prague**	**42**	14 S lines between Prague and the region (S1-S9, S22, S41, S54, S65, S88) 6 R lines between Prague and the region (R20, R21, R24, R43, R44, R45) 18 lines solely in the region (S11, S12, S23, S32, S33, S40, S42, S43, S44, S45, S50, S60, S70, S75, S76, S80, U22, R23), 1 urban line (S34), 3 seasonal and tourist lines (Prague and Podlipansko Motor Trains and Cyklohráček)
Ferries	**6**	Lines P1, P2 (both year-round), P3, P5, P6 and P7 (all seasonal)
Funicular	**1**	Újezd-Petřín Funicular

Operators of PID lines

Metro, trams, Petřín funicular	Prague Public Transport Company (DPP)
Urban buses	DPP (129 lines = 84 %), 8 private carriers (24 lines = 16 %)
Suburban and regional buses	11 private carriers (153 lines = 91 %), DPP (14 lines = 9 %)
S railway lines	Czech Railways (39 lines = 93 %), KŽC Doprava (3 lines = 7 %)
Ferries	Pražské Benátky (4 lines), Vittus group (1 line), Pražská paroplavební společnost (1 line)

PID ridership and share of total passengers within the City of Prague for 2016

Mode of transport and operator	Persons/year
Metro (DPP)	461 160 000
Trams (DPP)	366 856 000
Urban buses (DPP and private)	374 678 000
Suburban buses (private and DPP)	35 997 000
Railway (on PID or ČD ticket)	37 462 000
Funicular (DPP)	1 753 000
Ferries (private carriers)	452 400
Total	**1 278 358 400**



Composite data on PID in 2016

	Metro	Trams	Buses	Railway
Operating length of network within Prague (km)	65.1	142.7	825.0	160.0
Operating length of network outside Prague (km)	-	-	1 786.3	553.0
Average distance between stations and stops in Prague (km)	1.122	0.525	0.596	3.65
Average travelling speed within Prague (km/h)	35.6	18.8	24.1	49.4
Annual VKT within Prague (in thousands)*	57 529	54 578**	77 924	4 903
Annual VKT outside Prague (in thousands)*	-	-	22 061	8 182
Passengers transported annually in Prague (thousands)	461 160	366 856	410 675	37 462
Passengers transported annually outside Prague (thousands)	-	-	41 550	35 850

** For rail transport, data in train-kilometres ** Including the Petřín funicular*

3.2 Metro

The metro forms the backbone of the public transport network. During one workday an average of about 1 800 train connections are dispatched in the Prague metro, carrying approximately 1 513 000 passengers (if a passenger transfers, each ride is counted separately). If a transfer is counted as part of a single ride, passengers make 1 242 000 rides by Prague metro each day.

Basic data on the metro network in Prague

Operator	Number of lines	Operating length
Prague Public Transport Company	3 (A, B, C)	65.1 km
Number of stations	**Average distance between stations**	**Average travelling speed**
61 (transfer stations counted twice)	1.122 km	35.6 km/h
Ridership within Prague in 2016 and modal share under PID		**Number of persons transported per day**
461 160 000	36.07 %	1 513 000
Annual VKT	**Operating time**	**Number of trains running at peak**
57 529 000 (a train has 5 cars)	daily approx. 4:45–0:15	101

An M1 train at the station Pražského povstání

New lift for A and B parts of metro station Můstek

Interesting data on metro lines, segments and stations

Longest line	Deepest station	Most connections on a line
B (25.7 km)	Náměstí Míru (A) – 52 m	C (716 connections/day)
Most frequented segment*	**Most frequented station***	**Shortest interval at peak**
I. P. Pavlova – Vyšehrad (C) 277 300 ppl/day both directions	Můstek (A)** – 178 100 ppl/day I. P. Pavlova (C) – 102 400 ppl/day	C (1 min 55 seconds)

** Data from most recent comprehensive metro ridership survey (2015) **Transfer station – entry + exit + transfer*

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)
26 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

Metro stations with barrier-free access in Prague – 43 stations of 61 (70.5 %)

A line (10 stations of 17)	B line (16 stations of 24)	C line (17 stations of 20)
Nemocnice Motol, Petřiny, Nádraží Veleslavín, Bořislavka, Dejvická, Můstek, Muzeum, Strašnická, Skalka, Depo Hostivař	Zličín, Stodůlky, Luka, Lužiny, Hůrka, Nové Butovice, Smíchovské nádraží, Anděl, Národní třída, Můstek, Florenc, Vysočanská, Kolbenova, Hloubětín, Rajská zahrada, Černý Most	Letňany, Prosek, Střížkov, Ládví, Kobylisy, Nádraží Holešovice, Vltavská, Florenc, Hlavní nádraží, Muzeum, I. P. Pavlova, Vyšehrad, Budějovická, Pankrác, Roztyly, Chodov, Háje

3.3 Trams

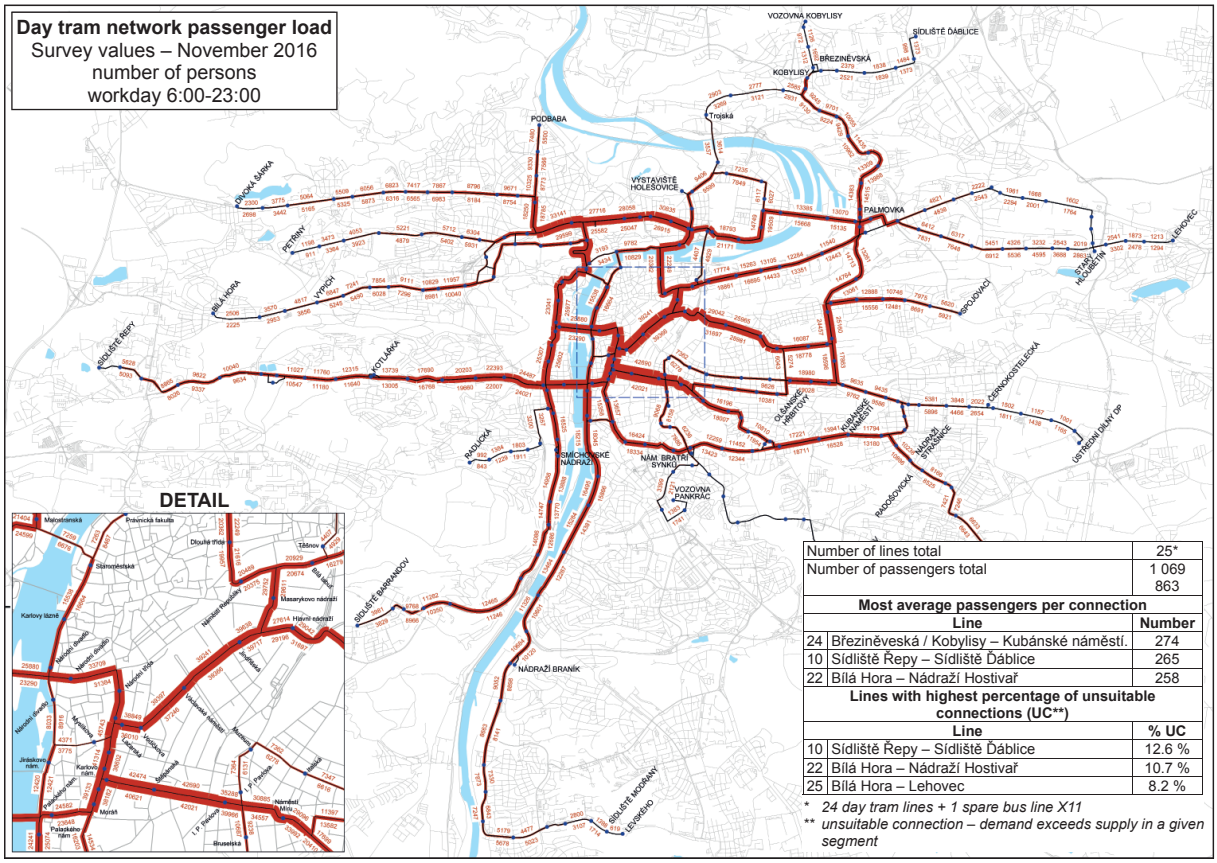
Trams form a complementary network to the metro. Tram lines have both a radial and a tangential function, also serving as feeders for metro stations. Over the course of one workday, and average of 6 500 connections are dispatched on the Prague tram network (including night trams), transporting approximately 1 213 000 passengers.

Basic data on the tram network in Prague

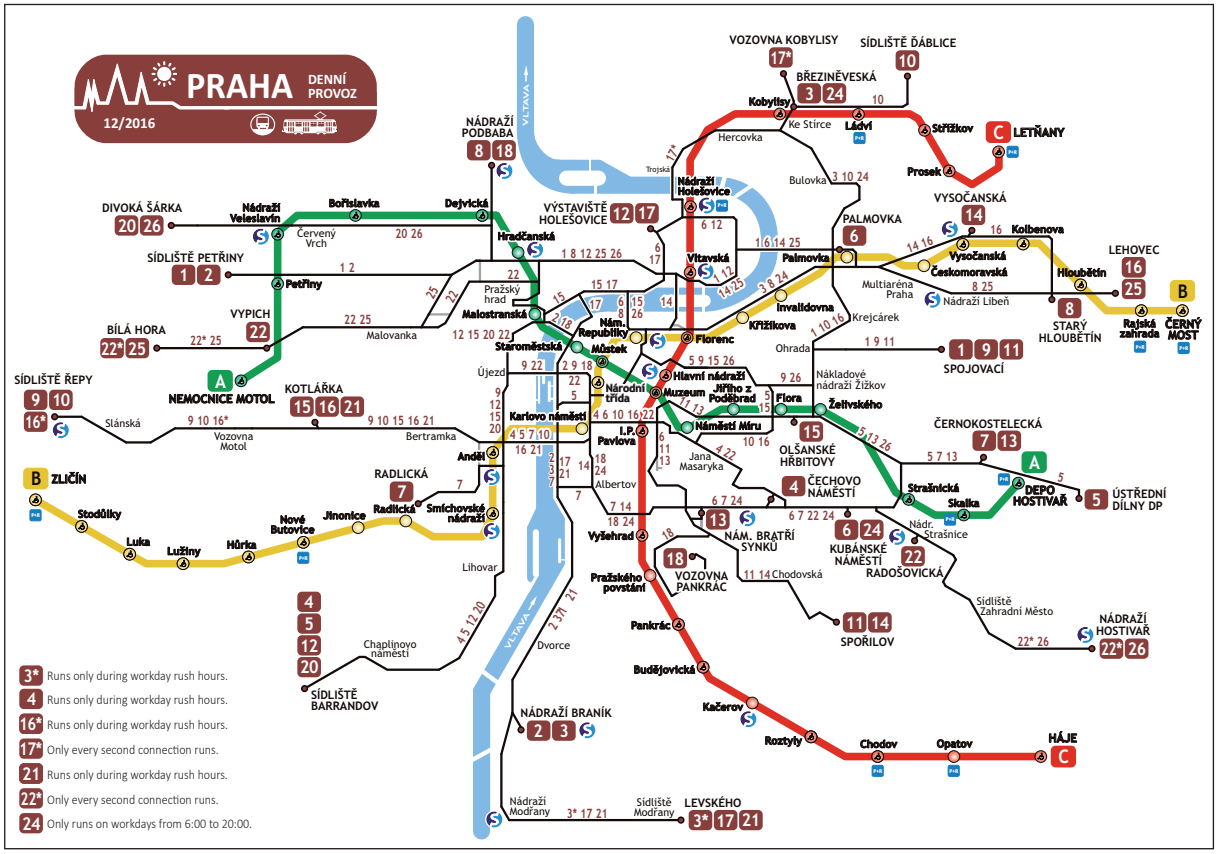
Operator	Number of lines	Operating length
Prague Public Transport Company	33 (24 day, 9 night)	142.7 km (52 % dedicated track bed)
Number of stops in operation	**Average distance between stops**	**Average travelling speed**
274 (by name), 597 (by stop marker)	0.525 km	18.8 km/h
Ridership within Prague in 2016 and modal share under PID		**Persons transported per day**
366 856 000	28.70 %	1 213 000
Annual VKT	**Operating time**	**Number of trams running at peak**
54 578 000 (one tram has 2 cars)	day 4:45-0:30, night 0:15-5:00	426

Interesting data on tram lines, segments and stops

Longest line	Most persons transported on a line	Most connections on a line
Line 16 (22.74 km)	Line 22 (118 075 ppl/6:00-23:00)	Line 22 (502 connections/day)
Most frequented segment	**Stops/hubs with highest turnover**	**Shortest interval at peak**
I. P. Pavlova – Štěpánská 84 730 ppl/6:00-23:00 both directions	Anděl – 83 480 ppl/6:00-23:00 Karlovo náměstí – 73 790 ppl/6:00-23:00	Lines 9, 17 and 22 (4 min)



Metro and tram lines in Prague (day lines – as of 31 December 2016 not including closures)



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.

Over a single workday, an average of around 23 150 PID bus connections are dispatched, transporting approximately 1 173 879 passengers. Of this amount, around 18 790 connections are urban lines (the 100, 200 and 500 series) and around 4 345 connections are suburban lines (the 300 and 600 series).

Basic data on the PID bus network in Prague

Operators of urban lines	Number of urban lines	Operating length in Prague*
8 (84 % DPP and 16 % private)	153	825.0 km
Number of stops in service*	**Average distance between stops***	**Average travelling speed***
1 154 (by name), 3 082 (by markers)	0.596 km	24.1 km/h
Ridership within Prague in 2016 and modal share under PID*		**Persons transported per day**
410 675 000	32.12 %	1 173 879
Annual VKT*	**Operating time**	**Number of vehicles running at peak***
77 924 000	day 4:45–0:30, night 0:15–5:00	1 333

** Segments of suburban bus lines within the city's territory are included in the statistics for Prague.*

Interesting data on PID bus lines, segments and stops within the city		
Longest day line	**Most persons transported on a line**	**Most connections on a line**
Line 269 (32.0 km)	Line 177 (42 960 ppl/6:00-20:00)	Line 200 (441 connections/day)
Most frequented segment	**Stops/hubs with greatest turnover**	**Shortest interval at peak**
Nemocnice Krč – U Labutě 66 000 ppl/6:00-20:00 both directions	Dejvická – 50 760 ppl/6:00-20:00 Kačerov – 47 060 ppl/6:00-20:00	Line 107 (2 minutes)

A Van Hool double-articulated bus

The 180 line at Vozovna Střešovice

On an average workday, approximately 4 345 connections crossed the city boundaries in both directions on suburban bus lines (the 300 and 600 series), carrying approximately 94 000 passengers across the city limits. Suburban bus lines used a total of 28 locations as starting or final stops within Prague.

The most suburban PID lines (13) and connections (515) used the Zličín terminal; the highest turnover of passengers (approximately 10 000 persons/day) was at the terminals Zličín, Černý Most and Smíchovské nádraží.

The network of PID bus lines is also supplemented by regional lines that do not enter the territory of Prague (the 400 series). At the end of 2016 a total of 1 748 connections rode outside the territory of Prague daily, carrying roughly 28 500 passengers on an average workday. They were all operated by private carriers.

Basic data on the PID bus network in the surroundings of Prague		
Operators of suburban buses	**Number of suburban bus lines**	**Operating length outside Prague**
11 (91 % private and 9 % DPP)	92 lines (82 day and 10 night)	1 786.3 km
Operators of regional buses	**Number of regional bus lines**	
8 (100 % private carriers)	75 (74 day, 0 night, 1 seasonal)	
Number of stops in service	**Average distance between stops**	**Average travelling speed**
1 375 (by name), 2 711 (by marker)	1.080 km	32.7 km/h
Ridership on PID buses outside Prague in 2016		**Operating time**
41 550 000		day 4:30-0:30, night 0:00-5:00
Annual VKT		**Vehicles running at peak**
22 061 409		474

3.5 PID railway transport

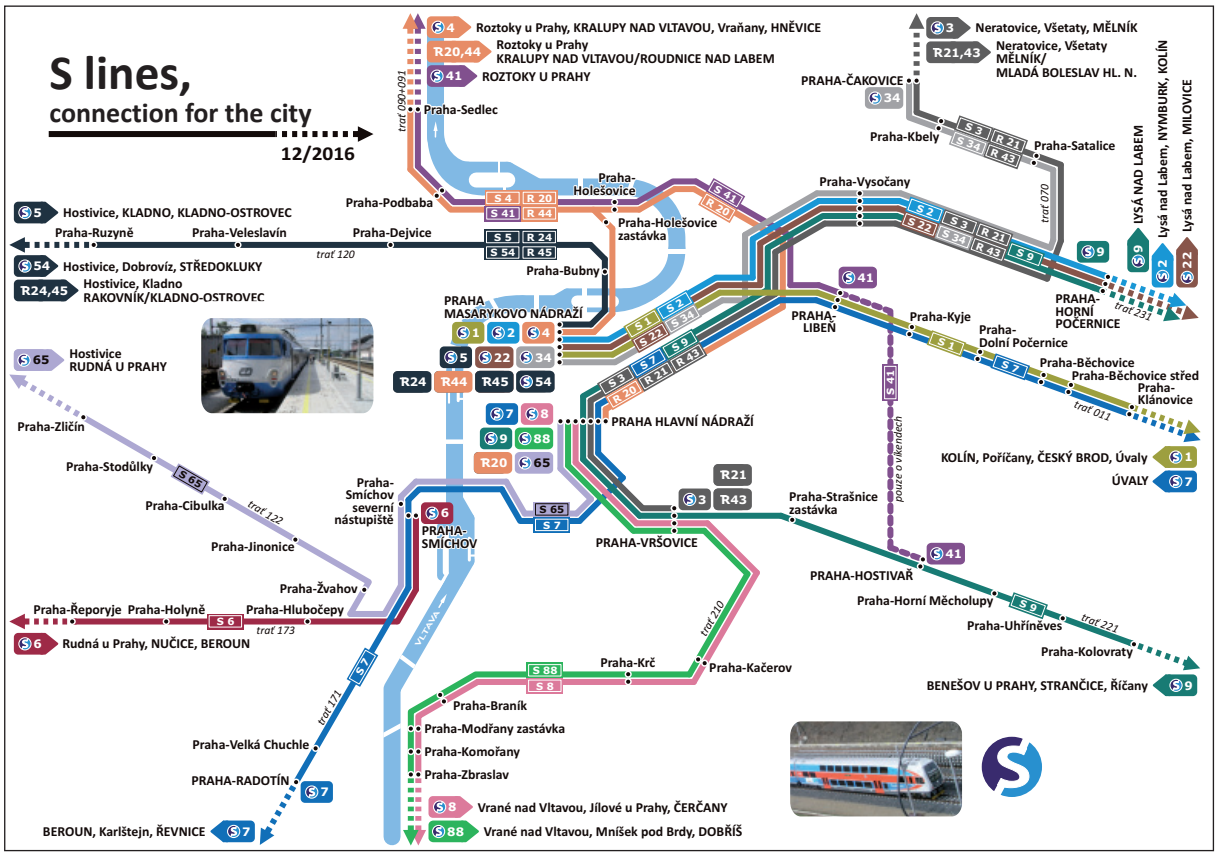
Railway transport has been under development under PID since 1992. In 2007 the process of labelling suburban lines with the letters “S” or “R” was begun, with emphasis on regular intervals and easy-

to-remember times. Recently, public transport connections that pass quickly through Prague in all directions have been expanded. Within Prague a total of around 900 train connections were dispatched under PID daily on workdays in 2016, carrying approximately 120 820 passengers.

Basic data on the PID rail network within Prague

Operators	No. of lines + tracks starting in Prague	Operating length
20 – ČD, a.s., 2 – KŽC Doprava, s. r. o.	22 lines, 11 tracks	160.0 km
Number of stations and stops	**Average distance between stops**	**Average travelling speed**
46	3.65 km	49.4 km/h
Ridership within Prague in 2016 and modal share of PID		**Operating time**
37 462 000 (on a PID or ČD ticket)	2.93 %	4:00-0:30
Annual number of train kilometres		**Number of trains running at peak**
4 163 662		102

S and R railway lines within the City of Prague



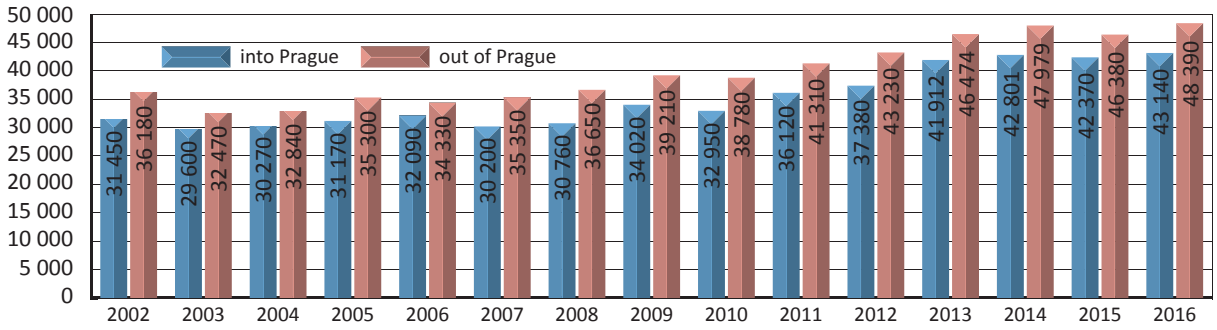
In addition to connections serving the territory of Prague, a further 21 PID lines travel only in the region outside Prague, on which roughly 600 train connections are dispatched daily. The operator of all these lines aside from the Podlipansko Motor Train is Czech Railways (ČD).

PID lines use 553 km of track around Prague and stop at 199 stations and stops. Annually PID trains in the region (including those entering Prague) transport approximately 35.8 million passengers.

