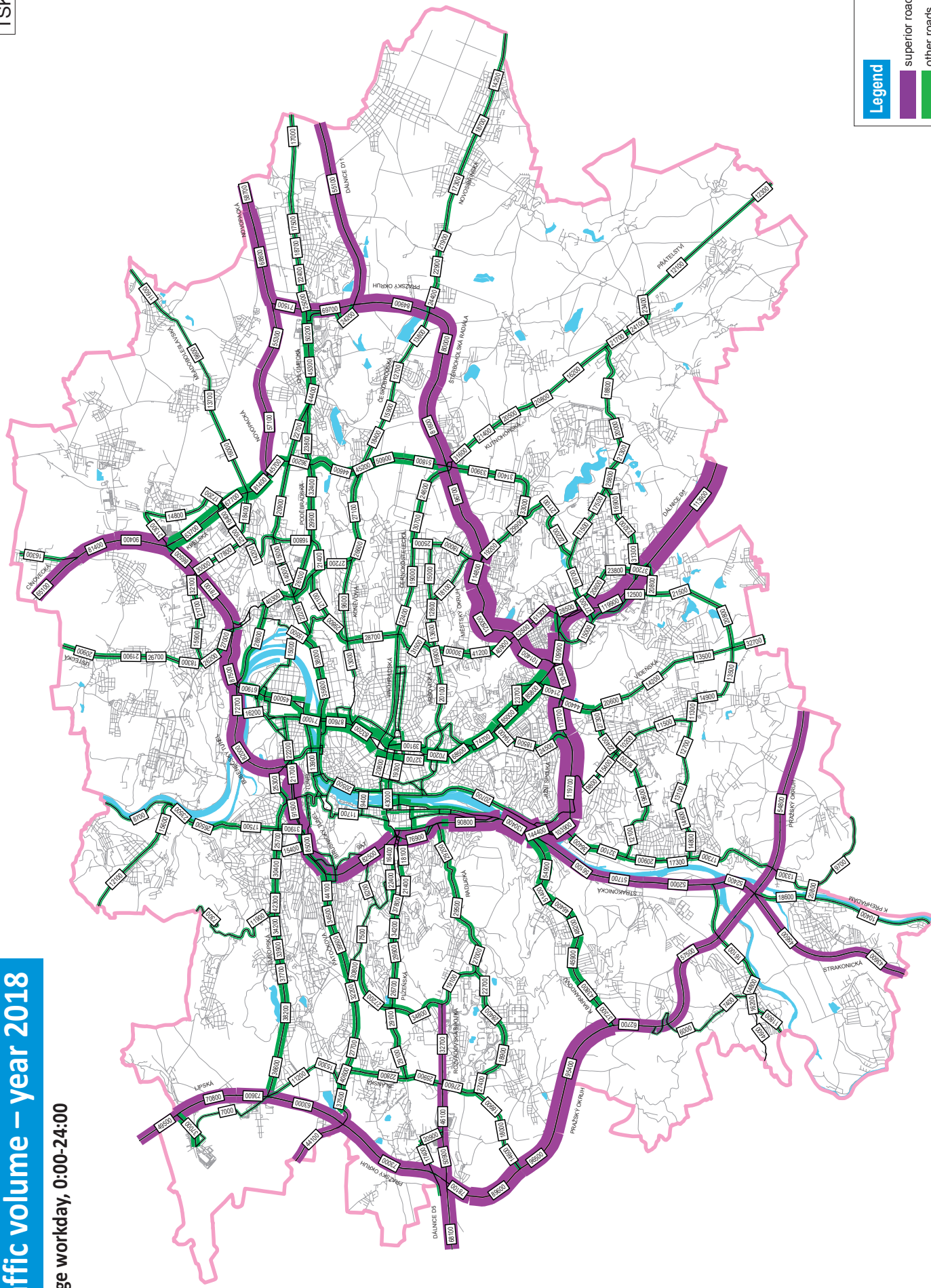


TECHNICKÁ SPRÁVA KOMUNIKACÍ HLAVNÍHO MĚSTA PRAHY, A.S.
Úsek dopravního inženýrství

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PRAGUE TRANSPORTATION YEARBOOK 2018



TECHNICKÁ SPRÁVA KOMUNIKACÍ HLAVNÍHO MĚSTA PRAHY, A.S.
Úsek dopravního inženýrství



PRAGUE TRANSPORTATION YEARBOOK 2018

Dear readers,

I am happy to present to you the 2018 Prague Transportation Yearbook, which has been prepared for you by the Department of Transport Engineering at the City of Prague Technical Administration of Roads.

Whether we are discussing the movement of people or goods, transport directly impacts every inhabitant of and visitor to Prague. We can have good experiences with transport in the capital, but also not entirely ideal ones. In order for the situation to improve every year, it is important to utilise quality data, on the basis of which it is possible to make qualified decisions that truly react to what is happening in the city and what the city needs. For this reason I appreciate the 2018 Prague Transportation Yearbook, which as a compilation of statistical data in specific numbers maps out the long-term trends of the transport situation in our capital.



It is a fact that the vehicle ownership rate in Prague numbers among the highest in Europe. The rate of over 800 vehicles per 1 000 inhabitants carries high demands for city space, with an impact on its image and not least of all the quality of the environment. At the same time it is also a fact that, compared internationally, the quality of Prague's public transport is rated very highly. Under such circumstances it is thus very good news that the modal share is positive, with 59% public transport vs 41% individual automobile transport, and we want to continue to improve this ratio in favour of mass transit.

This ambition is in line with the City of Prague Transport Policy currently being prepared, as well as the new Sustainable Mobility Plan. Also in store for Prague are investments and measures to help along sophisticated transport solutions, a balanced transport system and a good living environment in the city.

The facts laid out in the yearbook allude to important topics to be addressed. Among other things, it will be necessary to ensure satisfactory transport for commuters from the city's suburban surroundings, resolve the issue of vehicle parking in the city, implement a high-capacity public transport connection between the airport and the city, and exploit the potential of the railways for the needs of intracity and suburban public transport. Last but not least, there is also the execution of measures to reduce the effects of noise and emissions on the city population. All this must be done while making sure Prague continues to prosper economically and at the same time be attractive both for local life and tourist visitors.

I trust that the presented yearbook will be an interesting source of information for the general public as well as a good tool for experts in addressing the city's transport issues.

Ing. Adam Scheinherr, MSc., Ph.D.
Deputy Mayor of the City of Prague
for Transport

Prague, 15 May 2019

Dear readers,

You have just opened another annual report in a series of more than thirty years of yearbooks, which provides comprehensive information on the development of different forms of transport in the City of Prague in the year 2018. Over the past year TSK was at the centre of attention in launching a more intensive approach to improving the condition of transport infrastructure. An array of repairs, renovations and new initiatives took place with a view to increasing the safety and flow of traffic, focusing on all users of transport infrastructure, including the most vulnerable – pedestrians and cyclists. An important component of this approach is naturally an effort to maintain both roads and public transport routes in good technical condition.



Among the most significant projects of the past year were the refurbishing of the streets Husitská, Zenklova, Libušská, Českobrodská, part of Nuselská, Keplerova, Kamýcká and many others. In terms of tram tracks, repairs to the rails were part of the aforementioned refurbishing of Zenklova, and separate track repairs took place on Kolbenova, while the tracks in the segment Újezd - Malostranská were renewed. During these projects and other minor repairs, space was also made for building safer pedestrian crossings in the form of kerb extensions or inserting traffic islands, or adding extra lighting at crosswalks.

To improve passenger comfort, tram tracks were altered to be barrier-free (Maniny, Kamenická).

In terms of making sure the transport system is in good condition, including supporting aspects, action was taken to reduce traffic noise and emissions through noise reduction measures (construction of new noise barriers and repairs to existing ones, laying of low-noise asphalt, including special maintenance and replacing unsuitable surfaces with new ones in order to eliminate old sources of noise pollution).

In order to improve the air quality, mechanical street cleaning was conducted with power cleaners with PM 10 filters to reduce dust levels. Great emphasis was also placed on revitalising greenery and, due to the hot summer, we also increased the watering of young trees under five years of age, which are the most sensitive to extreme dry weather.

To benefit non-motorised transport, conditions were improved for riding bikes by building bicycle routes in forms practicable under local conditions (cycle paths, cycle lanes, protected lanes) and last but not least by expanding the offer of bike sharing, storage and options for transporting bicycles on public transport.

In the metro, challenging work was done to replace the escalators at Náměstí Republiky, Anděl and Karlovo náměstí; escalators were added at the station Veleslavín. Comprehensive renovations took place at the stations Muzeum (A), Dejvická and Palmovka.

In railway transport it is worth mentioning the renovation of Negrelli Viaduct and the commencement of work on the Optimisation of the Railway Track in the Segment Praha Hostivař – Praha hl. nádraží.

As far as further steps for developing the transport system are concerned, important decisions were made on the method of preparing construction of the missing eastern section of the City Ring Road. Further steps were made to acquire the land required for construction of the D metro line and to stabilise the scenario for modernising the Prague – Kladno railway track with a branch leading to the airport in Ruzyně.

Last year once again, the transport chapter of the city budget was the largest, at 28 %. Thanks to this, as its administrator we worked with a greater amount of funding in both current and investment expenditures compared to the year before.

I trust that the data in this publication will capture your interest, and you can find more detailed and ongoing information on the website www.tsk-praha.cz.

A stylized handwritten signature in blue ink, consisting of a large 'J' followed by a series of loops and a long horizontal stroke.

Mgr. Jozef Sinčák
CEO and Chairman of the Board

City of Prague Technical Administration of Roads

Prague, 15 May 2019

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1 BASIC DATA

1.1 Selected data on the City of Prague as of 31 December 2018

Land area	496 km ²
Number of inhabitants	1 308 632
Total length of road network	3 989 km
of which administered by TSK	2 325 km
administered by others	1 664 km
Number of bridge structures on the road network administered by TSK*	595
of which bridge structures over the Vltava	26
underpasses	119
Number of road tunnels (total length 14 km)	13
Number of motor vehicles	1 104 392
of which number of passenger automobiles	882 717
Vehicle ownership (vehicles per 1 000 inhabitants)	844
Automobile ownership (passenger automobiles per 1 000 inhabitants)	675
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	843.0 km
Number of traffic signals	665
signals at separate pedestrian crossings	153
Vehicle kilometres travelled (VKT) by automobile on road network	
average workday	23.0 mil. VKT
annually	7.2 mld. VKT
Vehicle kilometres travelled (VKT) by metro, trams, buses and trains on city territory	
average workday	0.8 mil. VKT
annually	204.4 mil. 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	22 767
Number of recorded traffic accident injuries	2 378
fatal	31
serious	182
minor	2 165
Relative accident rate (number of accidents per 1 million VKT)	3.1

* 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 (km ²)	496	78 870	0.6
Population (mil.)	1.309	10.650	12.3
Number of motor vehicles (in thousands)	1 104	7 814	14.1
of which passenger cars (thousands)	883	5 779	15.3
Vehicle ownership	motor vehicles per 1 000 persons	734	-
	persons per 1 motor vehicle	1.4	-
Car ownership	passenger cars per 1 000 persons	543	-
	persons per 1 motor vehicle	1.8	-

Comparison of VKT in the years 1990–2018 (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
2015	21.8	154.9
2016	22.3	160.4
2017	23.0	165.2
2018	23.0	170.9***
Index 2018/1990 (%)	315.5	211.2***
Index 2018/2017 (%)	99.8	102.9***

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

Comparison of registered vehicles in 1961–2018										
Year	Prague					Czech Republic (up until 1971 Czechoslovakia)				
	Population (000s)	Motor vehicles		Passenger cars		Population (000s)	Motor vehicles		Passenger cars	
		total	%	total	%		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
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
2017	1 295	1 058 949	247	844 613	251	10 610	7 550 908	187	5 572 788	231
2018	1 309	1 104 392	258	882 717	263	10 650	7 814 215	193	5 778 593	240

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.

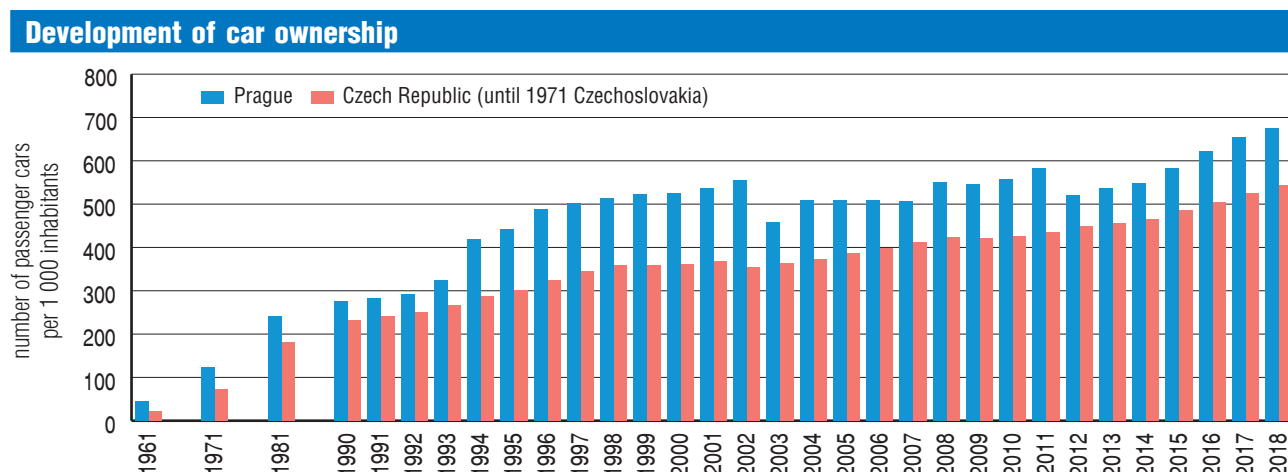
Starting in 2012 the data have been taken from the new central vehicle registry (data administered by the Ministry of Transport's Department of Road Vehicles).

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 2018 there was one registered passenger automobile per 1.5 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
2016	783	1.3	621	1.6	687	1.5	505	2.0
2017	818	1.2	652	1.5	712	1.4	525	1.9
2018	844	1.2	675	1.5	734	1.4	543	1.8



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.