Number of persons transported by rail under PID per year (using PID or ČD tickets)

Year	2009	2010	2011	2012	2013	2014	2015	2016
Persons	26 905 000	26 883 000	29 320 000	32 361 000	34 762 000	36 548 000	36 669 000	**37 462 000**

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



** On Saturdays in 2016 trains transported approx. 55 % of the weekday average; on Sundays 43 %.*

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

Station	PID lines stopping there	Entry, exit and transfer (ppl/day total)
1. Praha Masarykovo nádraží	S1, S2, S20, S34, S4, S5, R4, R5	44 540 (PID makes up 100 % of total daily turnover)
2. Praha hlavní nádraží	S3, R3, S7, S8, S80, S9	35 287 (PID makes up 43 % of total daily turnover)
3. Praha-Smíchov	S6, S7	11 728 (PID makes up 87 % of total daily turnover)

A Regionova train at the Main Train Station

A City Elefant train on the S2 by Krejcárek

Percentage share of tickets used by passengers on PID trains within Prague (workday)

Year	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016
PID document* (%)	32.5	39.2	52.1	57.7	60.4	63.8	68.7	72.7	72.2	**71.6**
of which individual PID fare (%)	-	-	7.2	10.6	7.5	5.6	8.5	5.3	5.3	**5.4**
ČD document, free transport (%)	67.5	60.8	47.9	42.3	39.6	36.2	31.3	27.3	27.8	**28.4**

** including individual PID tickets*

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

Section (line)	Frequency (morning peak)	Trip time	Distance
Praha-Klánovice – Praha Masarykovo nádraží/Praha hl. n. (S1, S7)	15 min	26 min	18 km
Praha-Kolovraty – Praha hlavní nádraží (S9)	10 - 20 min	22 min	17 km
Praha-Radotín – Praha hlavní nádraží (S7)	10 min	17 min	13 km
Praha-Čakovice – Praha hl. n. (S3, R21, R43)/P. Masarykovo n. (S34)	15 min	22 min	19 km
Praha-Sedlec – Praha Masarykovo nádraží (S4)	20 min	12 min	9 km
Praha-H. Počernice – Praha Masarykovo n./Praha hl. n. (S2, S9, S22)	15 - 20 min	16 min	15 km
Praha-Ruzyně – Praha Masarykovo nádraží (S5)	30 min	24 min	13 km

3.6 Funicular and ferries

The **funicular** is part of PID and provides a connection between Újezd, Nebozízek and Petřín. In 2016 it carried a total of 1 753 000 passengers (a daily average of 4 800) and accounted for 0.14 % of the overall number of persons transported by PID within the city. 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. In the summer the funicular makes 75 trips a day, in the winter 57, and when there is increased demand it also runs outside the scheduled timetable.

Extensive renovation of the funicular took place from 7 September 2015 until 8 April 2016. After 30 years of operation of the restored funicular, the stability of the substratum for the bridge structure around the Nebozízek stop had significantly deteriorated. The whole structure was leaning towards the nearby restaurant and slowly shifting towards Újezd. Thus it was demolished, all supports were stabilised and then a completely new bridge structure including Nebozízek stop were constructed.

Aside from refurbishment of the cable track around Nebozízek, all the cables were replaced, the support wall under Petřín was repaired and the public toilets and employee facilities at the top station were renovated. Both cable cars also had walls, floors and other interior elements repaired.

Since 2005, **river ferries** across the Vltava have become a commonplace component of Prague Integrated Public Transport in the city. Their primary importance is for recreational travel (connecting to cycle paths, serving the islands on the Vltava), but increasingly they are also used for standard transport, e.g. to work (in the winter 75 % of trips). In 2016 there were 6 ferries in operation, transporting 452 400 passengers (0.04 % of the total number of passengers transported under PID within Prague). The operator of the P3 ferry is Vittus group s. r. o., the P7 ferry Pražská paroplavební společnost, a. s., and the remaining four ferries are run by Pražské Benátky, s. r. o.

Overview of Prague ferries operated in 2016 and selected operating parameters

Line	Route	Beginning of operation	Service	Persons transported/ day	Persons transported/ year
P1	Sedlec – Zámky	1 Jul 2005	year-round	93	**34 100**
P2	V Podbabě – Podhoří	1 Jul 2006	year-round	574	**209 920**
P3	Lihovar – Veslařský ostrov	17 Jul 2007	seasonal	171	**37 530**
P5	Císařská louka – Výtoň – Náplavka Smíchov	31 Mar 2012	seasonal	349	**76 750**
P6	Lahovičky – Nádraží Modřany	19 Sep 2009	seasonal	130	**28 660**
P7	Pražská tržnice – Ostrov Štvanice – Rohanský ostrov	7 Aug 2015	seasonal	297	**65 440**

3.7 Non-PID public transport in Prague

Mass passenger transport outside the PID system is predominantly operated in Prague for special occasions, for example during the Prague Museum Night or the 722 line to the Zoo. In particular for people with reduced mobility and orientation, special lines are run from the metro to Výstaviště Holešovice and Výstaviště Letňany when various exhibitions and fairs are on.

751 line providing extra connections to Výstaviště Holešovice

For people with physical handicaps – holders of the ZTP and ZTP/P cards – whose registered address is in Prague or selected municipalities in the Central Bohemian Region (including one person providing accompaniment to such a card-holder) can make use of transport by on-call microbus (with possibility of assistance) from the organisations Societa and Handicap-transport (service is ordered by the City of Prague via ROPID). The service is available around the clock, with

a boarding fee of CZK 10 and a fare of CZK 32 per trip around Prague regardless of length. For trips from Prague to selected parts of the Central Bohemian Region or back, the client pays CZK 40.

A chapter of its own is formed by service to shopping, office and multifunctional centres at the edge of Prague or in poorly accessible areas. This includes, for example, the OCL line between the Letňany metro station and Letňany shopping centre or the line serving BB Centrum, which on workdays serves the office buildings north-east of Budějovická metro station. This transportation is generally free and paid for by the individual centre or shops.

3.8 Public 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 transport

A total of 1 114 train connections operated by Czech Railways started, ended or passed through Prague on an average workday in 2016, carrying around 142 000 passengers across the city limits. Roughly a quarter of that number were non-PID connections, while the remainder were under PID.

The operation of (non-PID) long-distance passenger rail transport is provided by Czech Railways, RegioJet, LEO Express and Arriva. The infrastructure for transport is provided by the state organisation the Railway Infrastructure Administration (SŽDC).

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	225 474	116 688	78 130	86 896	91 314	60 298	39 188	42 636
Trains per day**	659	343	237	258	266	184	118	133
– PID	370	343	186	226	177	153	63	133
– non-PID	289	0	51	32	89	31	55	0

** number of trains starting, ending or stopping ** average workday 2016*

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

Year		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
of trains	starting	160 360	174 615	215 189	217 472	217 481	219 679	214 483	213 973	224 336	**229 222**
	ending	160 665	174 947	215 598	217 886	217 895	220 098	214 892	214 381	224 764	**228 352**
	total	321 025	349 562	430 787	435 358	435 376	439 777	429 374	428 353	449 100	**457 574**

Passenger turnover at most important railway stations in Prague in 2016 (only ČD trains)*

Station	Praha hlavní nádraží	Praha Masarykovo nádraží	Praha-Smíchov	Praha-Vršovice	Praha-Libeň	Praha-Vysočany	Praha-Holešovice	Praha-Radotín
Ppl/year (in 000s)	28 332	12 865	4 587	1 901	2 324	1 417	917	2 274
Ppl/workday	81 618	44 640	13 415	6 030	7 207	4 956	2 857	7 515
– PID	35 287	44 640	11 728	5 444	5 361	4 370	1 563	7 515
– non-PID	46 331	0	1 687	586	1 846	586	1 294	0

** number boarding and disembarking*

Non-PID bus transport

Public bus transportation between Prague and other areas is operated by a number of carriers from the Czech Republic; some international lines are also run by carriers from other countries. 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 (primarily long-distance) bus transportation.

Development of selected characteristics at Florenc bus station

	2009	2010	2011	2012	2013	2014	2015	2016
Connections per year	160 000	145 000	145 000	150 000	155 000	155 000	170 000	**180 000**
Connections per average workday	460	420	420	425	435	450	485	**490**
international	100	105	130	145	155	175	230	**265**
domestic long-distance	360	315	290	280	280	275	255	**225**
Number of carriers	93	100	100	100	105	120	125	**125**

Other lines connecting Prague with external areas are dispatched and terminated to the greatest extent at bus stations Nádraží Veleslavín, Na Knížecí, Černý Most, Hradčanská and Zličín. To a minor extent (up to 3 000 connections a year) long-distance buses also leave from Želivského, Letňany and Opatov.

Departure stop at Roztyly

Line SID A22 at the stop Nádraží Veleslavín

Central Bohemian Integrated Transport (Středočeská integrovaná doprava – SID), established by resolution of the Central Bohemian Regional Assembly on 27 June 2005, also contributes to suburban bus transport. It provides public transport in selected parts of the Central Bohemian Region on regional and municipal lines, but without any shared fare with PID or trains. It is organised by the Transport Department of the Central Bohemian Regional Authority.

According to the available sources, SID transports as many as 150 000 passengers a day, of those around 40 000 by urban public transport in the region's seven largest cities. Lines crossing into Prague transport approximately 3.46 million passengers a year.

In recent years the political representations of Prague and the Central Bohemian Region have renewed talks on integrating PID and SID, and these continued in 2016. In April 2016 a Steering Committee for a Joint ITS started work and in September the creation of the Central Bohemian organisation IDSK was approved, which is to be the partner for ROPID in preparing further integration steps in both regions in 2017.

4 BICYCLE TRAFFIC

The marked cycle route network in the City of Prague has a total length of 470 kilometres. The individual cycle routes are broken down into arterial, main, supplementary and local and are marked with the letter A and a number. This system is supplemented by cyclo-tourist routes.

Basic information on bicycle infrastructure in Prague

Total length of marked cycle routes	Total length of protected marked and recommended cycle routes	Two-way lanes for cyclists
472 km	173 km	23 km (119 sections)
Cycle pictocorridors	**Separate cycle lanes**	**Shared cycle lanes (+ bus + taxi)**
33 km	46 km	23 km
Bicycle stands (two spots)	**Advance stop lines for cyclists**	**Bicycle crossings**
2 507	280 intersections, 1 164 lanes	72 (34 with traffic signals)

Bicycle crossing Ke Štvanici

Path by Košíkovský potok

New bicycle infrastructure implemented in 2016

Type	Length / number	Type	Length / number
Cycle lanes (V14)	1 690 m	Shared cycle lanes (+bus+taxi)	1 435 m
Cycle pictocorridors (V20)	0 m	Bicycle crossings (V8)	9 (5 w/ signal)
Two-way lanes for cyclists	+1 790/-1 780 m (+8/-14 sections)	Bicycle stands (two spots each)	793

In 2016 the “Centrum Chodov” shopping centre set up two new parking lots for bicycle. These include lockable bike boxes.

Prague’s first B+R lot was opened by the renovated Klánovice train station in September 2016, combining lockable bike boxes and covered bike stands.

B+R Klánovice

In 2016, the intersection of streets Prokopova – Rokycanova was redeveloped. The modifications included restricting the exit from Rokycanova from the south-west and adding a new crossing for cyclists. At the end of September 2016, the first public service station for bikes in Prague was opened. This is a space where anyone can stop and make use of a public bicycle pump, service stand and set of tools.

Of the non-investment projects, the significant ones include work in Prague 6, where several two-way lanes for cycles were added in Dejvice as part of implementing paid parking zones (Dejvická, Národní obrany). A two-way lane for cyclists was also added on Dělostřelecká between Buštěhradská and Pod hradbami.

In Prague 10, continuous bike lanes were added during the refurbishing of tram tracks in front of two successive intersections on V olšinách – the turns to Ruská and Průběžná. The design is unique in terms of bicycle transport in Prague: "bicycle turns" have been added, which offer continuous passage by dedicated bike lane, while automobiles have lanes for turning right.

Other important works in 2016 include new bike lanes in Prague 7 on Bubenská between Heřmanova and Veletržní and the creation of the first protective bicycle lanes in Prague on Hlubočepská ulice.

Protective bike lane, Hlubočepská

Bicycle turn, V olšinách

As part of the European Mobility Week at the end of September 2016, the cycle route "Greenways Prague – Vienna" was marked within Prague. It is around 25 km long and copies the successive and connected Prague bike routes (A33+A12+A22+A216+A23).

Cyclists on Prague Integrated Public Transport (PID)

In Prague it is permitted to transport a bicycle on the metro, on trains, on selected sections of tram lines (outside the afternoon rush hour), on the funicular and on ferries. The transport of bicycles is free within Prague. For safety reasons the transport of bicycles is not permitted on bus lines (with the exception of cycle buses, the AE line and specially equipped buses on the 147 line). Bicycles may not be transported during periods of heavy demand.

Starting 25 March 2016, bicycles may be transported in the front and back part of each metro car with the exception of the very first car of the train. Each such space has a maximum capacity of two bikes. The number of spaces available for bicycles has thus increased from five to nine in each metro train. The transport of bicycles is free. Each set of doors in the Prague metro is marked with a colour sticker clearly telling travellers with a bicycle whether the space is meant for them or not.

Selected lifts can be used to transport bicycles at metro stations (Anděl, Bořislavka, Černý Most, Háje, Chodov, Ládví, Letňany, Národní třída, Nemocnice Motol, Pankrác, Prosek, Roztyly, Skalka, Střížkov). Such lifts are marked with a blue pictogram of a bicycle.

On trams, a bicycle may only be transported on selected stretches heading out of the centre, and not on the afternoon peak on workdays (14:00-19:00).

On all railway lines included under PID, service is provided by vehicles that allow the transport of bicycles. For passengers with a valid PID ticket (or document for free transport according to the PID Tariff), transport of bicycles as accompanying luggage is free within Prague (zones P, 0, and B), while outside the city's territory there is a fee. Cyklohráček, the child-oriented bike trip train, which runs between Praha Masarykovo nádraží – Praha-Dejvice – Podlešín – Slaný, was in operation on non-workdays from 25 March until 30 October 2016. The second train car is the preferential wagon for transporting cyclists, being equipped with a special area for transporting bicycles and having a reduced number of seats. The price for transporting a bicycle depends on the distance, but starts at CZK 30.

The transport of bicycles is not permitted on buses, except the 147 line, the AE line (Airport Express) and the cycle bus.

On the Petřín funicular, bikes are transported for free in the second part of the car (marked with a pictogram). Free transport of bikes is also possible on all ferries connecting the banks of the Vltava, thus connecting the A1 and A2 arterial cycle routes (transport may be restricted during high demand). A folded fold-up bike, child's scooter or child's bicycle for children under 6 can also be transported as luggage, but it must meet the dimension allowance (50x60x80 cm).

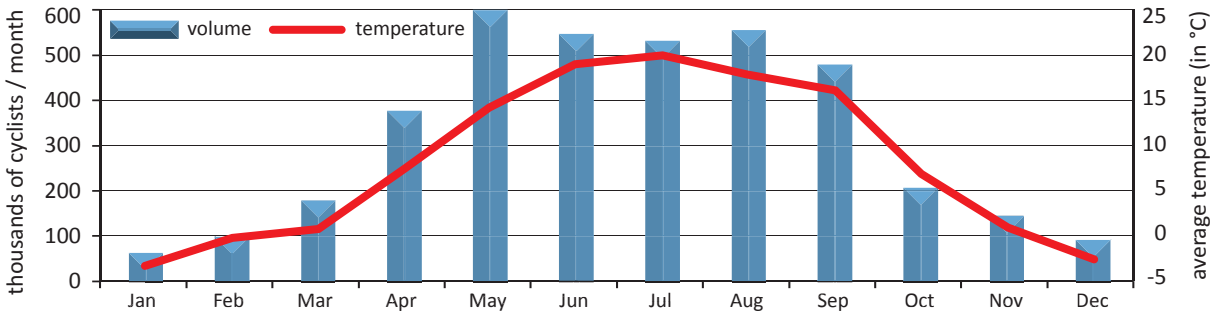
Automatic bicycle counters

Automatic bicycle counters allow online access to data 24 hours a day year-round, thus providing a detailed summary of bicycle activity at various times of year, as well as the changes in volume over the day or week. The first counters were installed in autumn 2009.

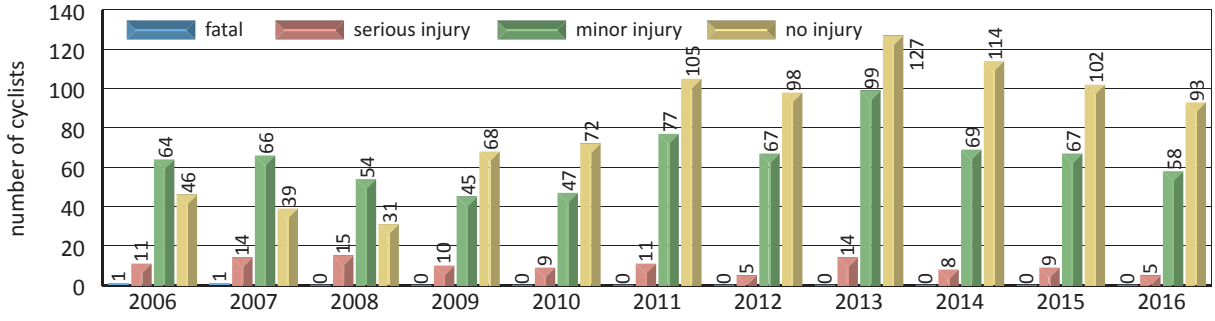
At the end of 2016 there were 27 locations in operation in Prague. Since November 2016 a new location has been in trial operation at Elsnicovo náměstí.

Comparing 2016 to 2015 at all comparable locations, a rise in bicycle traffic volume of 0.56 % was shown. The bicycle profiles Povltavská and Modřany have long been the locations with the highest detection of cyclists in both directions (around a half million a year). The month with the highest number of detected cyclists was May.

Annual variation of bicycle traffic 2016 according to automatic bicycle counters



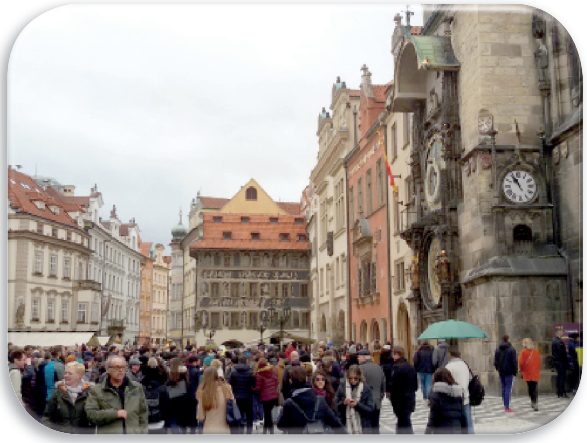
Results of cyclist accidents in Prague 2006–2016 (source Traffic Police Department, City of Prague Police)



5 PEDESTRIAN TRAFFIC

Movement is part of life and walking is an integral component of being human. It cannot be forgotten that while walking can be the mode of a whole trip from start to finish, it is also at the beginning and end of every trip performed by any form of individual or mass transport.

Walking is a simple, cheap and environmentally friendly form of transport. It has both a transport function and a recreational and social one. It helps bolster one's physical and mental health, is relaxing, contributes to contact between people, and allows one to perceive the environment in which one spends time or lives. Pedestrian traffic is not just one type of transport, it has a unique and irreplaceable city-forming function. It allows for immediate mobility independent of spatially and economically more demanding types of transport and helps increase quality of life in the city.



Old Town Square

Boulevard by the Nové Butovice metro station

The volume of pedestrian traffic depends on location, type of pedestrian path and time of day. In Prague, the greatest volume of pedestrian traffic is in the city centre on the "golden cross" (Václavské nám. – ulice Na můstku – ulice 28. října – Na příkopě), where it ranges from 5 000 to 8 000 pedestrians an hour on workdays. Another of the most frequented pedestrian routes is that connecting the touristically attractive sites between Prague Castle and the Old Town Square, where the workday volumes can reach 3 000 to 4 000 pedestrians an hour. Pedestrian volumes here are another 15–20 % higher on weekends (particularly on Saturday).

Part of the boulevard in front of the western entrance to the Nové Butovice metro station underwent a transformation.

Revitalisation of the park Balabenka led to improved living conditions for residents of the adjacent buildings, better quality public space and increased safety in the neighbourhood.

Park Balabenka

Measures to increase pedestrian safety focused on routes with a high volume of pedestrians, particularly children and seniors, and areas with a higher occurrence of individuals with limited mobility and orientation. Individual structural and non-structural modifications take place in cooperation with the municipal districts, with funding coming primarily from the BESIP programme and pavement programme. Modifications to make pedestrian crossings barrier-free are paid mainly from general maintenance funding.

Regulatory measures that lead to increased pedestrian safety on the existing road network include bollards, speed humps, bumps, emphasised signage or carriageway surface roughening.

6 TRANSPORT TELEMATICS AND TRAFFIC MANAGEMENT

The systems for the various forms of transport telematics continued to be expanded and innovated upon in 2016 with an emphasis on connecting them to each other. The primary goal was to help these systems optimise transport and increase traffic flow and safety. Transport telematics has increasingly extensive applications in traffic management processes using traffic lights and control centres, as well as in providing traffic and travel information, in parking, monitoring and early warning systems, and in improving the quality of public transport.