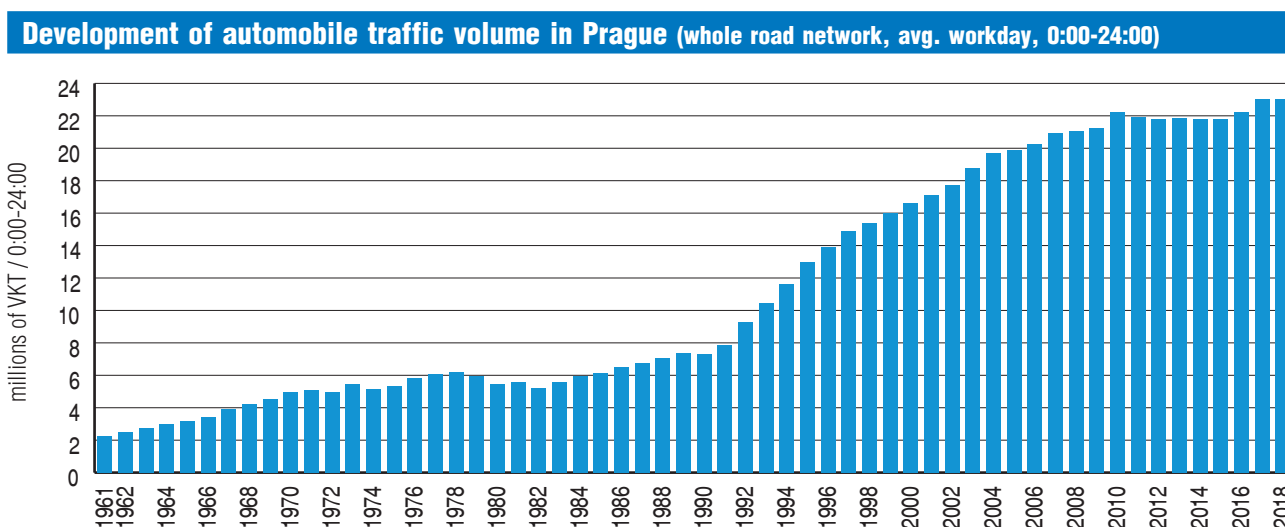
All data on traffic volume apply to the period from 0:00-24:00 of an average workday. All data on automobile traffic exclude municipal public transport buses.

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.

In the period of 0:00-24:00 of an average workday for the year, motor vehicles drove in 2018 23 006 million VKT in all of Prague. Of this amount, passenger cars accounted for 20 977 million VKT, or 91 %.

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
2017	23.043	316	21.062	360	91
2018	23.006	315	20.977	359	91

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



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 2018, of those 246 000 passenger automobiles.

In comparison with the previous year of 2017, automobile traffic decreased by 2.3 % in the area delineated by the central cordon.

Outer zone of the city – outer cordon

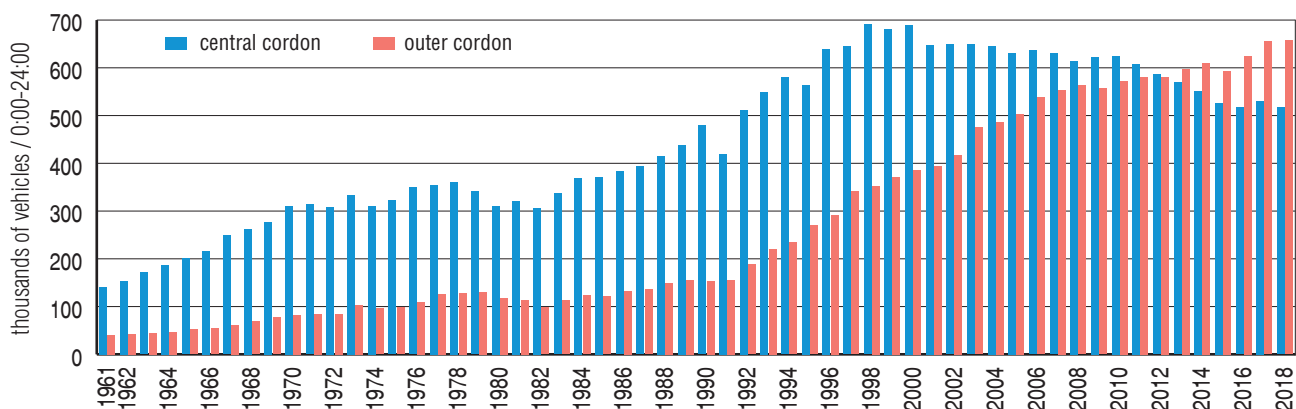
Based on counts done at the outer cordon, which expresses the volume of traffic at the entrances from the main roads and motorways into the continually settled area of the city, over the 24 hours of an average workday 329 000 vehicles entered Prague (single-direction) across the boundary of the outer cordon, of which 298 000 were passenger cars. Compared to the previous year this was an increase of 0.6 %.

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

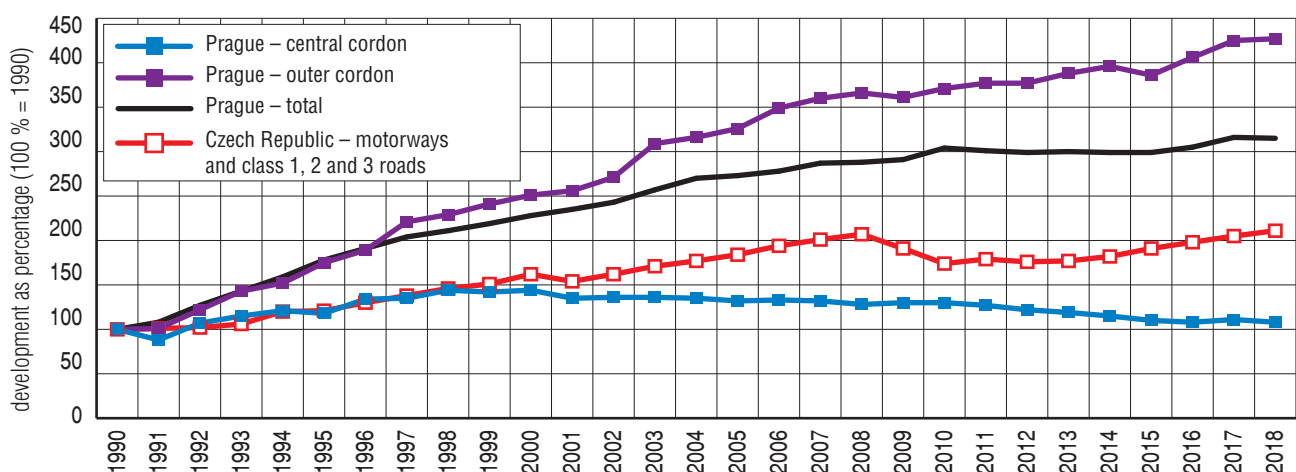
Year	Central cordon						Outer cordon					
	Passenger		Freight		Vehicles total		Passenger		Freight		Vehicles total	
	number	%	number	%	number	%	number	%	number	%	number	%
1961	76 000	18	35 000	81	141 000	29	15 000	14	15 000	41	40 000	26
1971	265 000	62	42 000	98	314 000	66	56 000	50	25 000	68	85 000	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
2016	495 000	117	9 000	21	517 000	108	558 000	503	56 000	151	625 000	406
2017	505 000	119	10 000	23	530 000	111	580 000	523	64 000	173	655 000	425
2018	491 000	116	9 700	23	517 000	108	595 000	536	62 000	168	657 000	427

100 % = year 1990

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



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



Prague road network segments with heaviest traffic in 2018

	Segment	Total vehicles per day (0:00-24:00)
1.	Barrandovský most	144 000
2.	Jižní spojka (5. května – Vídeňská)	130 000
3.	Strakonická (Dobříšská – Barrandovský most)	130 000
4.	Jižní spojka (Chodovská – V korytech)	125 000
5.	D1 (Chodovec – exit Chodov)	120 000

Heaviest bridges across Vltava and Prague road network tunnels with heaviest traffic in 2018					
	Bridge	Total vehicles per day (0:00-24:00)		Tunnel	Total vehicles per day (0:00-24:00)
1.	Barrandovský most	144 000	1.	Dejvický tunel	92 000
2.	Hlávkův most	71 000	2.	Zlíchovský tunel	91 000
3.	most Barikádníků	62 000	3.	Brusnický tunel	85 000
4.	Radotínský most (on Prague ring)	55 000	4.	Strahovský tunel	83 000
5.	Jiráskův most	43 000	5.	Bubenečský tunel	82 000

Grade-separated intersections on the Prague road network with the heaviest traffic in 2018					
	Intersection	Total vehicles per day at the intersection (0:00-24:00)		Intersection	Total vehicles per day at the intersection (0:00-24:00)
1.	Poděbradská – Kbelská	68 000	1.	5. května – Jižní spojka	213 000
2.	Černokostelecká – Průmyslová	67 000	2.	Strakonická – Barrandovský most	194 000
3.	Kolbenova – Kbelská	62 000	3.	Jižní spojka – Chodovská	163 000
4.	Legerova – Anglická	61 000	4.	Jižní spojka – Barrandovský most	144 000
5.	Mezibranská – Žitná	59 000	5.	Cínovecká – Kbelská	129 000

Data on traffic volume on various segments of the monitored road network in Prague for 2018 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.

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
2015	1.30	1.30	1.30
2016	1.30	1.30	1.30
2017	1.30	1.30	1.30
2018*	1.30	1.30	1.30

* A traffic study took place in 2018 to check the data on occupancy rate of automobiles within the City of Prague.

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 2018, this rate was 95 % 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 (74 % for 6:00-18:00), with the period 6:00-22:00 accounting for approx. 91 %.

After 19:00, traffic volume begins to drop off steeply and more or less uniformly until midnight.

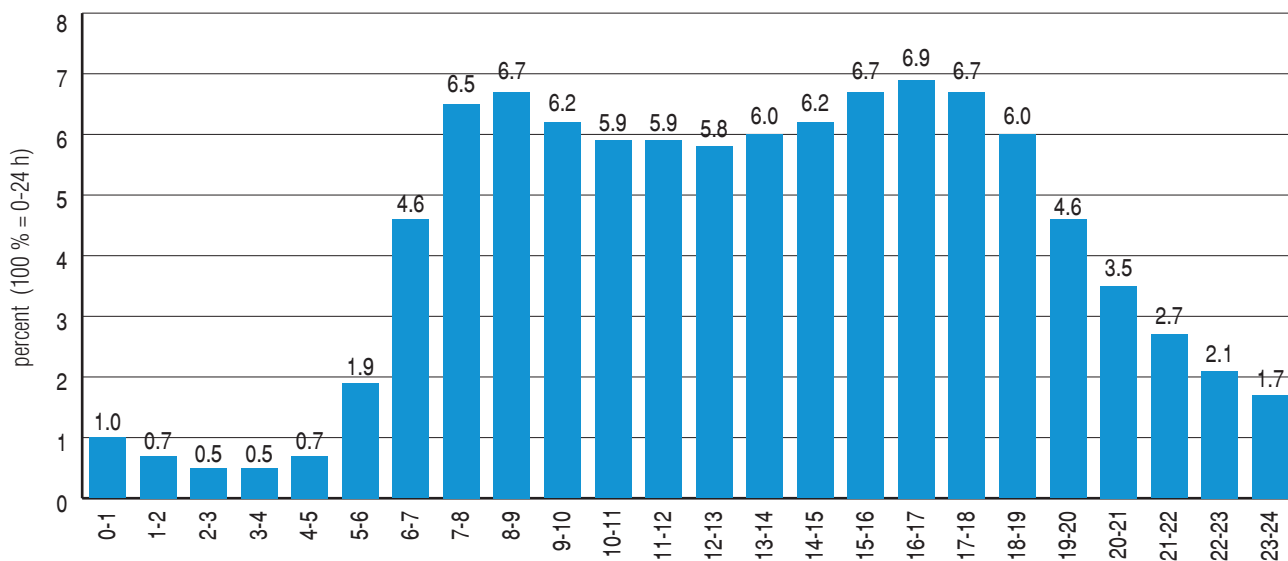
The morning peak is at 8:00-9:00; the afternoon peak hours is 16:00-17:00.

The volume of the morning peak hour makes up 6.7 % 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.

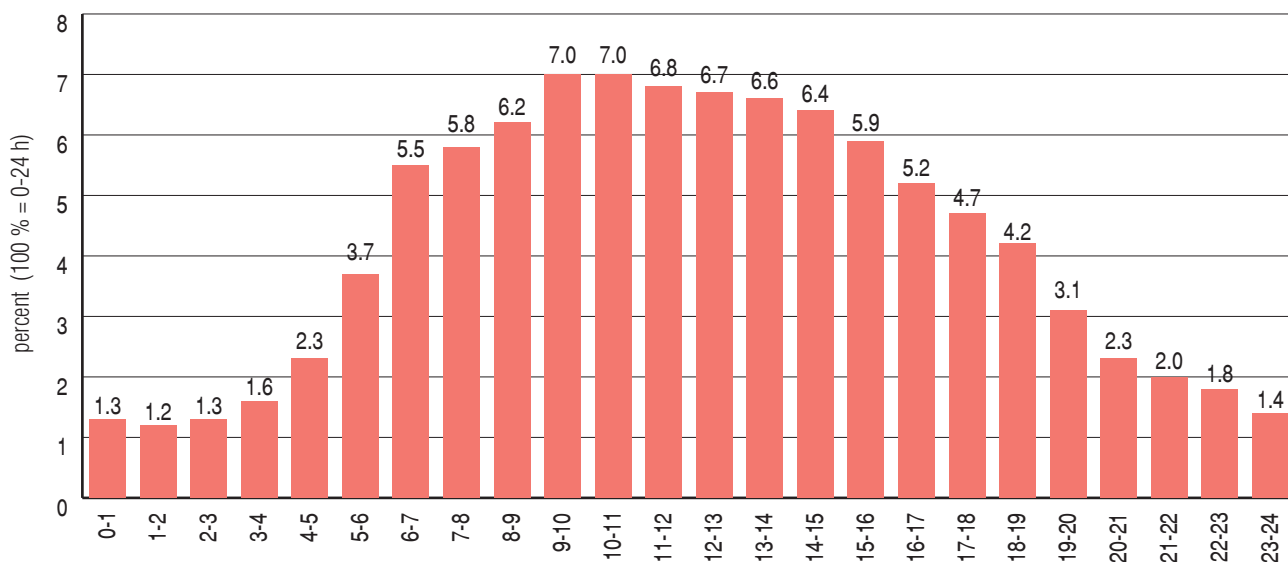
The difference between the peak hours and the noon sag is not very pronounced.

For the variation of freight automobiles and buses not including public transport, the share of the peak hours decreased, though their position within the day remained the same as the previous year.

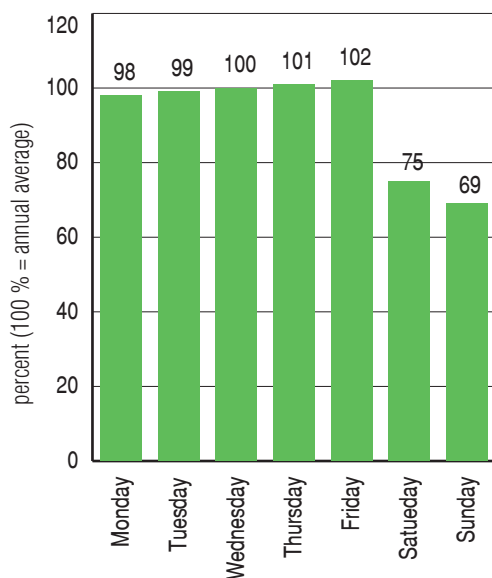
Daily variation of total automobile traffic (2018, Prague, whole network, workday)