6.1 Construction and renewal of traffic signals

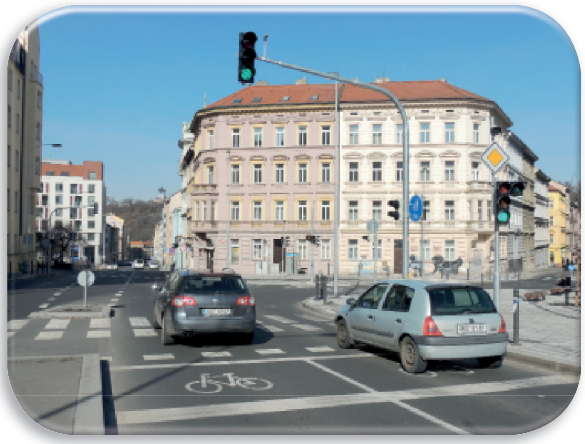
In 2016 a total of 11 new traffic signals were built within the City of Prague by TSK and other investors, 6 of them at stand-alone pedestrian crossings. The number of sequencers increased to 658. The number of signal-controlled sites on the road network reached 698. No new signals were added on the tram network and the total number was reduced by four traffic signals that were permanently turned off. Sixteen new sites equipped with active detection for bus priority were added. Detailed information on priority for public transport is provided in Chapter 7.

Basic data on traffic signals in Prague

Total in Prague	Stand-alone pedestrian crossings	Centrally controlled
658 (by number of controllers)	152	456
On tram network	**With tram right-of-way**	**With bus right-of-way**
250	195	223
Number of new, removed and refurbished traffic signals in 2016		
11 new, 0 removed		20 refurbished

As part of an investment project, TSK built 7 new traffic symbols. For example, two new crossings across the busy streets Žitná and Patočkova were put in place. Outside TSK investment projects, three new traffic signals were put into operation on Poncarova ulice.

In 2016 a total of 20 signal-controlled intersections were refurbished. For example, the signals at highly trafficked intersections on Průmyslová and Černokostelecká were redone.



SSZ 3.352 Prokopova – Rokycanova

Development of basic data on traffic signals in Prague

Year	1961	1971	1981	1990	2000	2005	2007	2009	2011	2012	2013	2014	2015	2016
Traffic signals total	33	76	339	348	398	473	504	554	594	612	626	634	646	**658**
Stand-alone crossings	-	9	37	45	57	72	78	96	112	118	125	144	146	**152**
Centrally controlled	-	-	-	20	116	192	218	236	283	294	321	320	440	**456**
With tram priority	-	-	-	1	59	94	109	133	158	164	174	184	189	**195**
With bus priority	-	-	-	-	-	8	53	104	144	167	180	200	206	**223**

6.2 Control centres

The system of traffic management in Prague is divided up into several levels. At the lowest level are the individual traffic signals which are gradually being connected to the Area Traffic Control Centres

(ATCC). Control of traffic signals and management of whole areas is centralised through the automated ATCCs into the main Urban Traffic Control Centre (UTCC). Here the dispatchers can control around two thirds (66 %) of all the traffic signals in Prague.

In 2016, 16 traffic signals were connected to the central level, with the total as of 31 December 2016 being 456. A new type of area control centre is being used on a trial basis at ATTC Vltavská, the VRS 5000 (currently only hooked up to a testing traffic signal). Soon it will replace the existing VRS 2100.

6.3 Traffic Information Centre (TIC) Prague

TIC Prague has been in operation since 1 July 2005 and is the longest serving centre of its type in the Czech Republic. It is run by the Technical Administration of Roads.

TIC dispatchers ensure the entering of information into the content management system, collaborating actively with the Prague Outer Ring Road Control Centre (PORR CC) in Rudná, the National Traffic Information Centre in Ostrava (NTIC), Czech Radio and Czech Television. They also run the system of devices for traffic information (DTI), record the differences between automatically generated traffic volumes and the actual situation, and last but not least monitor alternative sources of traffic information.

UTCC Praha

On the DTIs, TIC Prague provides drivers with current traffic information on traffic levels (on a scale of 1 to 5), traffic accidents, exceptional situations on the roads, long-term planned closures and now also informs on traffic regulation in Prague's tunnels. It also provides output for the web, including screenshots from selected camera systems. Drivers are informed on the traffic situation via the website www.dic.tsk-praha.cz/, where one can also find the texts currently displayed on the DTIs.

TSK provides drivers in Prague with information broadcast through RDS-TMC (Radio Data System – Traffic Message Channel) on the frequency of Czech Radio's Regina DAB Praha station. This system displays the current traffic information in navigation systems and makes driving around the city easier for drivers.

6.4 Other transport telematic systems

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

Television monitoring systems in the City of Prague (TVD)

System	Cameras	System description
TVD-TSK	456	Monitoring of traffic situation – run by TSK
TVD-TKB	395	Monitoring of traffic and equipment in Blank Tunnel Complex and linked traffic signals
MKS	924	Monitoring of (traffic) safety system – run by City Hall Crisis Management Department
DPP	1 200	Monitoring of situation in metro – run by Prague Public Transport Company

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. Overall 851 cameras are available in the monitoring system, both from TSK's monitoring systems and the camera monitoring of the Blanka Tunnel Complex.

There are several types of camera depending on their purpose. In tunnels there are fixed cameras with a video detection safety function. These cameras can detect a stopped vehicle, slow-moving vehicle, emerging congestion, object on the roadway that is blocking traffic or a potentially dangerous situation such as a pedestrian in traffic, vehicle going the wrong way or reduced visibility in the tunnel.

The second type of camera are rotating cameras that allow operators to rotate or zoom the camera, which expands the area they can supervise. Newer types of such rotating cameras installed in the last three years can also detect basic traffic characteristics if it is in its preset condition. These are primarily the cameras located on the City Ring Road and radial roads, which are collectively labelled as cameras of the Comprehensive Telematic Monitoring System (CTMS). Stills from traffic cameras are also available on TSK's website at http://unicam.tsk-praha.cz/Discoverer/KTDS. The process of digitising TSK's traffic cameras and integrating them into the city-wide Municipal Camera System continues.

Also serving to directly or indirectly manage and influence traffic in Prague are devices for traffic information – DTI. The project for building and modernising DTIs in Prague was completed in 2013. In 2015 the DTIs installed as part of building the Blanka Tunnel Complex were also hooked up to the system, which now numbers a total of 72 information boards.

Employees of the Traffic Information Centre (TIC) can use the content management system that collects current traffic information from various subsystems to inform drivers about exceptional situations, closures and restrictions or on the current traffic situation immediately in front of the driver. The placement of DTIs is planned with regard for the important points where a decision must be made so that a driver can re-evaluate their route choice in time.

One of the other types of information displayed on DTIs is information on travel times. As of 31 December 2016, travel times could be displayed on 24 DTIs and one simplified display board. These and other travel times not connected to a specific DTI are available in a web application at the address http://unicam.tsk-praha.cz/Discoverer/TravelTime3/map.

Currently the time taken to travel through a segment is measured at 72 sites. The principle of determining travel times is based on sensors monitoring the actual time it takes for vehicles to travel through a given segment. Video detection or Bluetooth scanners are installed at the beginning and end points of the segments and they automatically evaluate the travel time by comparing the device ID or licence plate.

The system of weighing of vehicles while they are in motion (WIM – Weight in Motion) is in place at eight locations in Prague heavily trafficked by freight vehicles. The principle of the system is based on measurement of the dynamic effects of individual wheels on the carriageway (pressure sensors). When the vehicle passes, the speed, acceleration and deceleration are also determined. The system also categorises vehicles into classes and, in connection with other WIM locations (licence plate capturing), makes it possible to evaluate whether vehicles are in transit or heading for their destination.

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 2016, speed was measured in this manner at 61 stretches in Prague. Of the total number, 10 locations are located in Prague's tunnels on the City Ring Road, where they significantly contribute to the flow and thus also safety of traffic. In 2016, 16 new segments were put into operation.

Spot speed measurement using just one camera and detection loops was first realised in Prague in 2010. As of 31 December 2016 spot speed measurement was being conducted at 38 sites. In 2016, 16 locations were added, mostly as a part of new section speed measurement sites.

Three new devices for detecting and documenting the running of red lights were installed in 2016. Thus as of 31 December 2016, this misdemeanour was being recorded at 18 traffic signals. The system is comprised of a pair of cameras (overview and detail) that record the current state of the traffic light and the moment the vehicle crosses the stop line.

Another type of transport telematic device is strategic traffic detectors, which can be spot detectors (SDDŘ) or section detectors (SDDÚ). These are a significant source of traffic data in the City of Prague. A total of 166 of such strategic detectors are in place on main roads (23 SDDÚ and 143 SDDŘ). Non-transport data are collected by 28 weather detectors.

As of 31 December 2016, the occupancy of 54 parking spots was being monitored by magnetometric detectors. The data are read by a data collector at the site and then available for users via a mobile phone application. Parallel to this project, monitoring of the paid parking zone on Řásnovka was installed. This is a larger area without distinction between individual spots.

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 Transport Policy Principles”. This process helps maintain a positive ratio of persons transported by mass transit in relation to individual transport. It also helps keep public transport flowing smoothly and transport 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 can thus have the first choice and extended green lights adjusted in real time according to their needs so 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
250 (100.0 %)	195 (78.0 %)	71 (28.4 %)	124 (49.6 %)
2016: +2	2016: +6	2016: +4	2016: +2

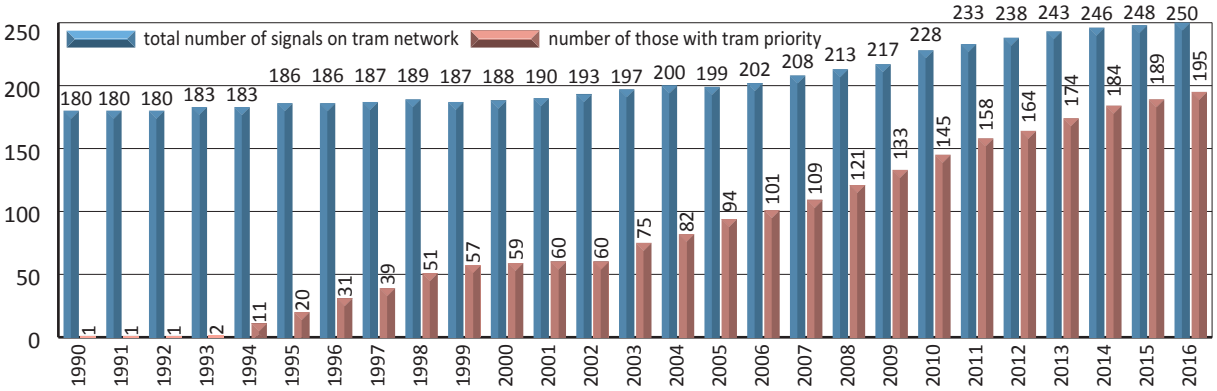
* *Absolute priority means that all trams will pass through the intersection without stopping (except when multiple trams arrive at once); conditional means that the delay and stopping of trams at the signal will at least be severely reduced compared to signals without priority*

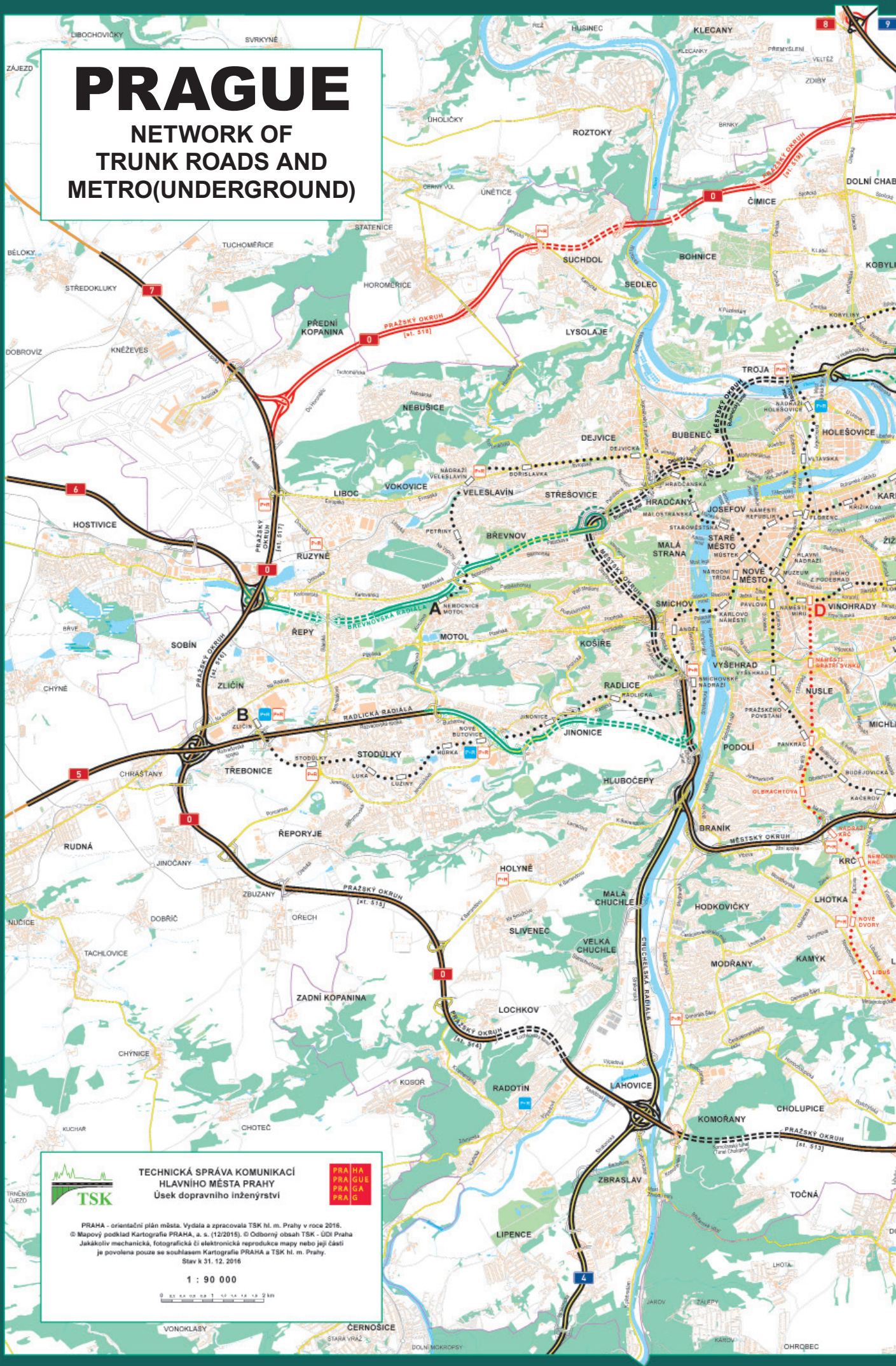
SSZ 6.118 Evropská – Horoměřická

SSZ 7.102 Milady Horákové – U Sparty

The percentage of signal sites in Prague with some form of tram preference exceeded 78 %.

Traffic signals on the tram network




PRAGUE
NETWORK OF
TRUNK ROADS AND
METRO(UNDERGROUND)
TECHNICKÁ SPRÁVA KOMUNIKACÍ
HLAVNÍHO MĚSTA PRAHY
Úsek dopravního inženýrství
PRAHA - orientační plán města. Vydala a zpracovala TSK hl. m. Prahy v roce 2016.
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PRAŽSKÝ OKRUH
BŘEVNOVSKÁ RADIÁLA
RADLICKÁ RADIÁLA
MĚSTSKÝ OKRUH
CHUCHELSKÁ RADIÁLA
A
B
D
LIBOCHOVIČKY
SVRKYNĚ
ZÁJEZD
ÚHOLIČKY
ROZTOKY
ČIMICE
DOLNÍ CHABY
ÚNĚTICE
STATENICE
TUCHOMĚŘICE
BĚLOKY
STŘEDOKLUKY
HOROMĚŘICE
SUCHDOL
BOHNICE
SEDLEC
KOBYLISY
PŘEDNÍ KOPANINA
LYSOLAJE
DOBROVÍZ
KNĚŽEVES
TROJA
NEBUŠICE
DEJVICE
BUBENEČ
HOLEŠOVICE
LIBOC
VOKOVICE
VELEŠLAVÍN
STŘEŠOVICE
HRADČANY
JOSEFOV
HOSTIVICE
BŘEVNOV
MALÁ STRANA
STARÉ MĚSTO
NOVÉ MĚSTO
RUZYNĚ
SMÍCHOV
VINOHRADY
ŘEPY
MOTOL
KOŠÍŘE
SOBÍN
VYŠEHRAD
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JINONICE
PODOLÍ
STODŮLKY
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RUDNÁ
JINOČANY
HOLYNĚ
KRČ
ZBUZANY
MALÁ CHUCHLE
LHOTKA
DOBŘIČ
ŘEČICE
SLIVENEC
HODKOVIČKY
TACHLOVICE
VELKÁ CHUCHLE
MODŘANY
KAMÝK
ZADNÍ KOPANINA
LOCHKOV
CHÝNICE
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RADOTÍN
LAHOVICE
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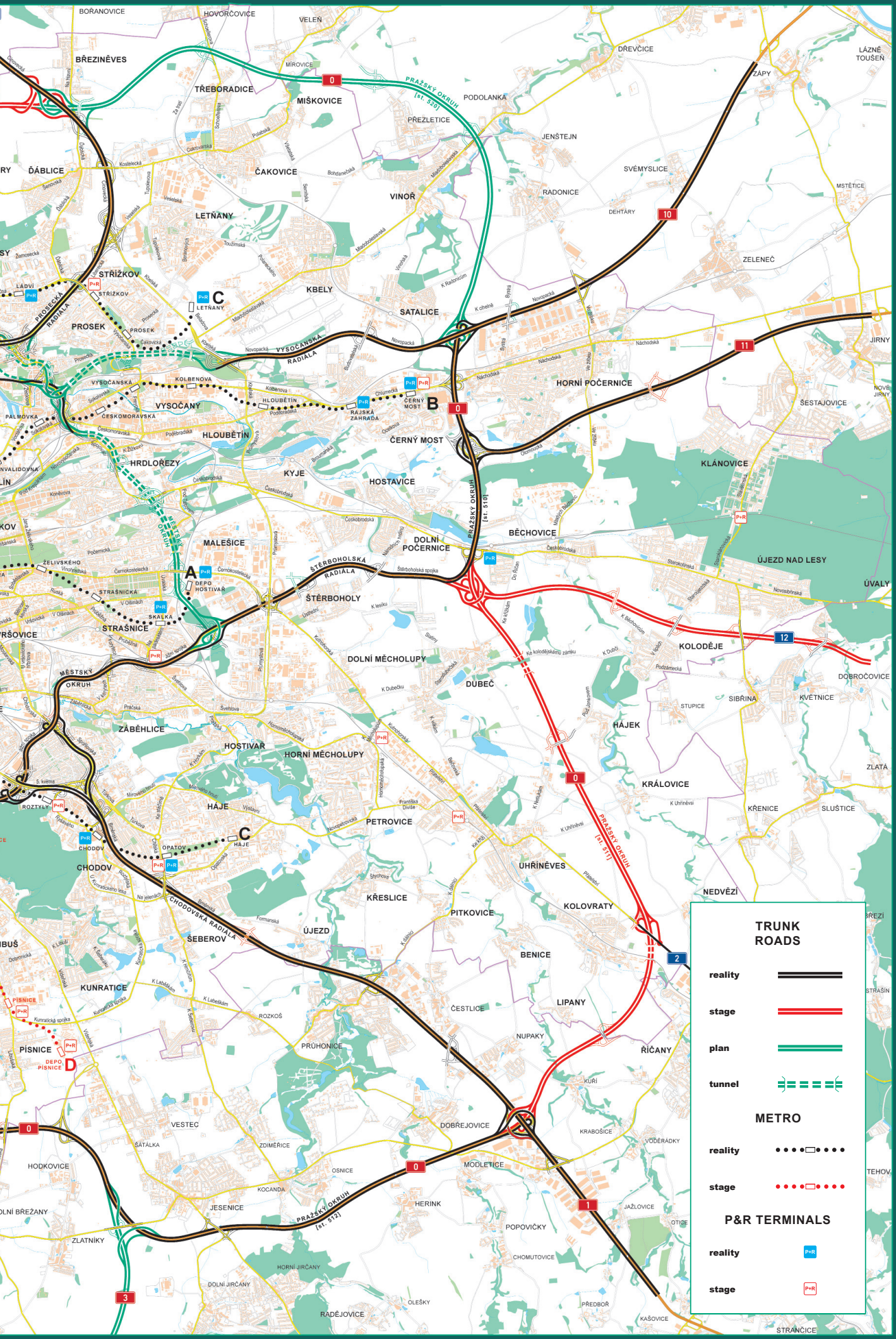
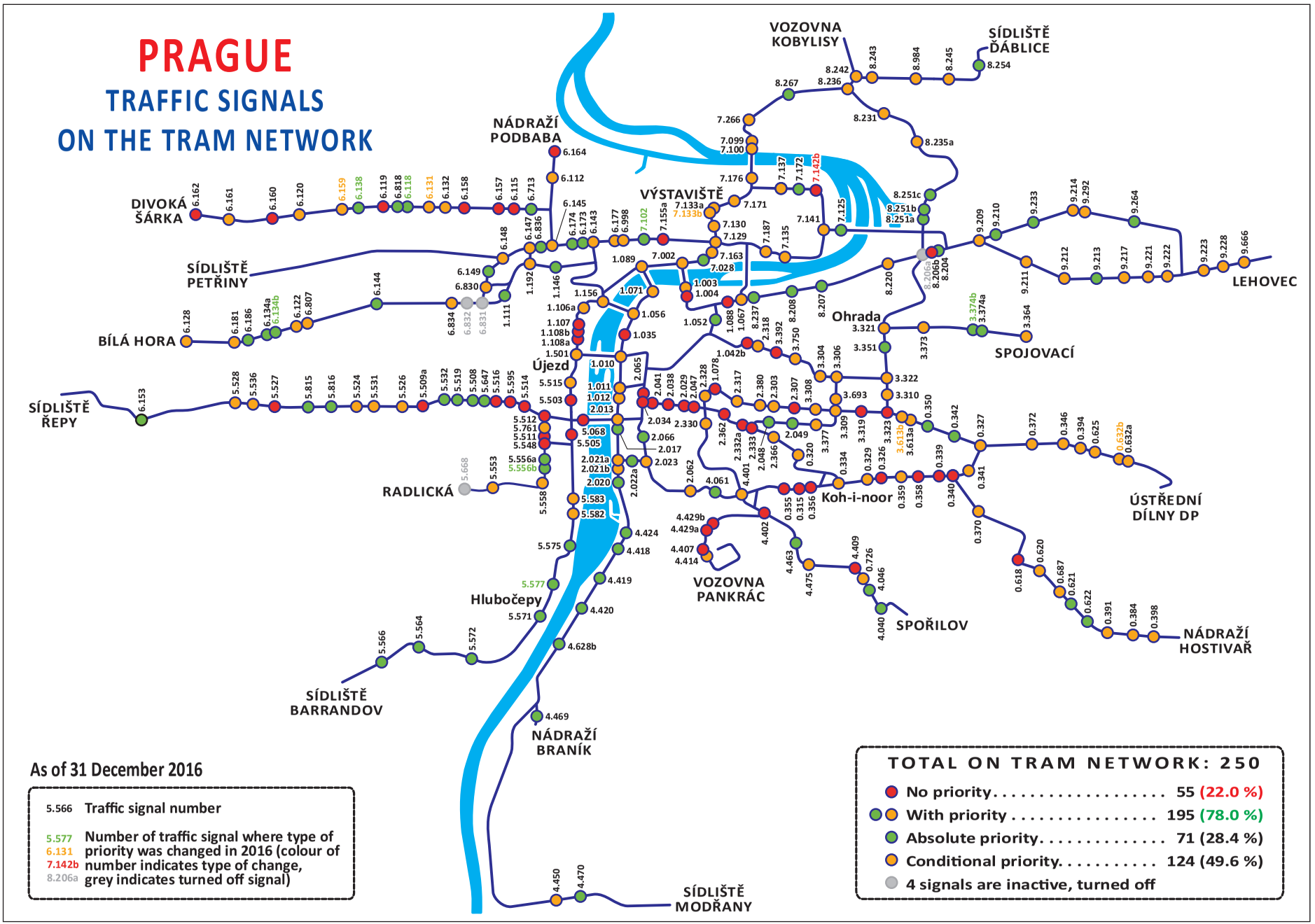

TRUNK ROADS
reality
stage
plan
tunnel
METRO
reality
stage
P&R TERMINALS
reality
stage

PRAGUE

TRAFFIC SIGNALS ON THE TRAM NETWORK



As of 31 December 2016

5.566 Traffic signal number

5.577 Number of traffic signal where type of priority was changed in 2016 (colour of 6.131 number indicates type of change, 7.142b grey indicates turned off signal)
8.206a

TOTAL ON TRAM NETWORK: 250

- No priority . . . . . 55 (22.0 %)
- With priority . . . . . 195 (78.0 %)
- Absolute priority. . . . . 71 (28.4 %)
- Conditional priority. . . . . 124 (49.6 %)
- 4 signals are inactive, turned off

Bus priority at traffic signals – basic data		
With detection for bus priority	**With active* bus detection**	**With passive* bus detection**
223 (100.0 %)	216 (96.9 %)	7 (3.1 %)
2016: +17	2016: +17	2016: +-0

* *Passive detection means a bus's claim is recorded through a standard automobile detector (induction loop or video loop), primarily in a dedicated lane. Active detection means a bus logs in and out through radio signals broadcast at defined points from the vehicle to the traffic signal. Infrared beacons or GPS are used to locate vehicles approaching the signals.*

Bus priority in the form of active detection was put in place at the first pair of intersections in Prague during 2003 as part of the capital's participation in the EU's Trendsetter project. After that, bus priority was primarily implemented at the traffic signals around the new sections of the metro (Nádraží Holešovice – Ládví – Letňany).

Now priority is the standard implemented at new or refurbished traffic signals. In 2016, 16 signals where buses were preferred using active detection were added.

Signal 0.612 Černokostelecká – Průmyslová

Traffic signals equipped with detection for bus priority on the bus network													
Year	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Signals w/ bus priority	7	8	20	54	81	104	121	144	167	180	200	206	**223**

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 in public transport vehicle priority is achieved by constructing tracks on own track bed, potentially also separated from other traffic by concrete dividers (in Prague 52 % of the 142.7 km of tram track is on its own track bed). For buses, greater fluidity is achieved with separate bus lanes or by buses driving on the tram tracks.

Tram priority – raised thresholds along tram tracks

The first longitudinal divider used in Prague was built into 50 m of carriageway on Bělehradská ulice in 1996. At the end of 2016, concrete dividers along tram tracks had reached a total length of approximately 12 400 metres. Last year 480 m of such dividers were added. The largest section (390 m) was installed as part of track refurbishing on the street U plynárny (though the road surfaces alongside the tram tracks will largely not be finished until 2017).

Bus priority – dedicated lanes

Dedicated BUS lanes on tram tracks serve to increase the flow of public transport and to provide better conditions for transferring between buses and trams. Other dedicated lanes on roads are generally created in areas where bus lines are held up in congestion and the width of the road allows for the demarcation of a separate lane for buses (along with bicycles and taxis).

At the end of 2016 the total length of dedicated bus lanes had reached 28 130 metres on roads (an increase of 1 435 m) and 11 700 metres on tram track bed (an increase of 350 m).

The most important dedicated lane implemented last year was on Strakonická heading into the centre in the 960 m long segment between the streets K sádkám and Dostihová. Being able to drive along what was originally road shoulder sped up bus service during congestion along Strakonická toward Smíchov by as much as 5 minutes. The same time savings are achieved by buses driving along a new 350 m long dedicated lane on the tram tracks on Svatovítská ulice toward Vítězné náměstí.

8 ROAD TRAFFIC SAFETY

8.1 Traffic accidents

In 2016 there were 22 876 accidents recorded in Prague (+7 % compared to 2015), with 21 casualties (-16 %) and 2 177 persons injured (-4 %). There were 654 accidents involving pedestrians (±0 %), with 12 persons killed (-20 %) and 606 injured (-2 %). Pedestrians themselves were at fault for 302 accidents (+2 %), resulting in 4 casualties (-43 %) and 269 injuries (-4 %).

The decisive majority of accidents were caused by drivers (22 206 of 22 876 accidents, or 97 %). The main causes of accidents caused by drivers were failure to keep proper distance, which is caused primarily by the nature of urban driving, lack of due care and attention and failure to yield. The number of accidents where alcohol was detected in the culprit was 422 (-7 %).

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

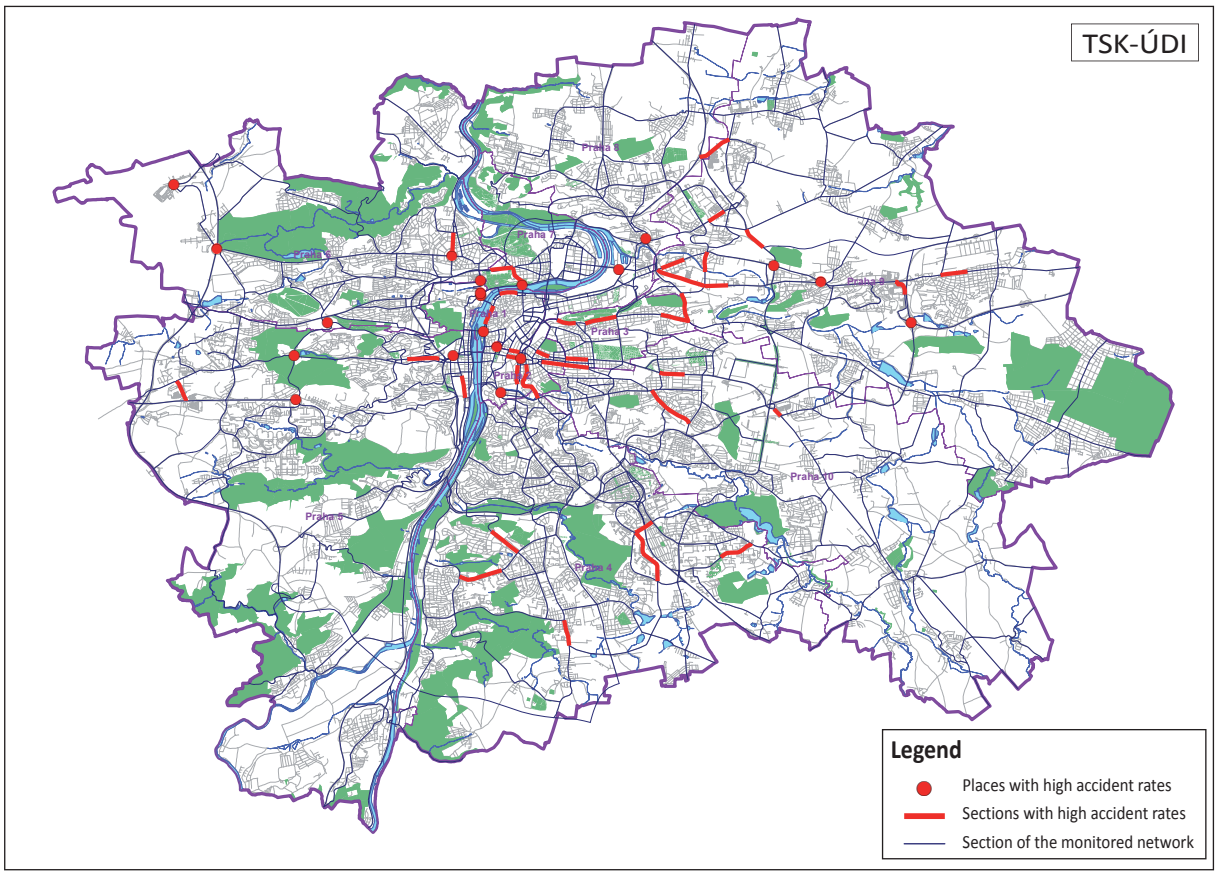
Year	2014	2015	2016	Diff. 16/15 (%)
Number of accidents	19 306	21 462	**22 876**	**+ 7**
Number of fatal injuries	20	25	**21**	**- 16**
Number of serious injuries	206	179	**194**	**+ 8**
Number of minor injuries	2 070	2 078	**1 983**	**- 5**
Number of accidents with injury	1 946	1 909	**1 839**	**- 4**
Number of accidents without injury	17 360	19 553	**21 037**	**+ 8**
Number caused by the driver	18 687	20 754	**22 206**	**+ 7**
due to failure to keep proper distance	3 612	4 236	**4 541**	**+ 7**
lack of due care and attention	2 355	2 401	**2 785**	**+ 16**
red-light violation	279	349	**309**	**- 11**
failure to yield in violation of a traffic sign	1 016	1 074	**1 162**	**+ 8**
failure to yield when making a left turn	604	741	**671**	**- 9**
failure to yield when passing from lane to lane	1 376	1577	**1 772**	**+ 12**
failure to adapt speed to density of traffic	114	104	**96**	**- 8**
failure to adapt speed to vehicle condition	128	118	**114**	**- 3**
failure to adapt speed to road conditions (ice, potholes, wetness, mud, etc.)	627	531	**722**	**+ 36**
failure to adapt speed to road (turn, width, decline, incline, etc.)	197	175	**185**	**+ 6**
Caused by road defect	23	17	**8**	**- 53**
Caused by pedestrian	314	295	**302**	**+ 2**
Caused by cyclist	114	102	**93**	**- 9**

The basic trends in accident rate in 2016 can be characterised by a growth in the number of recorded accidents in comparison with 2015, a decline in the number of fatalities and a slight decline in the number of accidents resulting in injury.

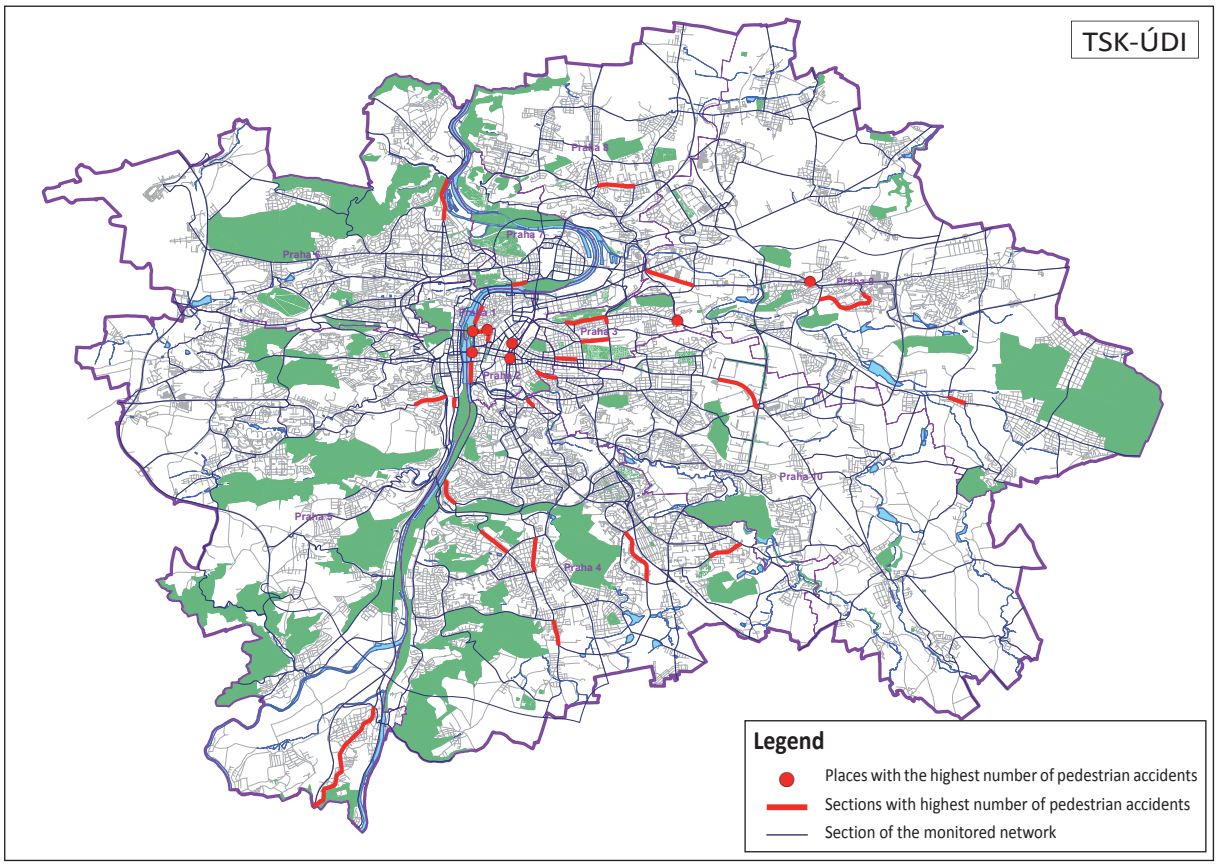
In assessing the long-term trends in accident rates, it can be stated that from the 1960s through the 1980s, the long-term development of the accident rate was relatively positive, as the number of recorded traffic accidents roughly corresponded to the development of traffic volume and increased at a 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 by the indicator 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 55 % in 2016 compared to 2000. In 2016 the Prague-wide average was 3.3 recorded accidents per million vehicle kilometres travelled.

Places and stretches with high accident rates in Prague 2016



Places and sections with the highest number of pedestrian accidents in Prague in 2016



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 long-term 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 2 198 in 2016, by 43 %, while in the same period automobile traffic in Prague has risen 34 %.

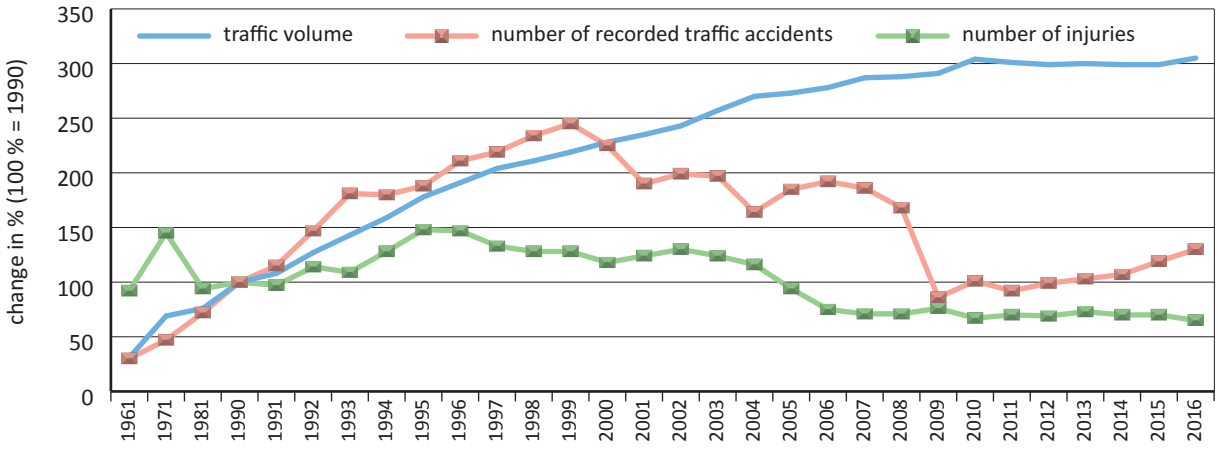
Also still positive is a comparison of the long-term trend in the number of injuries to the volume of automobile traffic. Over the past 26 years, automobile traffic in the city has risen to triple 1990 levels (by 205 %) while the number of injuries in traffic accidents has fallen 33 % (from 3 269 injuries in 1990 to 2 198 in 2016), 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 %
2015	21 462	119 %	25	27 %	179	49 %	2 078	74 %	3.1	299 %
2016	**22 876**	**129 %**	**21**	**22 %**	**194**	**53 %**	**1 983**	**71 %**	**3.3**	**305 %**

100 % = 1990 levels 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 1961–2016 (whole road network, annual total)



8.2 Traffic education

In 2016, CZK 2.55 million was drawn for traffic education. This was primarily support for child traffic playgrounds (CTPs). A number of traffic education programmes were provided with the goal of helping increase the effectiveness of traffic education at schools. A central aspect was education at 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.

In 2016, 11 CTPs where children were taught year-round were in operation in Prague (the CTP in Prague 7 was not running due to renovations). Due to the increase in school-age children, some playgrounds are running up against the boundaries of their capacity. In the past year, 68 447 primary school students went through organised training at Prague CTPs.

A programme for beginning cyclists – the Young Cyclist Traffic Competition – 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 CTPs), 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). In 2016, 145 schools took part in the first round of a total of 194. The winning teams progressed through district and city rounds to the national round, which took place in the Central Bohemian Region in Nymburk, all the way to the international competition, which in 2016 was organised by the Czech Republic.

Seventy-two interactive theatre performances of "The Fairytale Traffic Light" and "Aunt Berta's Bike" intended for the youngest age groups were presented at the Police Museum. In 2016, eight performances of the "Fairytale around an Intersection" took place at the Police Museum.

A total of seven traffic safety drives took place for the driving public as well in 2016, one of those being for hearing-impaired motorists. Other traffic education events for the public were focused on 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. In 2016, 1 832 persons went through this training.

8.3 Measures to increase traffic safety

In 2016, a total of CZK 49.4 million was spent under the BESIP (road traffic safety) budget, including a contribution from Prague 3, to implement measures to increase safety on the road network in Prague. These measures included minor structural modifications, modifications to traffic markings, the installation of traffic devices and preventive programmes. Important modifications are performed independently as investment projects and as part of road maintenance.

An amount of CZK 39.4 million was drawn from the City of Prague budget for capital spending on construction of structural speed humps, installing extra lighting at pedestrian crossings and other primarily structural safety measures. Of this, capital expenditures by municipal districts for BESIP represented an amount of CZK 2.1 million in 2016.

Other non-structural traffic safety measures, particularly at schools and pedestrian crossings (modifications to pedestrian crossings including carriageway surface roughening, installing assembled speed humps, adjusting signage, installing road mirrors, crash barriers and railings, information on current speed) were realised under current expenditures at a cost of CZK 10.0 million.

In 2016 the following were realised:

- Traffic islands on pedestrian crossings
- Traffic safety devices
- Pedestrian crossings
- Intersection modifications, for example at the locations Prokopova – Rokycanova (Prague 3), Arbesovo nám. – Preslova (Prague 5), Arbesovo náměstí – Elišky Peškové (Prague 5)
- Replacement of prefabricated speed humps for bituminous ones by educational institutions
- Road surface roughening
- Structural speed humps

Pedestrian island at Veltruská – Litoměřická

9 CHANGES IN TRAFFIC ORGANISATION

In 2016, the year after the Blanka Tunnel Complex (BTC) was opened, no major changes in traffic organisation on City of Prague roads took place.

Local changes in traffic organisation reacted primarily to the impact of opening the BTC, particularly in Prague 6, 7 and 8. In Prague 6 the changes in traffic organisation also stemmed from modifications to the structural organisation of several surface roads, e.g. Svatovítská and Jugoslávských partyzánů.

Fundamental modifications to the traffic regime in Prague 6 concerned primarily the area around Vítězné náměstí, in particular modifications to the public transport bus turnaround by the universities and allowing buses to drive along the tram tracks on Svatovítská.