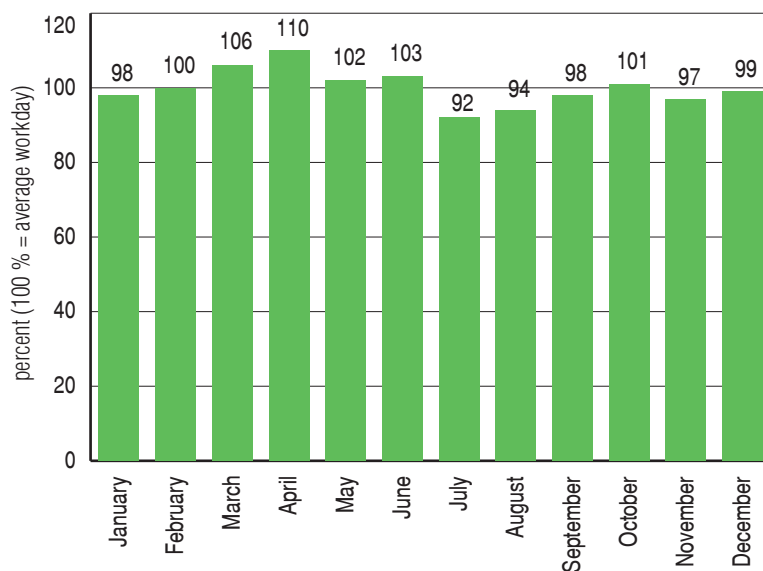
Daily variation freight vehicles and buses, not incl. public buses (2018, Prague, whole network, workday)



Weekly variation (Prague, whole network, total vehicles)



Annual variation (Prague, whole network, total vehicles)



2.4 Directional survey of the northwest segment of the City Ring Road

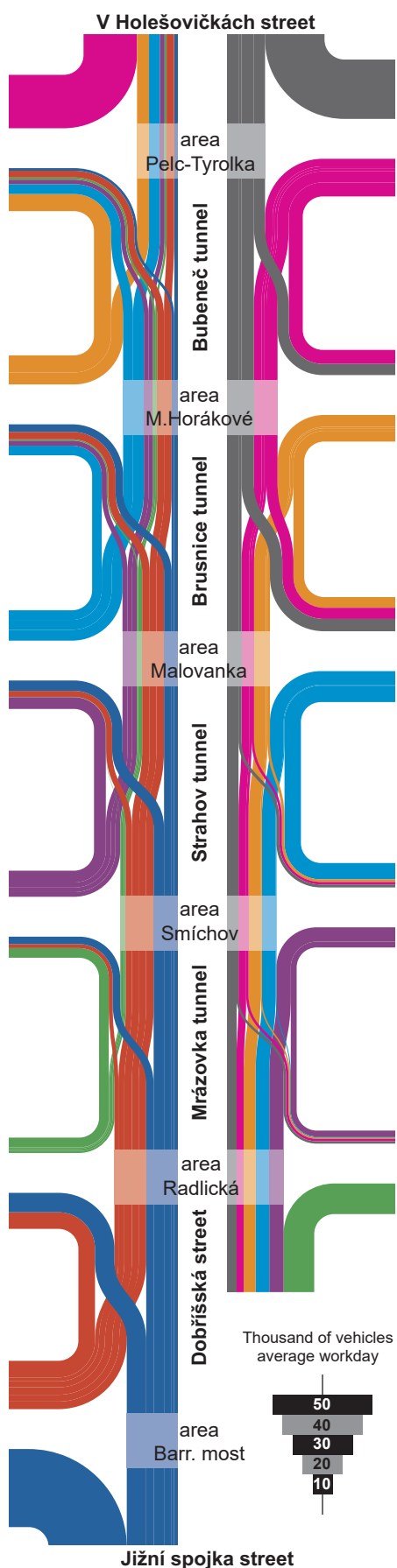


Diagram of directional survey on City Ring Road

At the end of May and beginning of June 2018, data collection was conducted for the purposes of analysing the direction of journeys on the northwest segment of the City Ring Road. The analysis could be made thanks to aggregated data from equipment with machine reading of registration plates from passing vehicles (segment speed measurement and strategic section detectors).

This equipment is installed on the majority of straight sections of the part of the City Ring Road in question. The areas U Vorlíků and Prašný most have been consolidated into the virtual area Milady Horákové primarily due to the fact that the straight part of the Dejvice Tunnel is not fully covered. For the same reason the area of Barrandovský most was also only partially evaluated. Entrances and exits from the monitored system were deduced using the mutual differences between the known or other derived journeys.

For the results to be usable for modifying traffic management and calibrating the traffic model, the analysis focused on the demand in directions of traffic on an average workday, excluding days that border on public holidays. Data was processed at a hour-by-hour level of detail.



Cameras measuring section speed in a tunnel

The diagram at the edge of the page depicts both directions of the monitored segment of the City Ring Road – the left half in the direction from V Holešovičkách towards the Jižní spojka, and the right half in the opposite direction. The colour of the band is based on the area in which the vehicles leave the monitored system. The width of the band, including its horizontal sum at any cross-section, corresponds to the full-day volume of automobile traffic in an average workday.

It is evident from the results that traffic that uses the whole length of the monitored section of the City Ring Road is less significant compared to the other traffic.

Only 10.5 % of vehicles passing along Dobříšská use the full length of V Holešovičkách – Dobříšská.

The section Malovanka – Bubeněč Tunnel has a higher share (28 % from the Bubeněč Tunnel), which corresponds to the shorter distance between the entrance and exit, but could also be related to the large distance to the next option for crossing the Vltava north of Prague.

The most striking however are the edges of the monitored system, where it is evident that traffic making use of the Bubeněč Tunnel has only a 40 % share in the traffic volume on V Holešovičkách, which as it happens is the same proportion as for trips from Dobříšská to the Jižní spojka towards Krč compared to the overall use of the Jižní spojka in the given direction.

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 (Prague, from 1993), IDSK (from 2017)
Inhabitants with access to PID	2 506 682 (1 308 632 in Prague and 1 198 050 in the Central Bohemian and Regions)
Area served	7 383 km ² (City of Prague 496 km ² , Central Bohemian and Regions 6 887 km ²)
Municipalities served	657 (144 served by railway and bus, 192 only by railway, 321 only by bus)
Number of PID lines	514 (208 solely within Prague, 134 btw. Prague and region, 172 solely in region)
Number of PID carriers	27 (Prague Public Transport Company, Czech Railways and 25 private carriers)
Persons transported annually	1 370 431 250 (1 269 552 250 within Prague and 100 879 000 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 20.2 bn (77.8 % Prague, 21.0 % revenue, state budget 1.1 %, other entities 0.1 %)
PID fare revenue in Prague	CZK 4.2 bn (21.0 % of costs)



An M1 train on the C line at Hlavní nádraží station



The refurbished Olšanské hřbitovy stop

Development of PID traffic in the capital city of Prague

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Metro (mil. VKT/year)	52.7 ↑	53.3 ↑	54.8 ↑	54.1 ↓	53.0 ↓	52.2 ↓	55.7 ↑	57.5 ↑	58.1 ↑	59.2 ↑
Trams (mil. VKT/year)	52.6 ↑	53.6 ↑	54.0 ↑	53.5 ↓	51.0 ↓	50.9 ↓	51.5 ↑	54.6 ↑	57.9 ↑	57.7 ↓
Buses (mil. VKT/year)	70.3 ↑	71.1 ↑	76.2 ↑	76.8 ↑	75.8 ↓	75.8 ↓	77.3 ↑	78.0 ↑	79.6 ↑	82.1 ↑
Railways (mil. trainkm/year)	4.0 ↑	4.1 ↑	4.4 ↑	4.6 ↑	4.6 ↑	4.7 ↑	4.8 ↑	4.9 ↑	5.2 ↑	5.4 ↑
TOTAL	179.6 ↑	182.1 ↑	189.4 ↑	189.0 ↓	184.4 ↓	183.6 ↓	189.3 ↑	195.0 ↑	200.8 ↑	204.4 ↑