Halfway through the year, construction work began on Korunovační in the segment Pod kaštany – Sládkova, which meant this road was completely closed for this stretch. The detour through the streets Svatovítská, Milady Horákové and Gymnasijní caused further congestion on Vítězné náměstí. In order to direct the concentrated flow of pedestrians and traffic, a provisional traffic signal was installed before the pedestrian crossing at the exit from the inner roundabout of Vítězné náměstí to Svatovítská.

In order to mitigate traffic jams on Nová Povltavská when exiting the Bubeneč tunnel when turning onto the return ramp to V Holešovičkách, the street markings were modified on V Holešovičkách to ensure a greater length of the separate merge lane.

Shuttle signaling for bus transport in Vysočanská street

Over the course of 2016, short-term changes to traffic organisation continued, including on important roads. Contributing the most to reduction of traffic flow were traffic measures on the Štěrboholská spojka, Spořilovská and Lipská during road repairs, on the Jižní spojka during repairs to the bridge expansion and on Nuselský most, where the number of lanes was reduced.

On the eastern part of the Prague Outer Ring Road, during construction work designed to increase its capacity, lanes were restricted and the exit ramp from the “Počernice” interchange towards the D 11 motorway was partially closed.

In July 2016, a burst water pipe on Vysočanská ulice (at the “Vysočany scaffold bridge”) required a complete closure in the section Ke Klíčovu – Nad Krocínkou. The detour led via Klíčov and Prosecká to Libeň.

Complete closures of important roads also took place in 2016 on the streets U plynárny in the section Michelská – Chodovská during refurbishing of the tram tracks and road, on Mánesův most during tram track repairs, during refurbishing of the road K Bohnicím and on Prachnerova.

In the second half of the year, planning documentation was drawn up at the request of municipal districts on the banning of personal transporters (Segways) in selected parts of Prague.

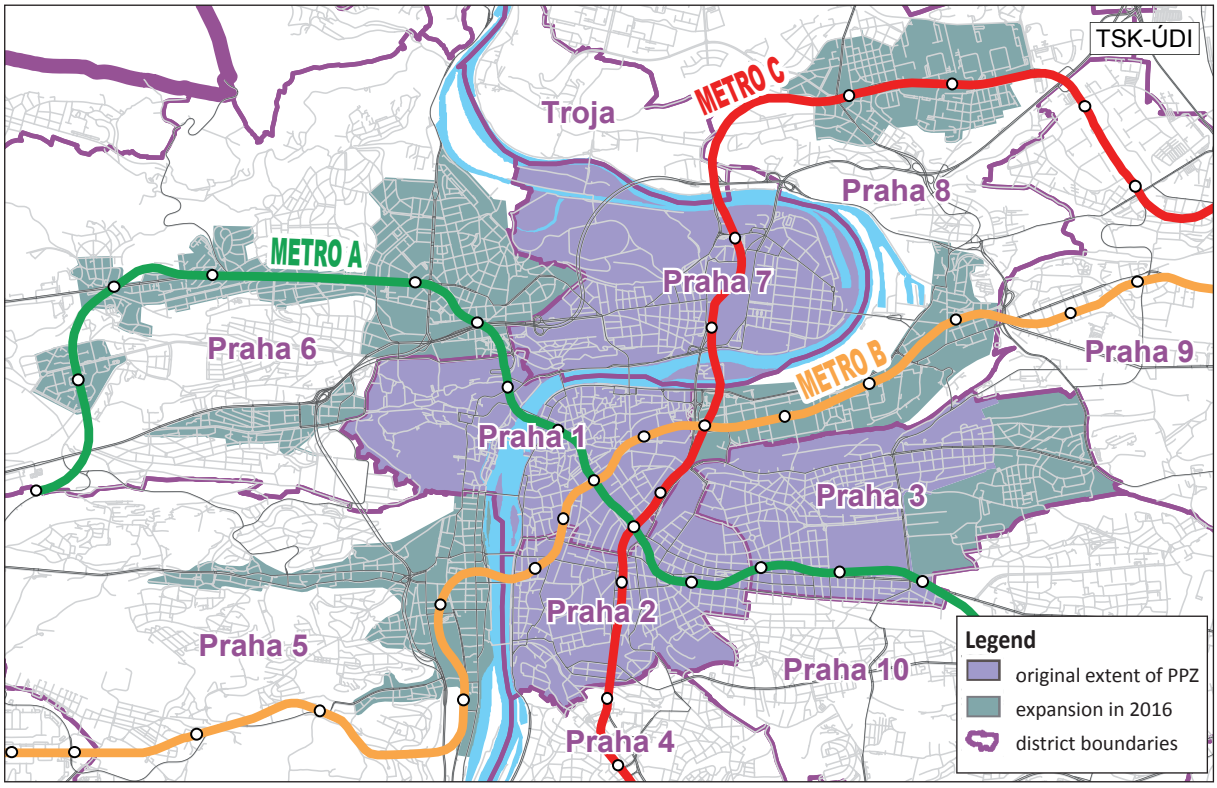
“Zone” road signs were added to traffic signage at the end of the year. The ban applies to the whole road profile, including sidewalks.

10 PARKING

10.1 Parking in areas with paid parking zones

In 2016, the area with paid parking zones (PPZ) expanded in Prague to include Prague 3 – Jarov and parts of the districts Prague 5, 6 and 8. The intention is to simplify parking for residents at the expense of visitors, to reduce automobile transport, drive people towards public transport and thus achieve traffic calming in the individual areas. Following the introduction of PPZ in the new areas, there really was a drop in vehicles on the individual streets, but the parking problem primarily shifted to streets that lay just beyond the boundaries of the PPZ. For this reason various municipal districts are planning to further expand PPZ.

Map of paid parking zones



In Prague there are now two PPZ systems. The first is the original system and is run in Prague 1, 2, 3 (including Jarov) and 7. Here the zones are divided into blue, green, orange and mixed zones. Classic parking slips are used here and residents have a parking pass stuck to their windshield. Municipal police officers check to ensure compliance.

Original 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 resident and paid parking
Time of parking	Long-term parking for holders of parking passes	Medium-term paid parking (6 hrs)	Short-term paid parking (2 hrs)	For holders of parking cards and for paid parking
Users	Residents with permanent residence and businesses w/ place of business in PPZ	Visitors to city centre	Visitors to city centre	Residents, business owners and visitors to have more uniform use of capacity
Operation	Mon-Sun 8:00-6:00	Mon-Fri (Sat, Sun) 8:00-18:00 (19:00, 20:00)	Mon-Fri (Sat, Sun) 8:00-18:00 (20:00)	Mon-Fri (Sat, Sun) 8:00-18:00 (19:00, 20:00)

In the new PPZ areas (with the exception of Prague 3 – Jarov), a second system is in place that makes greater use of modern technology. Zones are divided into blue, purple and orange. Parking permits are electronic here and refer to the licence plate of the car. This does away with the need to have a parking pass stuck to one's windshield or display a parking slip. Visitors have the option of paying either using parking machines, where they enter the licence plate number of their vehicle, or through "virtual parking meters", which means paying using a mobile application via the internet. The new parking machines allow for payment by card and are powered by a solar cell. Now visitors can also park in the resident (blue) zones, but for a maximum of 3 hours and they must pay by "virtual parking meter". Checking of compliance takes place via a monitoring system. A vehicle equipped with a monitoring device drives through and checks the validity of parking permits based on licence plate numbers and the data from the central information system. Thanks to this measure, respect for the PPZs is higher than in the original areas. As part of the implementation of PPZs, in several areas zones with reduced speed were also introduced, which allowed the number of parking spots to be increased while also calming traffic.

New types of PPZ in Prague 5, 6 and 8

	Blue zone	Purple zone	Orange zone
Type of parking	Preferentially resident and subscriber parking	Combination of resident and paid parking	Paid parking
Time of parking	Long-term parking for holders of parking permits; for visitors short-term paid parking (3 hrs)	Long-term parking for holders of parking permits; for visitors long-term paid parking (24 hrs)	Short-term paid parking (2 hrs)
Users	Residents with permanent residence and businesses w/ place of business in PPZ; visitors after paying via virtual parking meter	Residents, business owners and visitors to have more uniform use of capacity	Visitors to the given area
Operation*	Mon-Fri 8:00-20:00	Mon-Fri 8:00-20:00	Mon-Fri 8:00-20:00

** This is the basic time of operation. Individual municipal districts may adjust this time.*

Further parking spots are located in public garages (8 880 spots in the centre and its surroundings), private garages (in the centre approximately 4 700 spots) or in courtyards (in the centre approximately 3 000).

Vehicle for checking parking permits

Purple zone signage on Karlínské náměstí

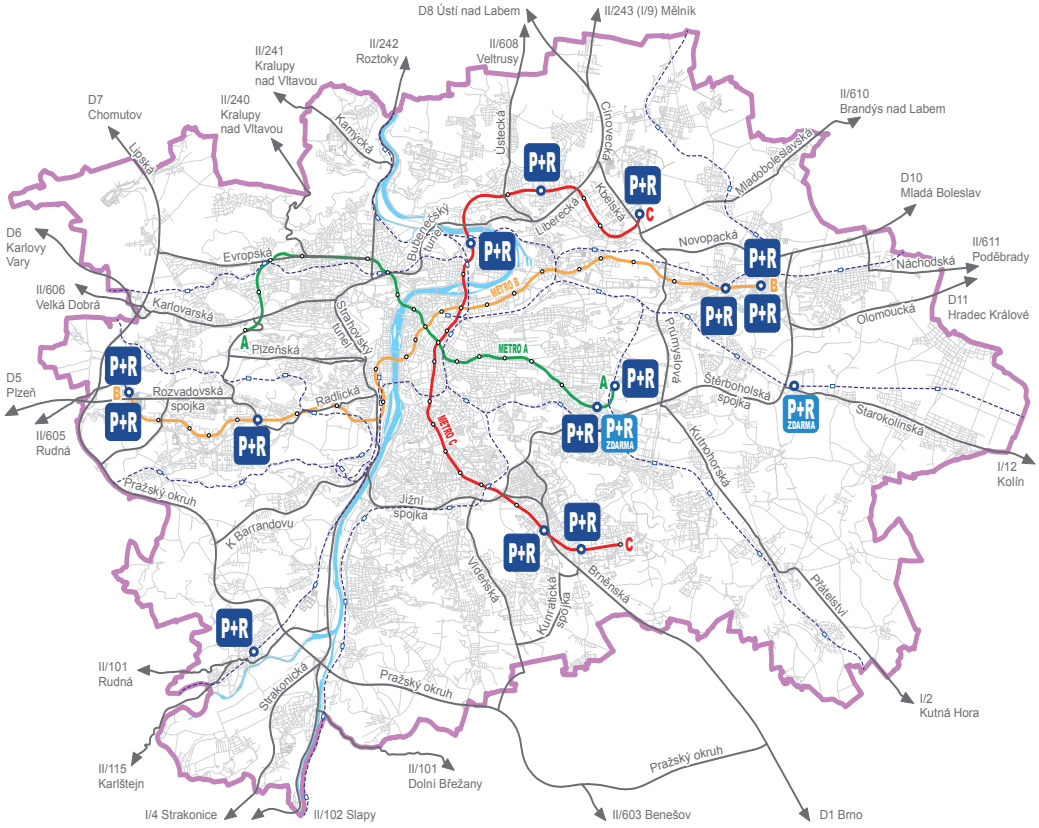
10.2 Parking in the rest of the city

The capacity of parking spaces in the rest of the city is for the most part not recorded. Particularly in areas with multi-storey buildings there is a deficit of parking spots. Around metro stations the lack of parking spots is exacerbated by the fact that local and out-of-town motorists commuting to the metro use them all up. This fact is felt most strongly in the north-west part of Prague, where there is a lack of Park and Ride facilities. The brunt of parked vehicles is faced by the areas that border on PPZs, because vehicles that used to park on the streets where there are now PPZs have started to park there. The various municipal districts are attempting to arrange for studies and projects on the parking situation or update existing documents and to increase the number of parking spaces through traffic organisation measures, e.g. by making streets one-way, by reducing the number of lanes on less heavily trafficked

streets, by changing parallel parking to perpendicular or diagonal parking, or by allowing partial parking on the sidewalk. Other parking spaces are created with the construction of new residential buildings that differentiate between resident parking (often in underground garages) and visitor parking (generally on the street in front of the building). The parking situation is better in areas with low-rise development, where residents can often park on their own lot or in a garage.

10.3 Park and Ride facilities (P+R)

The combination of automobile and public transport holds many advantages for both travellers and the city itself. For travellers, transport outside the city remains as flexible as possible, while inside the city transport by mass transit is quicker and often less complicated as well. The city on the other hand benefits from the improved modal share and the reduced demand for travelling through the heavily settled area of the city.



What this means for the city however is an increased demand for parking around public transport stations. This is one of the reasons it is important to systematically expand and maintain the network of P+R parking spaces and K+R recommended stopping points.

Basic data on the P+R system in Prague

Number of lots in P+R system	Total structural capacity	Number of spots per 1 million residents
16 (13 locations)	3 009 spots	2 350
Permitted vehicles	**Operating hours**	**Daily parking fee**
passenger automobiles, bicycles	4:00-1:00 (24 hrs at unguarded lots)	CZK 20 (free at unguarded lots)

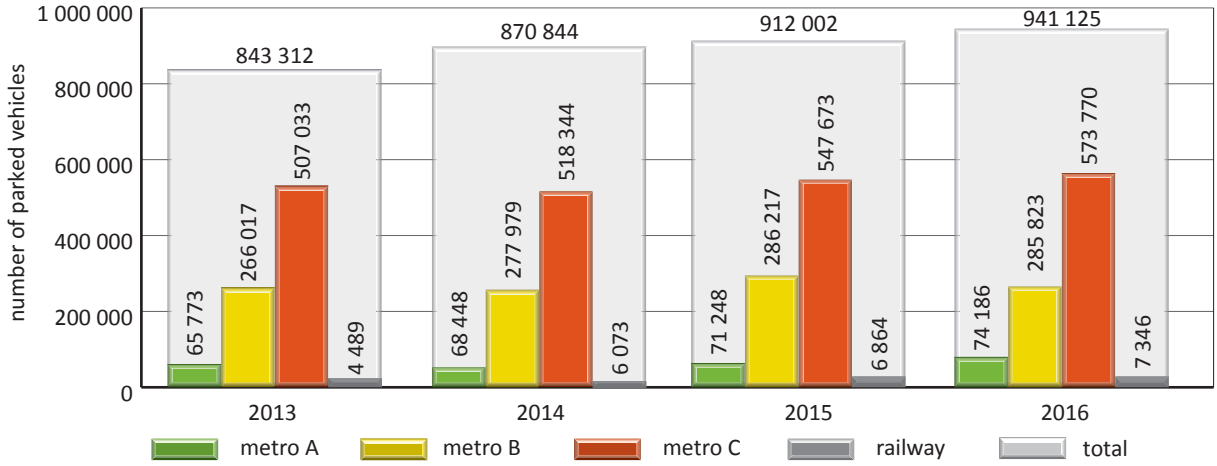
The system of P+R lots in Prague has been in operation since 1997. These catchment lots are conceived of as public and are intended for the parking of passenger vehicles. There are 14 paid P+R lots (with regulated operating hours) available under the system and two free lots – P+R Běchovice and P+R Skalka 2 (with a regulated maximum parking time of 12 hours). There is only a parking system and lot staff at the paid P+R lots; usage of the free P+R lots is not tracked.

Starting in 2013 the parking technology at P+R lots run by TSK gradually began being replaced. With the exception of P+R Skalka 1 and P+R Chodov (TSK does not own the equipment here), this update has been completed. At the same time, in 2016 complete repairs and replacement of the entry system took place at the lots run by DPP.

For the paid P+R lots the daily fee is CZK 20. Each violation of the terms and conditions for guarded lots (e.g. leaving a transportation device at the lot outside the operating hours) leads to a CZK 100 fee. With the selection of a new operator at the lots run by DPP, an additional possibility of online payment of parking fees (MPLA.cz) via registered payment card numbers (Visa, MasterCard) or CCS fuel cards was introduced at P+R Depo Hostivař, P+R Ládví and P+R Letňany.

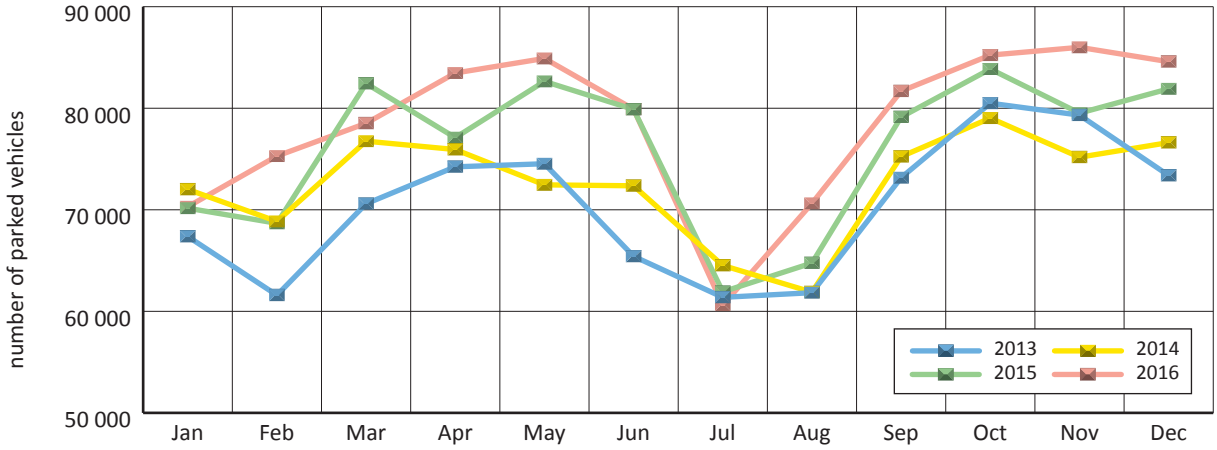
The total structural capacity of the P+R system is broken down according to use between spots for the basic function of the P+R system (2 767 spots), spots permanently reserved for vehicles transporting a person with a serious handicap – marked in accordance with the Act on Land Roads (130 spots) and spots for other purposes or residents with a valid contract on long-term parking of a vehicle (112 spots).

Annual variation in use of the P+R system



The aggregate level of use of P+R lots reached a new maximum in 2016, exceeding the highest values for use of the P+R system to date, which were reached in 2010 (933 254 vehicles). The year-on-year growth stems primarily from increased use of P+R lots on the C line and at P+R Depo Hostivař.

Monthly variation in use of the P+R system



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

A bicycle can be left at a P+R lot during the operating hours for free. The B+R service is not available at the double lots P+R Černý Most 2, P+R Zličín 2, the P+R Chodov garages and the free P+R Skalka 2 and P+R Běchovice lots. All other P+R facilities are equipped with a stand for at least 4 bicycles.

Parking spots reserved for residents at P+R lots

On the basis of a contract with TSK, a set capacity can be reserved at selected parking lots for resident vehicles. In this way temporary excess capacity can be made use of. Conclusion of a contract is conditional on the interested party having a place of residence or business in close proximity to the parking lot ("resident").

Long-term parking (24 hours a day, 7 days a week) was possible at P+R Opatov, P+R Skalka 1 and P+R Radotín for a monthly fee of CZK 500 for natural persons or CZK 800 for legal entities. Night-time and weekend parking (workdays 17:30-7:30, weekends and holidays all-day) was possible at P+R Rajská zahrada for a monthly fee of CZK 250. The designated part of the lot thus had a secondary use for times of reduced demand for the basic P+R function while also not restricting the catchment potential of the P+R lot.

The capacity reserved for residents at selected P+R lots was full for the whole year.

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

Year	Operating income	Operating costs	Economic balance
2013	15 057	31 086	- 16 029
2014	15 301	29 461	- 14 160
2015	15 950	29 025	- 13 075
2016	**16 284**	**24 630**	**- 8 346**

Source: TSK and Prague Public Transport Company

Marked improvement of the operating balance of the P+R system in 2016 was primarily due to the selection of a new operator of the P+R lots managed by DPP. A further reduction in operating costs was achieved by replacing old technology and a lesser need for repairs.

Survey on nature of trips using P+R lots

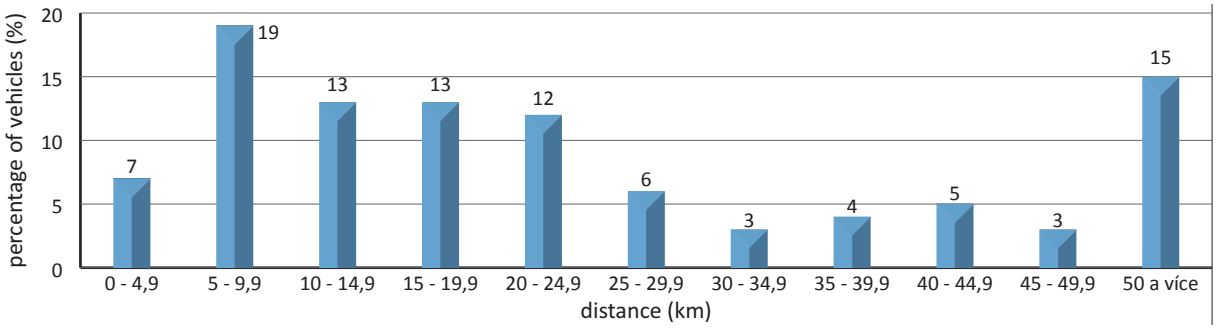
At the turnover of November and December 2016, a questionnaire survey was conducted at the paid P+R lots on the nature of the trips made using P+R lots. The survey managed to obtain information from 1 378 respondents (i.e. 40 % of the incoming vehicles on the day of the survey).

Selected results from questionnaire survey

Point of departure – Prague (19 %)	Point of departure – Central Bohemia (70 %)	Point of departure – other (11 %)
most at P+R Skalka 1 (73 %) and P+R Depo Hostivař (51 %)	most at P+R Nové Butovice (95 %) and by Zličín (85 %)	most at P+R Ládví (21 %) and by Černý most (19 %)
Commute by car to P+R	**Shortest commute (average for P+R)**	**Longest commute (average for P+R)**
on average 30.7 km (39 % less than 15 km)	P+R Radotín (7.4 km), P+R Skalka 1 (17 km)	P+R Černý Most 1 (43.2 km), P+R Černý Most 2 (47.6 km)
Average vehicle occupancy	**Lowest occupancy (average for P+R)**	**Highest occupancy (average for P+R)**
1.33 persons per vehicle	P+R Radotín (1.10), P+R Chodov (1.25)	P+R Rajská zahrada (1.62), P+R Černý Most 1 (1.45) and P+R Holešovice (1.45)
Regularity of use of P+R	**Most frequent purpose of trip using P+R**	**Type of ticket used for public transport**
at least once a week (75 %), almost every workday (45 %)	trip to workplace, work meeting or other work-related trip (73 %)	pre-paid pass (62 %), single ticket (28 %)
Most frequent reasons for using car for part of trip	**Other selected reasons for using car for part of trip**	**Most frequent reasons for not using car for whole trip**
speed (43 %), comfort (25 %), poor public transport frequency/ interval/connection (17 %)	picking up/dropping off kids or other persons, shopping/loading/picking up things, multiple trips by car, health problems	problems parking at destination (49 %), complications and congestion (31 %), don't like driving around Prague (8 %)

Among the most frequent points of departure for the respondents commuting to P+R lots from outside of Prague were Brandýs nad Labem-Stará Boleslav (60), Mladá Boleslav (37), Jesenice (36), Beroun and Říčany (30), Mělník (28), Neratovice (27), Poděbrady (23), Kostelec nad Labem (20). Within Prague the most frequent sources were the municipal districts Prague 22 and Prague-Čakovice (23), Prague-Vinoř (21), Prague 14, Prague 19 and Prague-Štěrboholy (18-16), Prague 15 and Prague 20 (12).

Distance between point of departure and P+R lot



The majority of respondents can continue to their destination from P+R without needing to transfer to another line (59 %), while a lesser number will then transfer to another metro line (25 %) or tram or bus (7 %). Around 7 % of respondents have their destination within walking distance of the P+R lot. Use of P+R for local parking is most common at P+R Chodov (25 % of respondents) and P+R Holešovice (12 % of respondents).

The average greatest distance between the P+R lot and connecting public transport that respondents are willing to accept is around 300 metres.

10.4 Kiss and Ride points (K+R)

IP13e

Last year, Decree No. 294/2015 Coll. came into effect, implementing rules for road traffic. This decree redefines the use of K+R stopping points, including those not connecting to means of mass public transport, for example by schools or public offices. K+R "Kiss and Ride" points allow for short-term stopping of vehicles (max. 3 minutes) in order for passengers to exit or enter vehicles in order to transfer to public transport.

K+R stopping points within the City of Prague are marked 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.".

Currently there are 30 lots of this type available by public transport stops and stations within the capital with a total capacity of 98 spots.

K+R Florenc

Invalid IP 13e sign by Želivského metro station

Over the course of 2016, one new K+R location was added on Sokolovská heading into the centre by the B/C metro transfer station Florenc. The K+R stopping point on Roztylská by the C metro station Chodov continues to be out of service due to the shifting of the Chodov bus stop in connection with the shopping centre extension. On Vinohradská ulice by the A metro station Želivského heading into the centre, the traffic sign for a K+R stopping point became invalid.

11 TRANSPORTATION INFRASTRUCTURE AND ROAD MAINTENANCE

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 Departments of Strategic Investment and Technical Facilities (OSI and OTV), the Technical Administration of Roads (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 (through the Road and Motorway Directorate – RMD) and also help finance city roads that make up for the as yet unbuilt sections of these state-guaranteed structures.

The most important transport works in 2016 included the following:

Korunovační, Pod kaštany – refurbishing of bridge and carriageway [TSK]

The aim of work on parts of the streets Pod kaštany and Korunovační was to reduce the noise levels on the relevant section of road, which was achieved by replacing paving stones with an asphalt surface. This significantly reduced the noise burden in the surrounding area, which consists not only of residential development, but also a large number of foreign embassies. Another aspect was adjusting the road drainage and repairing the adjacent sidewalks, where asphalt surfaces were replaced with the typical Prague mosaic pattern. The construction included only structural modifications to the road in the existing parameters.

During the closure, the bridge over the single-track railway line no. 120, the “Buštěhrad Railway”, was also rebuilt. Due to the insufficient load capacity of the bridge and disastrous state of the lower structure, complete repairs were necessary, meaning taking down the existing bridge construction, demolishing the lower structure and building a new bridge so that in the future it would be possible to realise a two-track line Prague – Airport – Kladno. The bridge is now made up of a single array of 22 m, the support structure of which consists of ten prestressed prefabricated beams coupled with a reinforced concrete slab. The load-bearing structure is connected with the lower structure using joints with an insulating coating, thus the bridge structure is braced. The carriageway was designed for the required category MS 12.5. The width is 2 x 3.75 + 4.00 m and the bidirectional sidewalk ledges were equipped with railings. The carriageway on the bridge has a cambered cross slope of 2.5 %. Detours on the line were only required during demolition of the old structure, while the laying of new beams was conducted in the breaks between passing trains. The work was highly demanding in terms of coordination, as a number of administrators of subterranean networks operate in the area (TSK, gas company Pražská plynárenská, water company Pražská vodohospodářská společnost, heat company Pražská teplárenská). Complications during earthwork were caused by the sewer that runs under the bridge and tracks.

Construction pit for bridge with bracing

Bridge on Korunovační after refurbishing

Construction of return ramp Vyskočilova – 5. května [TSK]

The new on-ramp makes it possible to turn from the eastern branch of Vyskočilova onto the street 5. května and on towards the D1 motorway. For drivers approaching from Michle, the Brumlovka

administrative complex and the surroundings, this provides the option of directly accessing the arterial road heading out of the city. It is thus no longer necessary to take a complicated detour around Michle and burden the adjacent streets with unnecessary traffic.

The ramp was designed as single-lane with a length of 70 m with a turn lane of 30 m on Vyskočilova. Lighting was installed on the ramp, while drainage is provided for through a ditch ending with an intake and a connection to the existing sewer drain. Realisation of the ramp required modifications to the existing DN 500 water main, fibre optic route, 22 kV cables and existing lighting.

Start of turn ramp

Railway station Praha-Braník

Revitalisation of railway track no. 210 Prague – Vrané nad Vltavou – Čerčany [SŽDC]

The primary benefits are increased track speed (elimination of need to reduce speed), improved travel comfort and ensuring higher safety. In selected segments the work included treatment of track superstructure, replacement of track grid, reprofiling of drainage ditches, remediation of track bed, remediation of selected culverts in segments with treated superstructure and replacement of inappropriate railway crossing structures. Renovation of the signalling and safety facilities was also conducted, with outdated equipment replaced with new technology allowing for remote management. At the railway stations Praha-Braník, Vrané nad Vltavou, Davle, Jílové u Prahy, Týnec nad Sázavou and the stop Luka pod Medníkem there are new boarding platforms with grade-level access with an edge height of 550 mm above the rail level for barrier-free boarding. The configuration of the yards was also changed, switches were replaced with new ones with electric heating and an information and orientation system for passengers was installed.

Repairs to Prague Outer Ring Road in the segment Satalice – Běchovice (SOKP work 510) [ŘSD]

These works were implemented in multiple stages with gradual rerouting of traffic so that two lanes in each direction were always in service. In order to maintain this situation in all stages, it was necessary to expand the road into the median. This modification also allowed for expanding the road to 3 + 3 lanes in the future. As part of comprehensive road surface maintenance, the existing asphalt layers were milled off and new asphalt layers of a total thickness of 12 cm were laid, with a wearing layer of 3 cm being of silent asphalt. The signage and road markings were also replaced and crash barriers were replaced or added. Among the further important works were repairs to the drainage. Necessary maintenance to part of the existing gutters and connections was conducted by lining them. Intakes and manholes on the carriageway were also modified. New portals for large-scale traffic signalling with bottom illumination were installed. Remediation was conducted on bridges along with repairs to moulding and replacement and maintenance of expansion joints.

Repairs to Spořilovská [TSK]

The aim was to improve the technical parameters of the road and reduce the negative impact on the living conditions of people living in the immediate surroundings, as this street has also served transit traffic since the south-eastern part of the Prague Outer Ring Road was opened. Due to routing of heavy freight traffic towards the City Ring Road, the wearing and bed layers were modified on the existing partitioned road with 2 + 2 lanes and the surface of the whole carriageway was unified. After removing

the old noise burden, new sound-absorbing layers were created. In order to prevent overloading (transit of overloaded heavy freight vehicles), as part of the modernisation devices for high-speed weighing of vehicles were installed. As part of the structural modifications to this section of the road, the bridge over Türkova was also refurbished with all carriageway layers replaced with new tank insulation. The restraint system was also replaced, as were the metal expansion joints, the reinforced concrete mouldings were remediated and the drainage channels were repaired.

Overview of most important road refurbishments and repairs in 2016

Name [investor]	Description
Repair of Nuselský most **[TSK – co-financed by SFDI]**	• Works planned in stages for 2012–2016, the subject of which is rehabilitating the lower structure of Nuselský most (soffit of load-bearing structure, abutments and pillars), installing new carriageway insulation and new road surface strata, replacing the sidewalk structure and replacing drainage, including vertical drains. • In 2016, refurbishing of the right lane heading into the centre was completed and sidewalk panels were laid, as was insulation on the sidewalk. In the right lane heading out of the centre, work took place on the bridge deck (replacement of carriageway structure, levelling of deck), on the sidewalk rehabilitation and replacement of sidewalk panels. A diagnostic survey of the prestressing tendons also took place.
Modifications to Klikatá **[TSK]**	• As part of the new construction of local road U Trezorky connecting the streets Klikatá and Radlická, a new roundabout was established, 2 bay stops built, sidewalks modified, noise barriers built, storm sewers added, public lighting modified including new lighting added, and the retaining wall between Radlická and Na Hutmance was modified. • At the same time, the existing intersection Peroutkova – Klikatá was redone as a roundabout. As part of construction, the technical infrastructure (sewers, water lines, retention tanks, public lighting, fibre optic cables) was also worked on, the stops on Peroutkova were refurbished and landscaping was done around the roundabout.
Ongoing maintenance of Lipská **[TSK]**	• In 2016, Phase 1 of ongoing maintenance in the section from the Prague Outer Ring Road to the boundaries of Prague took place. • 120 mm of milling was performed with subsequent asphalt replacement ACL 22S of a thickness of 80 mm and SMA 11S of 40 mm. • Also performed was crack repair, levelling of edges and surface features and renewal of road markings.
Jižní spojka – repair of slow lane cover **[TSK – co-financed by SFDI]**	• Replacement of existing road cover in the slow right land continued, including merge and turn lanes in 4 segments heading into the centre. • As part of the project, 40 mm of the wearing layer was milled off, cracks were repaired and a new layer was laid and road markings renewed. • The length repaired in 2016 reached around 3 km.
Refurbishing of road Do panenek **[TSK]**	• The project included expansion and improvement of the directional parameters in a dangerous segment of 300 m, where it was proposed to expand the radius of the curve for the safe passing of buses. • Expansion of the road to the harmonised basic category S7.5/50 was proposed for a length of 790 m. Expansion is always one-sided. In the next section up to Koloděje, the expansion is designed in the form of passing shoulders every roughly 200 m. Three passing shoulders were set up of lengths 51, 44 and 43 m, solely on the land of the existing road. At the points of widening and passing shoulders the existing road cover was harmonised. • Implementation of the project was necessary due to the use of this road as a detour during the planned closure of Českobrodská caused by the construction for rerouting of the I/12, which has very heavy traffic between Prague and Český Brod. The rerouting will be part of realisation of Work 511 of the Prague Outer Ring Road.
Removal of the bridge on Na zlatě **[TSK]**	• As part of repairs to the pedestrian boulevard by the Nové Butovice metro station, the bridge on the little-used local roadway that served primarily as an unofficial parking area was demolished. • Removal of the bridge significantly improved the space of the revitalised pedestrian zone and also led to savings, as the bridge was in a disastrous state and it would have been necessary to completely rebuild it with estimated investment costs of CZK 30 million. Costs for management and maintenance of the bridge will also be saved.
Repairs to Štěpánská **[TSK]**	• Repairs took place in the section Žitná – Wenceslas Square. The organisation of the street was changed with an attempt to retain as many existing parking spots as possible. The road surface is bituminous, parking spots and sidewalks are now paved. • Parking is predominantly diagonal with partial parking on the sidewalk. The part of the sidewalk intended for parking is differentiated by its material. • New long lateral thresholds were built with integrated spots for crossing and crosswalks. Extended kerbs and corners were built to shorten the crossing distance (particularly by the highly trafficked crossing at Wenceslas Square).

Bridge over Pitkovický potok in Benice [TSK]	• This involved repairs to the bridge and adjacent roads. In the given section 120 mm of carriageway was milled off and replaced with asphalt. • Bridge repairs involved removing the carriageway, mouldings, insulation and levelling concrete. New cambered levelling was laid on the clean surface, followed by new insulation. Then new reinforced concrete mouldings were added including protectors for utilities. The bridge soffit was cleaned and remediated. The affected utility infrastructure was relocated during the repairs.
Refurbishing of Wilsonova [TSK]	• The underpasses were repaired. The subject of repairs was the sealing of the expansion joints in the load-bearing structure, remediation of the upper surface and subsequent re-insulation. • From the exit of the Main Train Station parking lot to Wenceslas Square, 100 mm was milled off and replaced with 40 mm of ACO11S and 60 mm of ACL 165. Cracks were repaired, kerbs and surface features levelled and road markings renewed.
Refurbishing of Most Závodu míru [TSK]	• Refurbishing of Most Závodu míru continued in 2016. Following the previous phase, when the road surface was refurbished and expansion joints repaired, now the road surface was replaced on the adjoining intersections on both banks as well. • This was ongoing maintenance of the road with milling off of 50 mm and subsequent replacement with 50 mm of bituminous LA.

Pedestrian boulevard with support of removed Na zlatě bridge

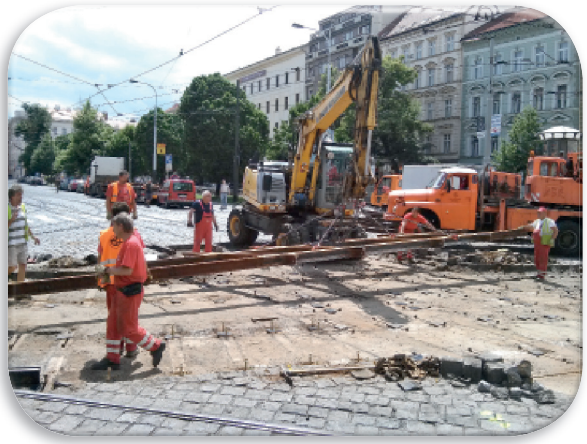
Štěpánská following refurbishment

As part of ongoing maintenance, the following repairs took place in 2016:

In the Mrázovka tunnel the skid-resistance properties of the road were restored with Peel-Jet technology. On the subsequent sections of the road (between the Strahov and Mrázovka tunnels heading towards Mrázovka, on the on-ramp from Mozartova and the off-ramp toward Plzeňská), maintenance was performed with replacement of the wearing layer. Milling took place on the streets Doupovská (including repairs to 7 bus stops), Československého exilu (Phase 4, milling based on 3D navigation model, stops repaired), Vinohradská (section Pod Židovskými hřbitovy – Jana Želivského heading towards centre), Plzeňská (section Pod Kotlářkou – Zahradníčkova), Bucharova (section Plzeňská – Rozvadovská spojka), Kukulova (section Plzeňská – Šafránecká), Pod strání (section V Rybníčkách – Dubečská), Hornocholupická and others.

Ongoing maintenance on Kukulova

New bridge over the Botič on Nuselská



Refurbishing of tram tracks on Ječná and Jugoslávská

Laying of grass on Sokolovská

TSK is constantly implementing measures to reduce the noise burden, particularly by replacing inappropriate road surfaces and building various types of noise barriers, especially in residential areas. For this reason, in 2016 Phase 3 of refurbishing Bělehradská took place in the section Pod Karlovem – Otakarova, where cobble paving was replaced with bituminous surface. The road K Barrandovu was also refurbished, with low-noise asphalt being laid in the segment Štěpařská – Lamačova heading into the centre. As part of the work, cracks were repaired, kerbs levelled, the concrete drainage gutter cleaned and levelled and the street inlets cleaned and modified.

Refurbishing of Roentgenova

TSK projects in 2016 also included road refurbishing and repairs. Work continued on the disastrous state of the carriageway on the Štěrboholská spojka caused by ground water in the substratum. For this reason, the whole structure was redone, with deep drainage and remediation of the subsoil. As part of the work the concrete edging in the median was replaced with stone. At the Průběžná tram stop, the boarding islands were refurbished, including minor architectural elements being added. The project was coordinated with modifications to traffic signals at the intersections V olšinách – Pod Rapidem and V olšinách – Průběžná. On the street Karoliny Světlé, the section Národní – Krocínova was refurbished as part of cleaning up the after-effects of the 2002 floods, where after the carriageway structure had been disassembled, remediation of the substratum was conducted and the connections for the street intakes were repaired. On Belgická, sidewalks were widened at the expense of the carriageway in order to increase pedestrian safety by the school and the whole intersection with Uruguayská was raised, including installation of corner barriers. Refurbishing of the lower structure of the G ramp for Barrandovský most took place. As part of the works, modification and remediation of the surfaces of the concrete load-bearing structure, supports and wings took place. The intersection Prokopova x Rokycanova was modified from head-on to being staggered. The surface is bituminous, the sidewalks and merging lanes cobblestone. As part of Prague 6's Pavement Programme, complete repairs were conducted on Muchova, Kanadská and Loutkařská, including resurfacing of the carriageway, parking spots and sidewalks. On Šafránecká and Roentgenova, carriageway and sidewalk repairs were made.

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 road 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 2016, CZK 1.454 billion was spent on repairs and maintenance, CZK 723 million on cleaning and green space and CZK 568 million on winter street maintenance (not including road sand and salt). Capital expenditures totalled CZK 1.452 billion, of that over CZK 227 million being a contribution from SFDI and over CZK 54 million from the municipal districts.

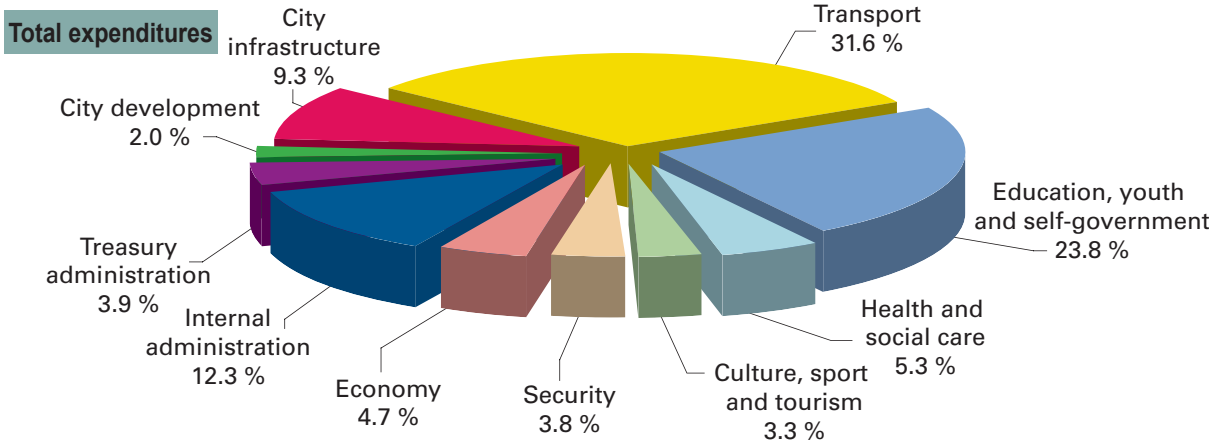
12 FINANCING THE OPERATION AND DEVELOPMENT OF MOBILITY

The operation of urban transport and the realisation of transportation infrastructure in 2016 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.

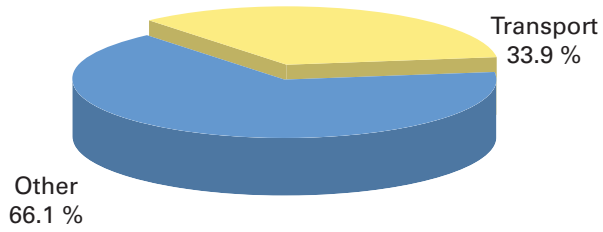
The City of Prague municipal budget, updated 30 June 2016, reached CZK 74.5 billion in expenditures, of which the expenditures under Chapter 03 Transport totalled CZK 23.5 billion. Chapter 03 was thus once again the most substantial heading of the municipal budget in terms of expenditures in 2016 (almost 32 %).

Transport accounted for almost 34 % of the City of Prague's current expenditures and nearly 26 % of capital expenditures.