Development of PID system

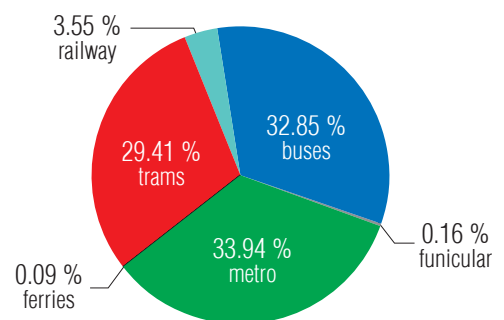
	1992	1995	2000	2005	2010	2015	2016	2017	2018
Number of municipalities served by PID	3	23	221	345	347	359	375	557	657
Number of PID railway stations and stops in PID	23	59	190	212	222	235	238	392	529
Number of PID suburban and regional bus lines	2	11	89	147	150	161	167	222	220

514 lines operated under PID		
Mode of transport	Lines	Type and numbering of lines
Metro	3	Day lines A, B, C
Trams	34	25 day lines (numbered 1-26), 9 night lines (numbered 91-99)
Urban buses with routes solely within City of Prague boundaries	161	120 day lines (numbered 100-250), 15 night lines (numbered 901-915), 23 school lines (numbered 251-275), 1 line for persons with reduced mobility (H1) and 1 AE line (with separate fare), 1 trolleybus (58)
Suburban buses with routes btw. city and region	97	88 day lines (numbered 300-399), 9 night lines (numbered 951-960)
Regional buses with routes solely in the region	123	122 day lines (numbered 421-672), 1 seasonal cyclobus
Railway btw. Prague and territory of regione	38	14 S lines (S1-S9, S22, S49, S54, S65, S88), 15 R lines (R9, R10, R16-R21, R24, R26, R41, R43, R44, R45, R49), 1 urban line (S34), 8 seasonal and tourist lines
Railway only in the region	49	39 S lines (S10-S21, S23-S40, S42-S53, S55-S64, S66-S80, S90-S99), 2 R lines (R22, R23), 6 U lines (U4-U40), 1 seasonal and tourist line
Ferries	8	P1, 2 (both year-round), P3, 4, 5, 6, 7 (all seasonal), P8 (temporary)
Funicular	1	Újezd-Petřín Funicular

Operators of PID lines	
Metro, trams, Petřín funicular	Prague Public Transport Company (DPP) – (38 lines)
Urban buses	DPP (134 lines), 8 private carriers (27 lines)
Suburban and regional buses	17 private carriers (207 lines), DPP (13 lines)
S railway lines	Czech Railways (77 lines), KŽC Doprava, s.r.o. (9 lines), Arriva vlaky, s.r.o. (1line)
Ferries	Pražské Benátky, s.r.o. (5 lines), PPS, a.s. (2 lines), Vittus group, s.r.o. (1 line)



PID ridership and share of total passengers within the City of Prague for 2018		
Mode of transport and operator	Persons/year	
Metro (DPP)	430 919 000	33.94 %
Trams (DPP)	373 434 000	29.41 %
Urban buses (DPP and private)	379 411 000	32.85 %
Suburban buses (private and DPP)	37 572 000	
Railway (ČD, KŽC, Arriva)	45 014 000	3.55 %
Funicular (DPP)	2 032 300	0.16 %
Ferries (private carriers)	1 169 950	0.09 %
Total	1 269 552 250	100.00 %



Composite data on PID in 2018				
	Metro	Trams	Buses	Railway
Operating length of network within Prague (km)	65.1	142.7	843.0	160.0
Operating length of network outside Prague (km)	-	-	> 1 800.0	1 515.0
Average distance between stations and stops in Prague (km)	1.122	0.517	0.590	3.72
Average travelling speed within Prague (km/h)	35.7	18.6	23.7	49.3
Annual VKT within Prague (in thousands)*	59 244	57 719**	82 090	5 374
Annual VKT outside Prague (in thousands)*	-	-	31 908	18 194
Passengers transported annually in Prague (thousands)	430 919	375 466**	416 983	45 014
Passengers transported annually outside Prague (thousands)	-	-	47 473	53 406

* 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 1 773 train connections are dispatched in the Prague metro, carrying approximately 1 426 860 passengers (if a passenger transfers, each ride is counted separately). If a transfer is counted as part of a single ride, passengers make 1 171 210 rides by Prague metro each day.

Basic data on the metro network in Prague			
Lines	Operating time	Operating length	Persons transported per day
3 (A, B, C)	daily approx. 4:45-0:15	65.1 km	1 426 860
Stations	Barrier-free stations	Average distance between stations	Average travelling speed
61	44 (72 %)	1.122 km	35.7 km/h
Ridership within Prague (2018) and modal share under PID		Annual VKT	Trains running at peak
430 919 000*	33.94 %	59 244 000 (a train has 5 vehicles)	103 (A 26, B 38, C 39)
Most connections	Shortest interval at peak	Most frequented segment	Most frequented station
Line C (672 conn./day)	Line C (1 min 55 seconds)	IPP-Vyšehrad (277 300 ppl/day)	Můstek A/B (178 100 ppl/day)

* The lower number of persons transported on the metro is related to the greater number of stations and vestibules closed during renovations.



An M1 train at the Kačerov depot



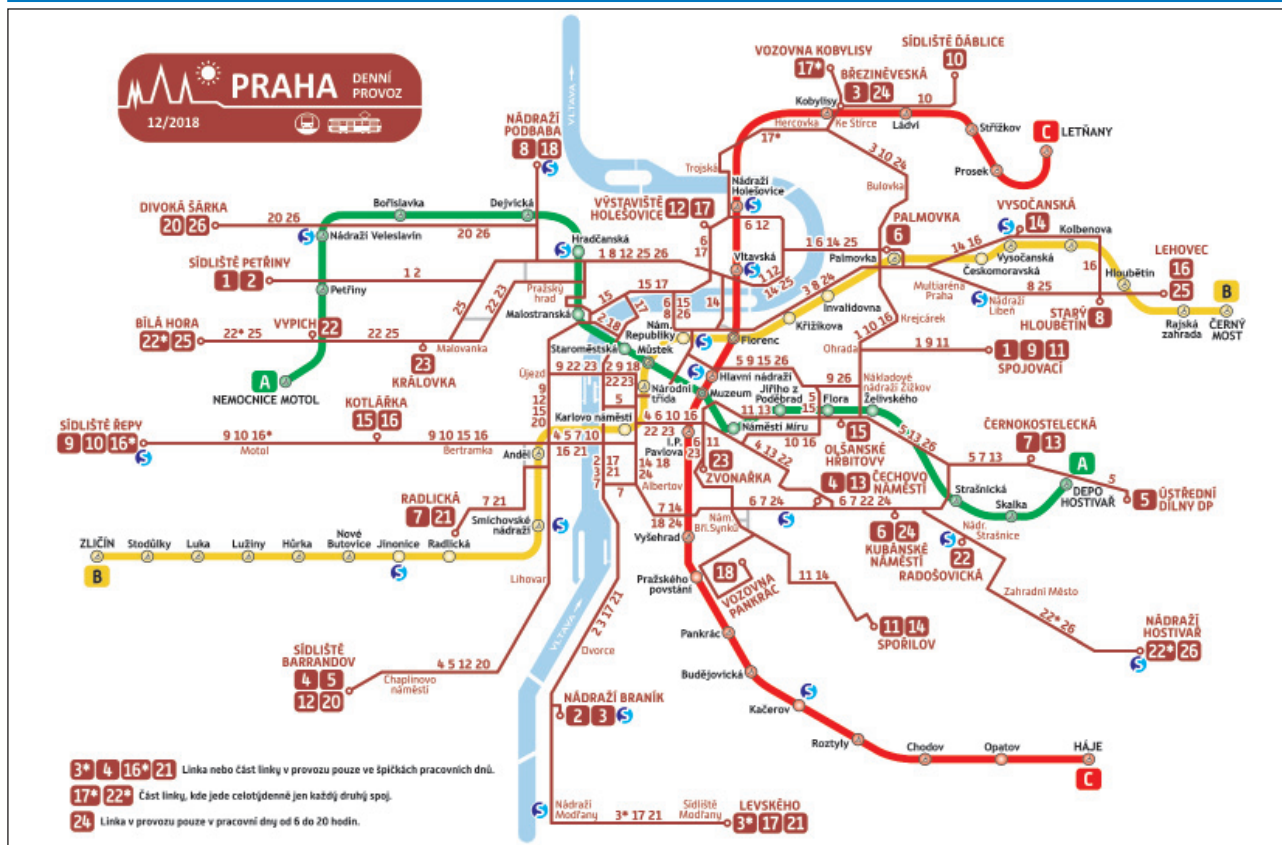
New escalator at the exit from Nádraží Veveř station

3.3 Trams

Trams form a complementary network to the metro. Tram lines have both a radial and a tangential function, also serving as feeders for metro stations. Over the course of one workday, an average of 6 600 connections are dispatched on the Prague tram network (including night trams), transporting approximately 1 239 040 passengers.

Basic data on the tram network in Prague			
Lines	Day operating time	Operating length	Persons transported per day
34 (25 day, 9 night)	approx. 4:45-0:30	142.7 km (52 % dedicated track bed)	1 239 040
Stops	Night operating time	Average distance between stations	Average travelling speed
276 (601 by stop marker)	approx. 0:15-5:00	0.517 km	18.6 km/h
Ridership within Prague (2018) and modal share under PID		Annual VKT	Trams running at peak
373 434 000	29.41 %	57 719 000 (30 m tram = 2 vehicles)	435
Most connections	Shortest interval at peak	Most frequented segment	Most frequented station
Line 22 (501 conn./day)	Lines 9, 17, 22 (4 minutes)	IPP-Štěpánská (84 730 ppl/day)	Anděl (83 480 osob/den)

Metro and tram lines in Prague (day lines as of 31 December 2018 – not including closers)



A T3R.P tram leaving the new Libeňský zámek stop



Trams near the Vosmikových stop

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 25 270 PID bus connections are dispatched, transporting approximately 1 213 280 passengers. Of this amount, around 20 020 connections are urban lines (the 100, 200 and 900 series) and around 5 250 connections are suburban lines (the 300 and 950 series).

Basic data on the PID bus network in Prague			
Lines	Day operating time	Operating lenght in Prague*	Persons transported per day*
161 (146 day, 15 night)	approx. 4:45-0:30	843.0 km	1 213 280
Stops	Night operating time	Average distance between stations	Average travelling speed
1 197 (3 169 by stop marker)	approx. 0:15-5:00	0.590 km	23.7 km/h
Ridership within Prague (2018) and modal share under PID*		Annual VKT*	Vehicles running at peak*
416 983 000		82 090 000	1 365
32.85 %			
Most connections	Shortest interval at peak	Most frequented segment*	Most frequented station*
Line 200 (443 conn./day)	Lines 107, 200 (2 minutes)	Nemocnice Krč (66 000 ppl/6-20:00)	Dejvická (50 760 ppl/6-20:00)

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



Na Knížecí bus turnaround



Bus Day at Letňany

On an average workday, approximately 5 250 connections crossed the city boundaries in both directions on suburban bus lines (the 300-399 and 950-960 series), carrying approximately 98 980 passengers across the city limits. Suburban bus lines used a total of 36 locations as starting or final stops within Prague.

The most suburban PID lines (15) and connections (600) 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 421-672 series). At the end of 2018 a total of 3 500 connections rode outside the territory of Prague daily, carrying roughly 37 240 passengers on an average workday. They were all operated by private carriers.

Basic data on the PID bus network in the surroundings of Prague		
Suburban bus lines	Regional bus lines	Operating lenght outside Prague
97 (88 day a 9 night)	123 (122 day, 0 night, 1 seasonal)	> 1 800.0 km
Stops	Average distance between stations	Average travelling speed
2 045 (4 051 by stop marker)	1.100 km	32.50 km/h
Ridership on PID buses outside Prague (2018)		Operating time
47 473 000		day 4:30-0:30, night 0:00-5:00
Annual VKT		Vehicles running at peak
31 907 660		669 (of which 426 on suburban lines)

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 1110 train connections were dispatched under PID daily on workdays in 2018, carrying approximately 157 640 passengers.

Basic data on the PID rail network within Prague			
Lines	Operating time	Operation lenght	Persons transported per day
38 (15 S, 15 R, 8 special)	approx. 4:45-0:30	160.0 km	157 640
Stations	Weekend night trains	Average distance between stations	Average travelling speed
45	at 2:30 from Praha hl. nádraží	3.55 km	49.3 km/h
Ridership within Prague (2018) and modal share under PID		Annual number of train kilometres	Trains running at peak
45 014 000	3.55 %	5 373 800	138
Most connections	Shortest interval at peak	Most frequented segment	Most frequented station
Line S7 (80 conn./day)	Lines S7, S9 (10 minutes)	Praha-Kyje – Praha-Libeň (38 798 ppl/day)	Praha hl. n. (49 890 ppl/day)



A City Elephant train on the S9 line at Praha-Strašnice stop



August saw the end of regular operation for 451 series trains

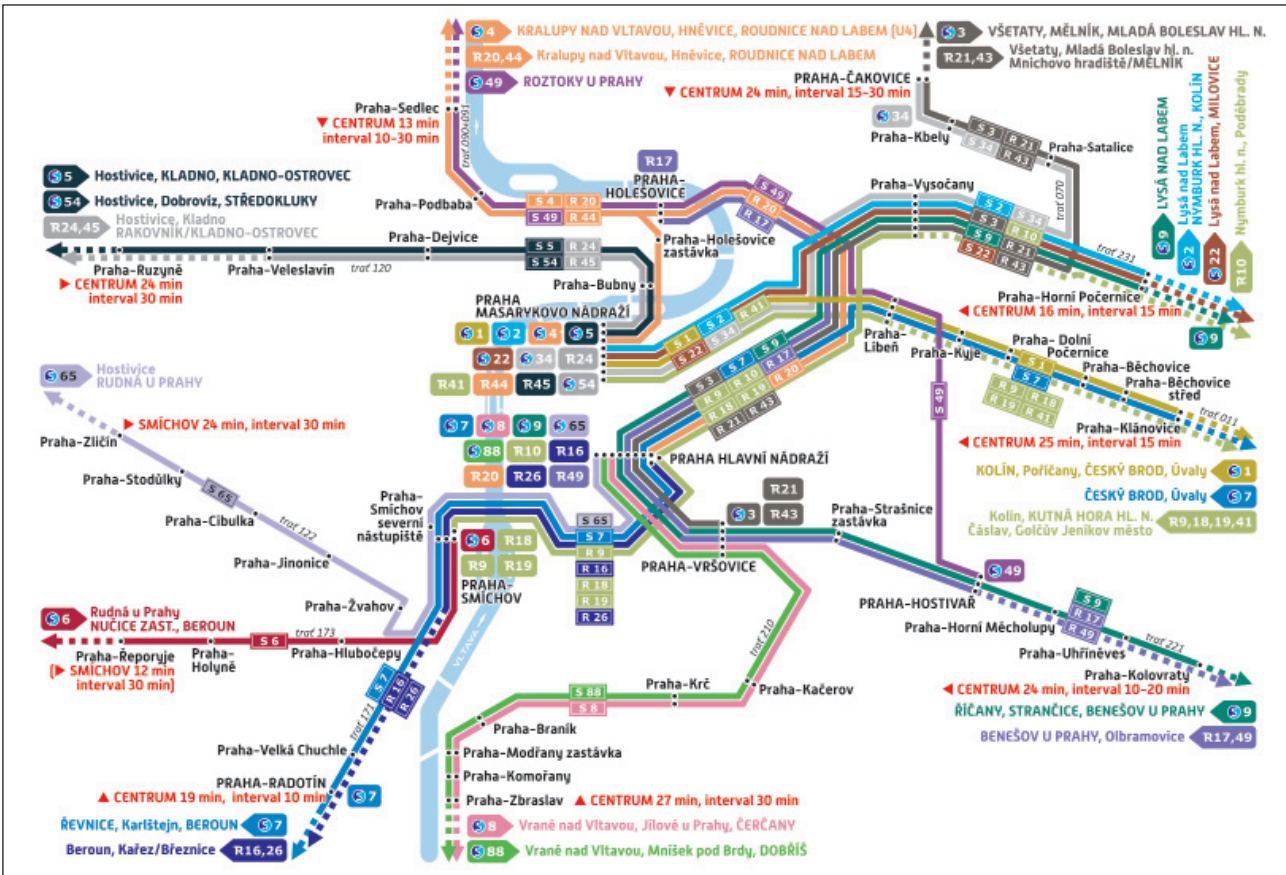
In addition to connections serving the territory of Prague, a further 49 PID lines travel only in the region outside Prague, on which roughly 1 550 train connections are dispatched daily.