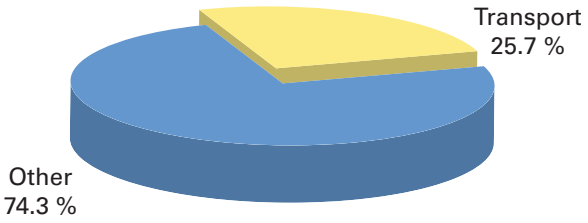
Breakdown of municipal budget expenditures in 2016 (budget updated as of 30 June 2016)



Share of transport in current expenditures

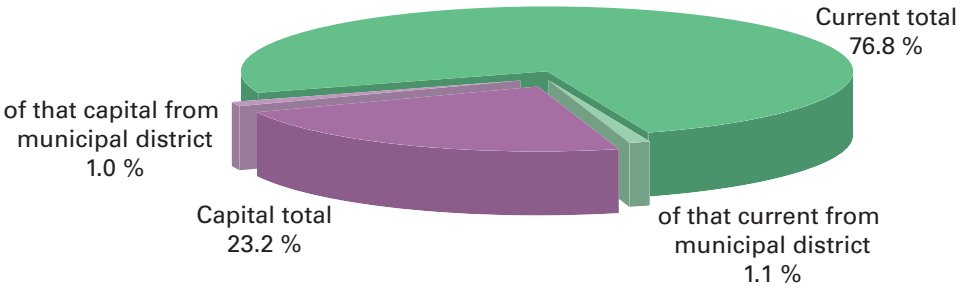


Share of transport in capital expenditures



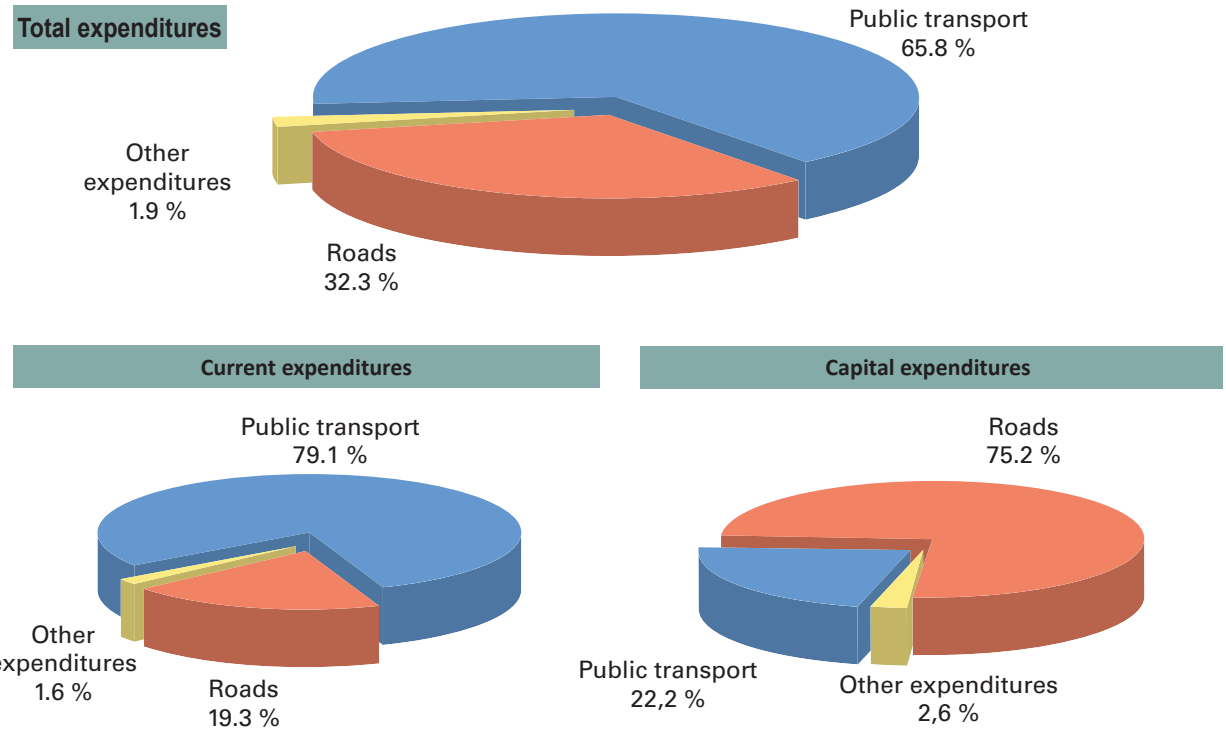
Of the total amount planned for transport in the adjusted budget (CZK 23.5 billion), CZK 18 billion was earmarked for current expenditures and CZK 5.5 billion for capital spending.

Proportion of current and capital expenditures in Chapter 03 Transport (budget updated 30 June 2016)



Ever year, expenditures associated with passenger public transport form the decisive bulk of current expenditures. CZK 14.2 billion was set aside for this purpose in the adjusted budget. CZK 3.5 billion was earmarked for administration, maintenance and operation of roads and CZK 0.3 billion went to cover various other necessary expenditures.

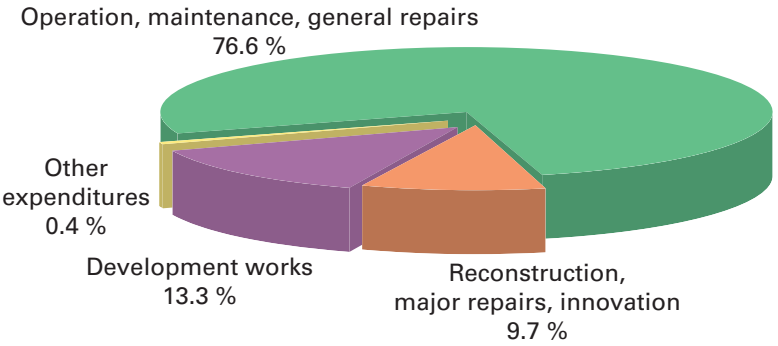
Structure of municipal budget transport expenditures in 2016 (budget updated 30 June 2016)



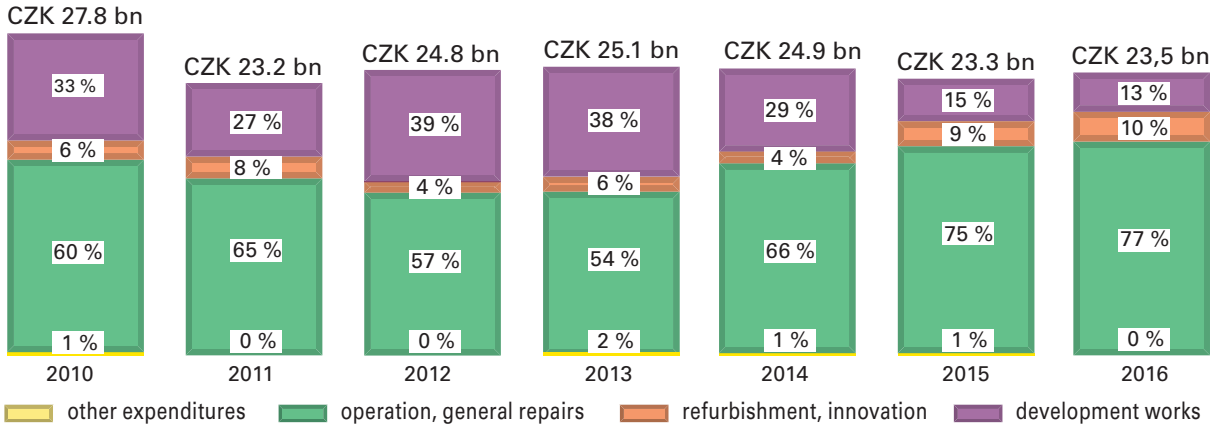
The capital expenditures were earmarked primarily for development investments (57 %), as well as more extensive repairs and refurbishment (42 %). Expenditures allocated for improving the road network and conditions and conditions for road traffic dominated. Of the total amount of CZK 5.5 billion, CZK 1.2 billion went to renewal and development of public transport and CZK 4.1 billion to investment in the road network. As regards the relatively low level of funding allocated for investment in the passenger public transport system, it is necessary to point out that further investments in this system were covered from other sources.

Of the total transport expenditures in the adjusted 2016 budget under Chapter 03, the amount set aside for ensuring the operation, renewal and development of public passenger transport was 66 % and the amount for ensuring road transport and development of the road network was 32 %. A more detailed breakdown of the items in the expenditures on transport shows that CZK 18 billion went to providing for operation, general repairs and maintenance of the city's transportation system, CZK 2.3 billion went to major repairs, refurbishing and renewal of technical facilities, CZK 3.1 billion was earmarked for development investments, and CZK 0.1 billion was for other expenditures.

Structure of municipal budget transport expenditures in 2016 (budget updated 30 June 2016)



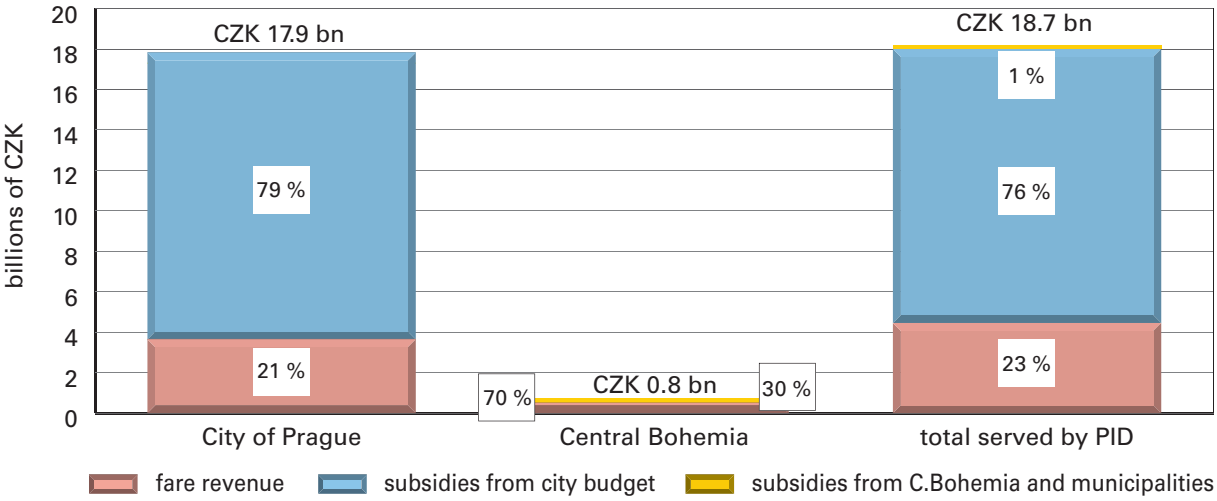
Development of structure of transport expenditures in Prague budgets (budget updated 30 June)



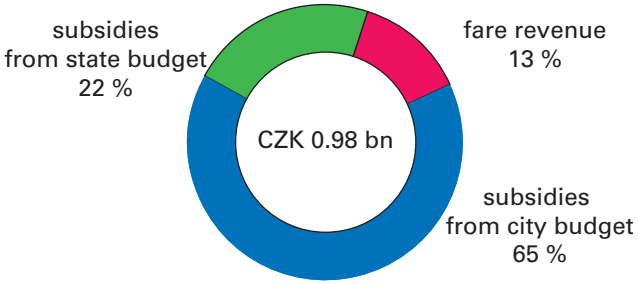
Targeted bound contributions were provided to the City of Prague from the state budget to cover certain public transport operating costs. A contribution was allotted from the budget of the State Fund for Transport Infrastructure (SFDI) for the maintenance, repair and construction of roads that are temporarily fulfilling the function of the lacking superior road network. The state also helps finance construction of the Prague Outer Ring Road, having taken on full guarantee for its funding. In 2016 a total of CZK 102 million was drawn for this purpose (incl. VAT and valorisation).˝The state budget also adds to EU funds to help finance EU operational programmes.

An important source of funding for operation of the city's public transportation system is fare revenue and other potential minor revenue. The basic relationship between the volume of revenue and subsidies in operating Prague Integrated Public Transport is evident from the following graph.

Operating subsidies and fare revenue in PID (2016, w/o railway revenue and subsidies in Prague and C. Bohemia)



Operating subsidies and fare revenue from rail carriers under PID within Prague (2016)



The Prague Public Transport Company contributed CZK 6.3 billion of its own resources to cover investment costs for the city's transportation system. CZK 5.5 billion went to renewing the public transport fleet (including the purchase of 39 new 15T trams) and CZK 0.8 billion for other investments.

13 EU PROJECTS WITH PARTICIPATION OF TSK

Operational Programme Transport (OPD) – Programming period 2007 – 2013

The City of Prague Technical Administration of Roads realised a total of five projects under the programming period 2007–2013 in the years 2007 to 2015 that were financially supported by the European Union. The contribution from the EU Cohesion Fund totalled 85 % of the total costs. The remaining 15 % was paid from the City of Prague budget as co-financing.

I. Prague Urban Road Traffic Management and Regulation System

Support area: Introducing road traffic management and regulation systems in Prague
Project number: CZ.1.01/5.2.00/07.0029
Paid out (CZK): 556.5 million

The project was divided up into six functional areas:

- Management through traffic signals
- Main Urban Traffic Control Centre
- Optical network
- Collection of traffic information
- Expanding functionality of urban radio network
- Weather sensors

II. Increasing Road Safety in Prague

Support area: Introducing road traffic management and regulation systems in Prague
Project number: CZ.1.01/5.2.00/08.0129
Paid out (CZK): 378.4 million

The project was divided up 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

III. Comprehensive Telematic Monitoring System

Support area: Introducing road traffic management and regulation systems in Prague
Project number: CZ.1.01/5.2.00/12.0276
Paid out (CZK): 53.2 million

The project contained:

- Comprehensive Telematic Monitoring System

IV. Modernisation and Supply of a Traffic Management System in Prague

Support area: Introducing road traffic management and regulation systems in Prague
Project number: CZ.1.01/5.2.00/14.0380
Paid out (CZK): 345.3 m

The project contained:

- Construction and rehabilitation of 167 traffic signals as part of a works contract for “Maintenance, repair and supply of equipment for traffic management in Prague”.

V. Intensified installation of telematic devices to increase traffic safety and flow in Prague

Support area: Introducing road traffic management and regulation systems in Prague
Project number: CZ.1.01/5.2.00/14.0418
Paid out (CZK): 608.6 m

The project is made up of five functional areas:

- Modification of intersection traffic signals to increase traffic safety
- Expanding and modifying traffic signal infrastructure and transfer of traffic data
- Modernisation of technological equipment in Těšnov tunnel
- Expanding collection of traffic information for traffic management
- Modifying the traffic signal management mode from the parent level, including adding priority for public transport

Operational programmes for the 2014–2020 programming period

The Technical Administration of Roads has taken an active approach to the process of preparing support applications with the possibility of drawing funding from operational programmes under the new 2014–2020 programming period and made use of the first declared calls for applications declared by the relevant managing authorities.

In 2016, three subsidy applications were prepared under Call No. 27 of Operational Programme Transport (in particular Objective 2.3 – Improving Traffic Management and Increasing Traffic Safety):

- Information System on Travel Times on the City Ring Road
- Guidance System for Free Parking Spaces in the Streets of Prague
- Development of Traffic-Dependent Management at Traffic Signals with Links to City Ring Road

EVROPSKÁ UNIE
Evropské strukturální a investiční fondy
Operační program Doprava

A subsidy application was also prepared for Call No. 14 of Operational Programme Prague – Growth Pole of the Czech Republic (specifically Objective 2.1 – Energy Savings in Municipal Buildings Achieved in Part Using Suitable Renewable Resources, Energy Efficient Devices and Smart Management Systems):

- Reducing the Energy Demand of the Strahov and Zlíchov tunnels

EVROPSKÁ UNIE
Evropské strukturální a investiční fondy
Operační program Praha – pól růstu ČR

In accordance with the terms specified in the subsidy calls, at the end of 2016 and start of 2017 the above subsidy applications were then submitted and registered.

The amount of potential subsidies for OP Transport projects is 85 %, for OP Prague – Growth Pole of the Czech Republic 90 % of the total project costs.

14 OTHER FORMS OF TRANSPORT

14.1 Air transport

Both passenger and freight air transport in Prague are primarily operated at Václav Havel Airport Prague located at the northwest edge of the city (public international airport with an external border). Aside from this there are several other smaller airports within the city or its close surroundings (Letňany – grass-covered public domestic airport and private international airport, Kbely – military airport, Točná – grass-covered public domestic airport, 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. The maximum capacity is 46 aircraft movements an hour. 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 (predominantly general aviation) is located in the south part. In 2016 Terminal 1 was modernised, with a new Visitor Centre established there. The overall capacity of the terminals that serve to check through passengers is 15.5 million per year. There are two terminals for freight in the north part of the airport with a total capacity of 200 000 t/year.

In 2016 a total of 374 carriers operated at Prague Airport, of those 64 carriers on regular passenger lines, 12 low-cost carriers and 6 regular freight carriers. The other carriers operated charter flights, private flights and irregular freight transport. Altogether in 2016, flights were made to 183 destinations in regular transport and 656 destinations in charter transport. Some destinations were the subject of both regular and irregular connections.

North section – apron by Terminal 1

Václav Havel Airport Prague – Airbus A-380

The greatest volume of passengers was dispatched to destinations in the United Kingdom (1.71 m), Germany (1.16 m), Italy (1.04 m), the Russian Federation (0.96 m), and France (0.96 m). The most heavily trafficked destination was the Charles de Gaulle Airport in Paris with a volume of 0.69 million passengers, followed by Moscow Sheremetyevo (0.66 m), Amsterdam (0.60 m), Frankfurt (0.52 m), and London Heathrow (0.43 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 2016, compared with 2015, the average number of passengers increased worldwide by 6.5 %. With the exception of Africa, where there was a decrease (-1.9 %), this growth can be observed in all other parts of the world – Europe 5.0 %, North America 3.9 %, the Middle East 9.4 %, Asia-Pacific 9.0 % and South America and the Caribbean 2.2 %. Freight transport grew 3.5 % on average worldwide, rising the most in the Middle East (5.8 %). In Europe the growth was 4.1 %, in North America 1.7 %, in Africa 0.6 %, Asia-Pacific 4.5 % and in South America and the Caribbean 1.5 %.

The position of Václav Havel Airport Prague compared internationally can be seen in the following table.

Number of passengers processed at selected airports (millions/year)

Airport	2000	2008	2014	2015	2016	16/15
Hartsfield-Jackson International (Atlanta)	80.2	90.0	96.2	101.5	**104.3**	103 %
Bejing Capital International Airport	21.7	55.9	86.1	89.9	**94.4**	105 %
O`Hare International (Chicago)	72.1	69.4	70.1	76.9	**78.0**	101 %
London Heathrow	64.3	66.9	73.4	75.0	**75.7**	101 %
Paris Charles de Gaulle	47.8	60.9	63.8	65.8	**65.9**	100 %
Amsterdam Schiphol	39.3	47.4	55.0	58.3	**63.6**	109 %
Frankfurt	49.0	53.5	59.6	61.0	**60.8**	100 %
Istanbul Atatürk Airport	14.7	28.6	56.9	61.3	**60.1**	98 %
Madrid Barajas	32.6	50.8	41.8	46.8	**50.4**	108 %
Roma Fiumicino	25.9	35.2	38.6	40.5	**41.7**	103 %
Copenhagen Kastrup	18.2	21.5	25.6	26.6	**29.0**	109 %
Stockholm Arlanda	18.3	18.1	22.4	23.2	**24.7**	106 %
Vienna Schwechat	11.8	19.7	22.5	22.8	**23.4**	103 %
Brussels Airport	21.5	18.5	21.9	23.5	**21.8**	93 %
Letiště Václava Havla Praha	5.8	12.6	11.1	12.0	**13.1**	109 %
Warsaw Frederic Chopin	4.3	9.5	10.6	11.2	**12.8**	114 %
Budapest Ferihegy	4.7	8.4	9.2	10.3	**11.4**	111 %
Bratislava M. R. Štefánika	0.3	2.2	1.4	1.6	**1.8**	113 %

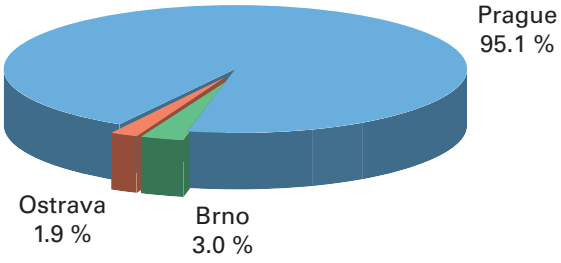
Source: airport websites

The total volume of passengers checked through in 2016 at the three most highly trafficked Czech airports (Prague, Brno, Ostrava) totalled 13.8 million, 7.8 % more than in 2015. The volume of freight transported by air (goods and post) rose by 28.7 %, totalling 79 400 tonnes.

The contribution of Prague's airport to the total volume at the three aforementioned Czech airports in passenger transport was 95.1 %, in freight transport 89.6 %.

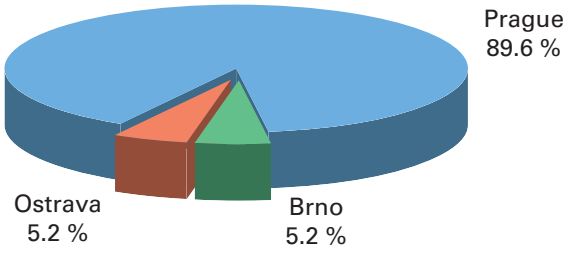
Share of airports in passenger volume

% of total volume of passengers (2016)



Share of airport in freight volume

% of total volume of goods and post (2016)



In 2016 a total of 13 074 517 passengers were checked through at the Prague Airport, which represents a rise of 8.7 % compared to 2015. The growth of "local" passengers, for whom Prague is the point of departure or destination, grew by 9.2 %, while the number of transfer and transit passengers dropped 12.2 %. Local passengers thus made up 98 % of the total number of passengers checked through.

The majority of passengers (95.3 %) were checked through on regular flights. Of the total volume of over 13 million, 67.9 % were transported on network carrier lines, while the share of low-cost companies totalled 27.4 % and the share of charter companies 4.5 %. The share of private flights was just under 0.2 %. The most passengers were checked through in July (1 454 700), the least in January (693 700). In comparison with 2015 the monthly maximum achieved in 2016 was 6 % higher. The Czech Republic was the stated place of residence of 37 % of passengers, with the second most frequent answer (9 %) being the UK, followed by Russia in third (7 %). 71 % of passengers leaving Prague were travelling privately, 29 % on business. Managers and self-employed persons made up 32 %, employees 49 % and 8 % of those flying out of Prague were students.

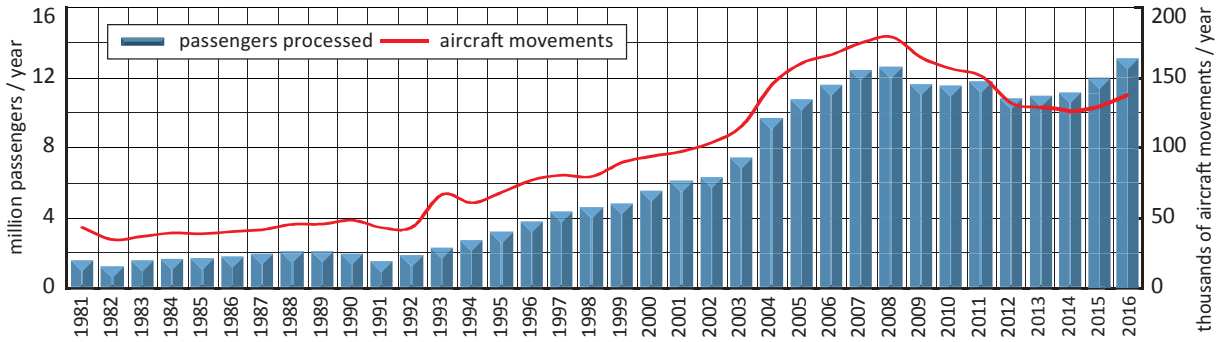
In air freight transport in 2016, a total volume of 71 090.9 t was transported. Freight transport was thus 20 495.6 t greater than in 2015 (an increase of 40.5 %). The most freight was transported in December (7 103.2 t), the least in January (4 512.2 t). The monthly maximum in 2016 was 32.8 % higher than in 2015.

The number of aircraft movements in 2016 totalled 136 766, which is 8 748 more than in 2015 (growth of 6.8 %). The greatest number of movements (13 674) was recorded in July, the lowest (8 618) in February. In comparison with 2015 the maximum monthly number of movements in 2016 was 5.6 % higher.

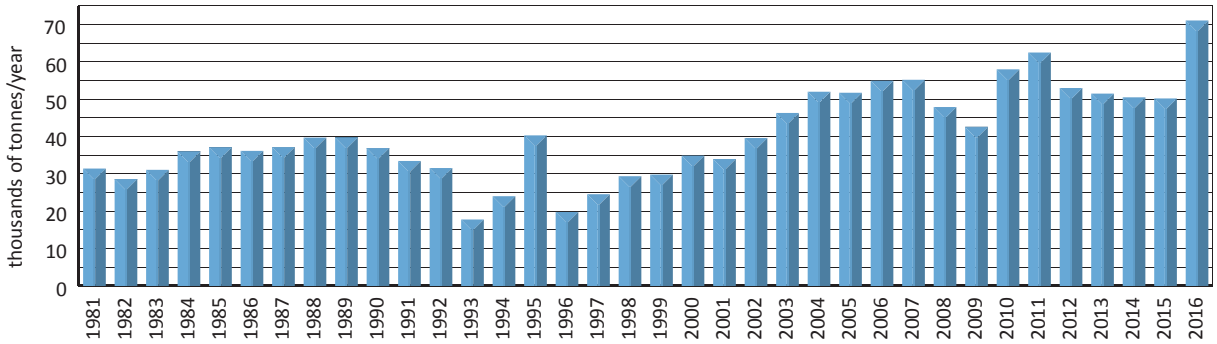
After 1991, which was the weakest year for passenger transport since 1982, the number of passengers checked through began to grow sharply, so that already in 1993 the highest values in the history of the airport (around 2.2 million/year in 1978–79) had been surpassed. At the same time the number of aircraft 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 Airport fell from 12.6 million in 2008 to nearly the level of 2006 in 2009. From 2012 to 2014 the annual number of passengers hovered with a slight growing tendency around 11 million people and in 2015 and 2016 it rose sharply.

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 main summer holiday months accounted for 25 % of the annual volume, in 2010–2016 it oscillated around 22–23 % (2016 – 22.4 %). In the long term, the number of persons per aircraft movement has increased, in 2016 reaching an annual average of 95.6 persons/movement with a July maximum of 107.4 persons/movement (1990 – 40 persons/movement annual average).

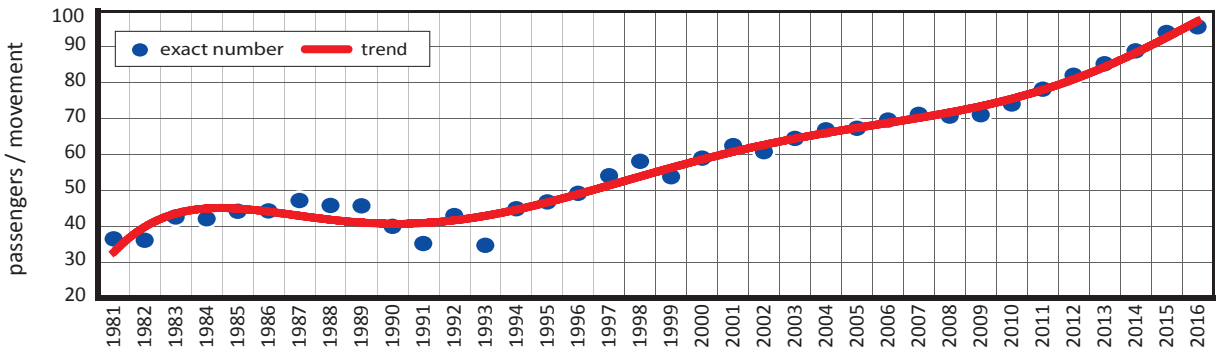
Development of volume at Prague Airport (number of passengers and aircraft movements)



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



Development of passengers / 1 movement (Prague Airport, 1981–2016)



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 for the first time. In comparison with the years 1981–90, when the average annual volume was 35 400 t/year, the average of the years 2007–2016 (54 400 t/year) was 53.8 % higher, despite the drop-off in the years 2008–9 and 2012-15.

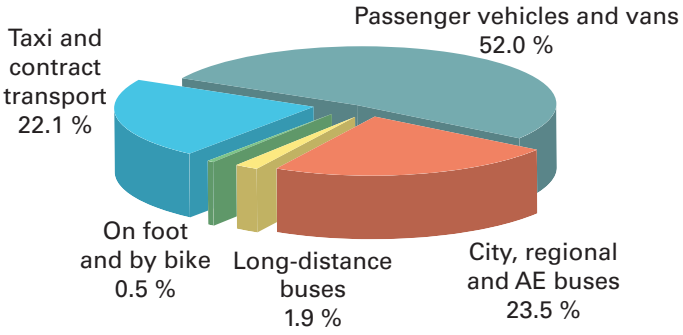
North section – Terminal 1

North section – Terminal 2 departure hall

The airport is located approximately 11 km from the centre of the city. It is served by express urban bus lines from the metro lines A (Veleslavín) and B (Zličín). Long-distance and regional bus lines also pass through. The special Airport Express bus line, intended primarily for airline passengers, goes from the main train station Praha hlavní nádraží to Terminals 1 and 2. Taxi service is also available, both by passenger automobiles and minibuses, and a number of car rental services operate here. Individual automobile transport (incl. taxis) is the predominant method of transporting persons between the airport and the city, both in the aggregate spectrum of traffic system users (airline passengers, employees, visitors, etc.) and, though to a lesser extent, in the category of departing airline passengers, for whom this parameter is monitored by Prague Airport year-round.

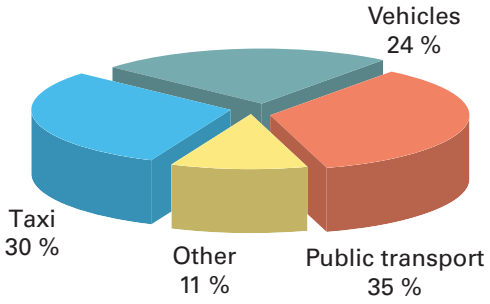
Modal split of trips to and from airport

all categories total, June 2016, workdays, 6:00-22:00



Modal split of trips to airport

only departing passengers, average for 2016



In 2016, more than 7 000 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 (4 715) is available for the public and employees in parking lots operated by the airport – PA Smart, PC Comfort and PD Holiday. Further spots are located in the T1+T2 buildings and in lots located at suitable locations in the complex. The majority of spots are mid-term and long-term; 490 short-term spots are available for operative access.

In the south part of the complex are 104 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 2000 – 2016

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
2015	3 570	24 622	3 855	8 880	3 763
2016	**3 500**	**25 575**	**4 501**	**8 915**	**4 560**

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. Regular transport service is provided by the Prague ferries, which are part of Prague Integrated Public Transport (PID) – see Chapter 3.6.

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

The oldest operator of water transport along the Vltava is Pražská paroplavební společnost (PPS), which was founded in 1865. Today this company forms a consortium with the company Prague Boats, which operates the boats for both companies.

Prague Boats, s. r. o. was created with the partition of the company Evropská vodní doprava (EVD), and harbours by Čechův most. Its flotilla includes the historic steamboats Vltava and Vyšehrad along with 19 modern motor boats. All boats are operated year-round, either at regular time intervals or according to the individual wishes of those ordering. Prague Boats and PPS organise various sightseeing tours along the Vltava, to the ZOO, as well as day trips to Slapy and Mělník. The boat fleet also includes the unique vessel Elektronemo, powered by solar energy (solar panels cover as much as 45 % of the consumption of the electric motors) and provides sightseeing tours along the Vltava, anchoring at Kampa. Four small, ecological, hand-made mahogany boats with a hybrid electric motor are used for rides around Malá Strana, the National Theatre, Charles Bridge and the Čertovka stream.

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

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Prague Boats	196	199	230	179	145	193	205	209	246	283	298	**322**
PPS	86	115	229	208	94	91	107	98	149	162	186	**189**

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

Pražské Benátky runs canal sight-seeing cruises along the Vltava year-round. The parlour express boat Nepomuk is used for private events. The company also operates 5 all-wood covered boats, a gondola named Eleonora and open boats that have now been constructed as copies of the "Vltava nudists" with flat bottoms and nearly vertical sides which can also sail through shallow areas. Boats leave from the "Judita" docks every 15-20 minutes. The company also operates the Prague ferries.

In April 2016, the nearly one-hundred-metre paddle steamer Elbe Princesse entered Prague, the largest river hotel ever to sail into the capital. It will travel regularly along the nine-day voyage between Berlin and Prague and back. During this voyage the boat passes through a total of ten cities, where travellers can participate in sightseeing tours. Despite the high price, the interest of tourists in boat rides from Germany to Prague continues to grow.

A number of smaller companies also 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.

In addition to restaurant sight-seeing boats, there are also historical OLD TIME BOATS for 6-10 persons and TAXI BOAT motor boats for 2-3 persons.

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 24 vessels and one floating dredger carrier.

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 these ports, temporary transhipment stations and mobile floating ramps are also used for handling freight.

Development of volume of goods passed through the locks in Prague (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
2015	145	345	41	440	313 900
2016	**0**	**1 492**	**225**	**580**	**465 065**

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

Year	Harbour					
	Radotín	Smíchov	Holešovice	Libeň	Other	Prague unspecified
2005	36 408	11 396	99 308	2 934	-	-
2010	0	364	53 207	0	-	-
2015	0	0	64 060	1 622	133 947	98 550
2016	**0**	**0**	**4 100**	**18 577**	**416 922**	**28 910**

Operators of domestic water transport sometimes also report a different location from which they haul earth dug up during construction work. Carriers can also report Prague as a place of port without further specification because in the international numbering system only Prague is listed.

14.3 Freight rail transport

The Prague railway node, the largest and most important railway hub 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).

Roughly 19 700 freight trains beginning and ending at railway stations within Prague were recorded in 2016 (a drop of 19.5 % compared to 2015).

Number of trains beginning and ending in Prague by month of 2016

Month	1	2	3	4	5	6	7	8	9	10	11	12	Total
Beginning	794	803	873	922	892	857	852	878	772	770	734	710	**9 857**
Ending	801	789	874	919	860	839	842	858	774	782	739	736	**9 813**

The largest Czech freight carrier is ČD Cargo. In Prague it accounts for about 73 % of the starting and ending trains and at Praha-Malešice about 66 % of the transit trains.

A positive example of incorporating rail transport (ČD Cargo) into construction of the city was the removal of excavated dirt from around the former railway workshops at station Praha-Bubny, the territory of which is being redeveloped into a modern urban neighbourhood. This took place 14 July until 25 August and a total of 20 000 tonnes of contaminated earth from the foundations of a planned administrative building was transported away. The progressive technology of Innofreight containers was used. Carting away such a large volume of dirt along the electrically powered railway from the construction site practically in the centre of the city to its place of disposal in Mydlovary, South Bohemia saved the streets of the capital roughly one and a half thousand trips by truck. The idea was very successful and the ground has been laid to apply Innofreight technology for further transport as well.

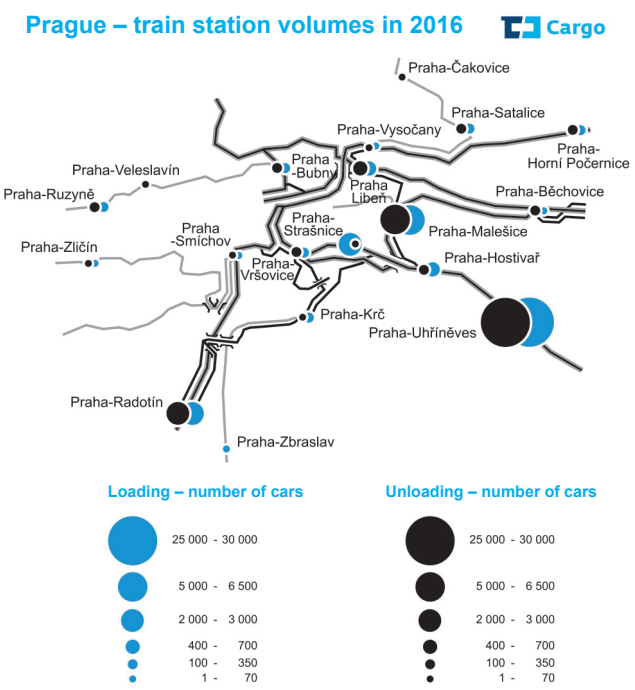
ČD Cargo freight train in Radotín

The most important carrier remains Metrans at the intermodal terminal in Prague-Uhříněves, which provides for a significant part of its volume using its own capacities, but also with the help of ČD Cargo. Other important freight transport includes metal waste from the stations Praha-Krč and Praha-Hostivař, the import of wooden cable drums to Praha-Hostivař, the shipping of tyres in covered wagons at Praha-Strašnice, the transport of metallurgical material at Praha-Malešice, the transhipment of bottled water at Praha-Libeň, the transhipment of liquefied gases at Praha-Satalice and the siding serving the cement plant from Praha-Radotín.

ČD Cargo dispatches three pairs of freight express trains every night for Czech Post. These connect the postal terminals in Praha-Malešice, Pardubice, Olomouc and Ostrava. The company Lagermax transports recyclable materials from its Prague warehouse at Praha-Ruzyně by night train to its branch in Ostrava. New in 2016 is that loaded shipments move in the other direction as well.

Number of cars and tonnes of freight loaded and unloaded for ČD Cargo at Prague stations in 2016

Station	Cars		Tonnes of freight	
	loaded	unloaded	loaded	unloaded
Běchovice	63	151	3 028	6 844
Bubny	322	324	20 098	3 122
Čakovice	-	15	-	903
H. Počernice	230	259	3 627	10 311
Hostivař	511	266	23 305	3 498
Krč	259	39	6 467	1 159
Libeň	695	431	18 175	14 320
Malešice	5 794	6 536	111 746	150 853
Radotín	2 035	3 082	54 000	151 262
Ruzyně	313	131	2 534	1 404
Satalice	99	101	3 382	4 270
Smíchov	19	18	905	816
Strašnice	1 951	23	20 138	747
Uhříněves	29 448	28 142	755 761	745 599
Veleslavín	-	3	-	140
Vršovice	227	151	2 978	6 469
Vysočany	6	15	146	553
Zbraslav	2	0	80	0
Zličín	3	2	61	43



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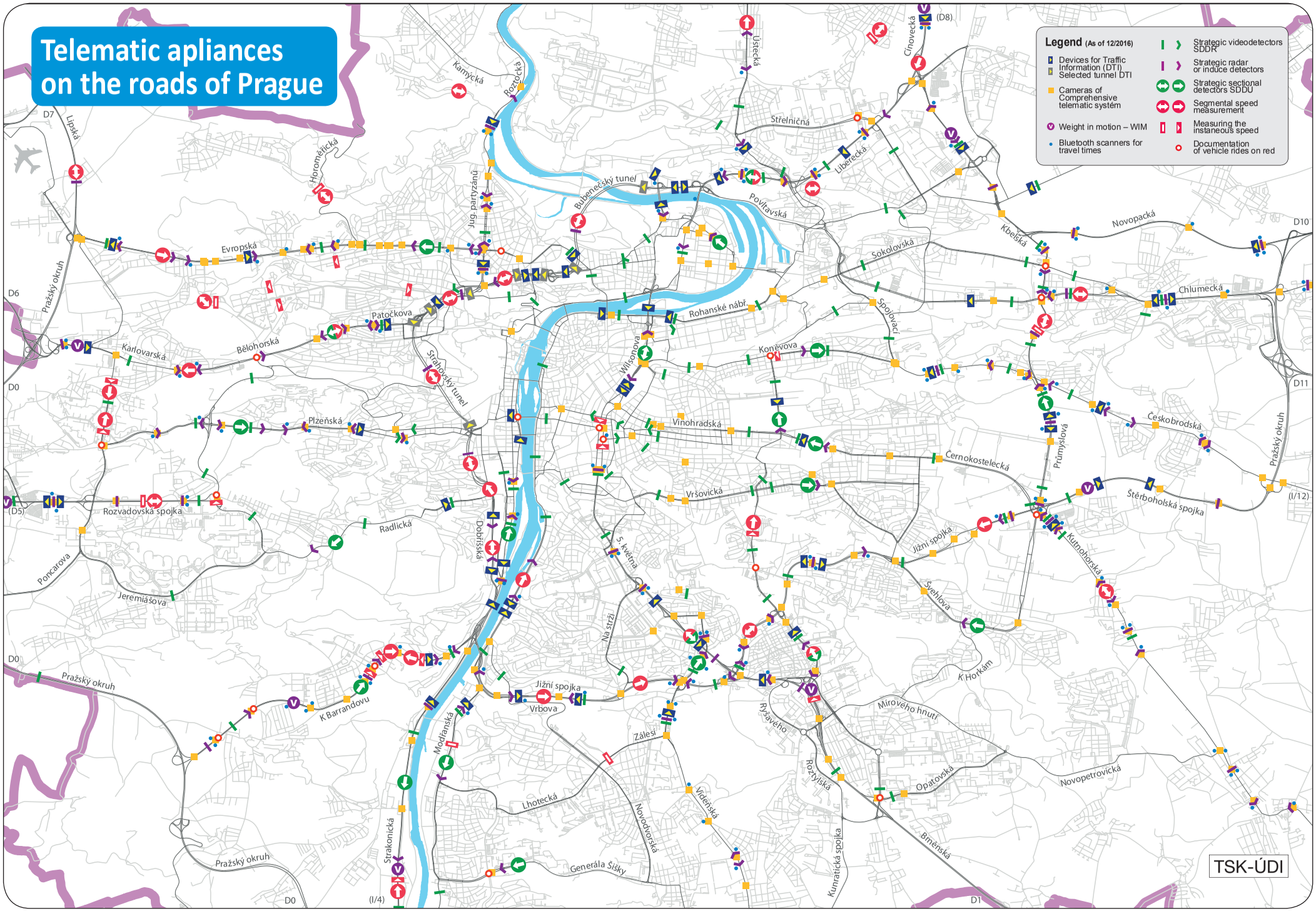
Telematic apliances on the roads of Prague
Legend (As of 12/2016)
Devices for Traffic Information (DTI)
Selected tunnel DTI
Cameras of Comprehensive telematic system
Weight in motion – WIM
Bluetooth scanners for travel times
Strategic videodetectors SDDR
Strategic radar or induce detectors
Strategic sectional detectors SDDU
Segmental speed measurement
Measuring the instaneous speed
Documentation of vehicle rides on red
TSK-ÚDI
D0
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Pražský okruh
Evropská
Lipská
Horoměřická
Kamýcká
Roztocká
Jug. partyzánů
Bubenečský tunel
Ústecká
Střelničná
Libečská
Povltavská
Cínovecká
Novopacká
Kbelská
Sokolovská
Chlumecká
Rohanské nábř.
Spojovací
Patočkova
Bělohorská
Karlovarská
Strahovský tunel
Wilsonova
Koněvova
Vinohradská
Plzeňská
Rozvadovská spojka
Radlická
Poncarova
Jeremiášova
Dobříšská
Vršovická
Černokostelecká
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Kunratická spojka
Jižní spojka
Švehlova
K Horkám
Mírového hnutí
Novopetrovická
Opatovská
Rozvojová
Rýšavého
Biměnská
Generála Šišky
Strakonická
Modřanská
Lhotecká
Novodvorská
Vídeňská
Zálesí
Vrbova
Na strži
5. května
K Barrandovu
Kutnohorská

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