Number of persons transported by rail under PID per year (using PID or ČD tickets)									
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Persons	26 883 000	29 320 000	32 361 000	34 762 000	36 548 000	36 669 000	37 462 000	39 448 000	45 014 000

Percentage share of tickets used by passengers on PID trains within Prague (workday)											
	2000	2002	2004	2006	2008	2010	2012	2014	2016	2017	2018
PID document* (%)	39.2	52.1	57.7	60.4	63.8	68.7	72.7	72.2	71.6	65.3	58.9
of which individual PID fare (%)	-	7.2	10.6	7.5	5.6	8.5	5.3	5.3	5.4	5.0	4.7
ČD document, free transport (%)	60.8	47.9	42.3	39.6	36.2	31.3	27.3	27.8	28.4	34.7	41.1

* including individual PID tickets

S and R railway lines within the City of Prague (not including closers)



3.6 Funicular and ferries

The funicular is part of PID and provides a connection between Újezd, Nebozícek and Petřín. In 2018 it carried a total of 2 032 300 passengers (a daily average of 5 570) and accounted for 0.16 % 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.

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).

Overview of Prague ferries operated in 2018 and selected operating parameters

Line	Route	Beginning of operation	Service	Persons transported/ day	Persons transported/ year
P1	Sedlec – Zámky	1 Jul 2005	year-round	125	45 480
P2	V Podbabě – Podhoří	1 Jul 2006	year-round	691	252 360
P3	Lihovar – Veslařský ostrov	17 Jul 2007	seasonal	191	41 740
P4	Černošice, Mokropsy – Kazín	1 Jun 2017	seasonal	42	5 160
P5	Císařská louka – Výtoň – Náplavka Smíchov	31 Jul 2008	seasonal	1 190	357 140
P6	Lahovičky – Nádraží Modřany	19 Sep 2009	seasonal	282	61 500
P7	Pražská tržnice – Ostrov Štvanice – Rohanský o.	7 Aug 2015	seasonal	412	113 720
P8	Císařský ostrov – Troja	23 Dec 2017	temporary	846	292 850
TOTAL				3 781	1 169 950

In 2018 there were 8 ferries in operation, transporting 1 169 950 passengers (0.09 % 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 and P8 ferries Pražská paroplavební společnost, a. s., and the remaining four ferries are run by Pražské Benátky, s. r. o.

A significant increase in the number of persons transported (almost precisely twice the amount of 2017, which was 584 940 passengers) was caused by the use of the P5 and P8 ferries (both free) as a substitute for crossings over the Vltava that were missing or being renovated. The P5 ferry, with a slightly altered route, ran from January to mid-October in place of the footbridges being repaired on the railway bridge at Výtoň, while the P8 ferry served as a year-round substitute connection in Troja (from August on, a larger boat was put in place), where construction of a new bridge for pedestrians and cyclists is being prepared.

3.7 Non-PID public transport in Prague

Mass passenger transport outside the PID system is predominantly operated in Prague for special occasions.

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.

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 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 1 168 train connections operated by Czech Railways started, ended or passed through Prague on an average workday in 2018, carrying around 156 990 passengers across the city limits. A 14 % 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	258 806	83 696	103 306	91 819	100 740	46 879	81 342	43 509
Trains per day**	746	233	309	270	323	128	239	137
of those PID	664	233	286	268	277	128	198	137
of those non-PID	82	0	23	2	46	0	41	0

* number of trains starting, ending or stopping

** average workday 2018

Development of number of trains starting and ending at Prague per year (all trains Czech Railway)											
Year		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
number of trains	starting	215 189	217 472	217 481	219 679	214 483	213 973	224 336	229 222	238 542	240 057
	ending	215 598	217 886	217 895	220 098	214 892	214 381	224 764	228 352	236 693	235 102
	total	430 787	435 358	435 376	439 777	429 374	428 353	449 100	457 574	475 235	475 169

Passenger turnover at most important railway stations in Prague in 2018 (only ČD trains)*

Station	Praha hlavní nádraží	Praha Masarykovo nádraží	Praha-Smíchov	Praha-Vršovice	Praha-Libeň	Praha-Vysočany	Praha-Holešovice	Praha-Radotín
Ppl per year (000s)	33 249	10 128	5 526	2 122	3 115	1 4293	2 413	2 279
Ppl per workday	99 026	34 093	18 545	7 458	10 622	4 407	8 408	7 730
of those PID	68 491	34 093	17 696	7 378	9 487	4 407	7 166	7 730
of those non-PID	30 535	0	850	80	1 135	0	1 242	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

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of connections/year	145 000	145 000	150 000	155 000	155 000	170 000	180 000	180 000	180 000
Number of connections/avg. workday	420	420	425	435	450	485	505	510	510
of those international	105	130	145	155	175	230	260	285	285
domestic long-distance	315	290	280	280	275	255	245	225	225
Number of carriers	100	100	100	105	120	125	125	125	110

Other lines connecting Prague with external areas are dispatched and terminated to the greatest extent at bus stations, Na Knížecí, Černý Most, Hradčanská and Zličín (up to 100 connections per day). To a minor extent (aprox 80 connections per day) long-distance buses also leave from terminals Roztyly, Nádraží Holešovice and Nádraží Veleslavín.

With the gradual integration of lines into PID, Central Bohemian Integrated Transport (SID) participates less and less in regional bus transport, their connections being gradually transferred to the PID system. The remaining SID lines that enter Prague are designated by a letter based on the district (A Kladno, B Rakovník, C Beroun, D Příbram, E Benešov, F Kutná Hora) and a number.



Long-range bus connection Flixbus in Trocnovská street

Selected characteristics of other important bus terminals in Prague

	Number of connections per year			Number of connections per average workday		
	International	Domestic	Total	International	Domestic	Total
Černý Most	0	45 710	45 710	0	140	140
Na Knížecí	530	40 630	41 160	2	130	132
Hradčanská	265	39 845	40 110	1	120	121
Zličín	730	31 670	32 400	2	105	107
Roztyly	4 730	20 305	68 125	14	65	79
Nádr. Holešovice	0	19 365	25 035	0	60	60
Nádr. Veleslavín	0	17 945	17 945	0	65	65
Želivského	2 095	0	2 095	6	0	6
TOTAL	8 350	215 470	223 820	25	685	710

4 BICYCLE TRAFFIC

The marked cycle route network in the City of Prague has a total length over 500 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
500.3 km	186.5 km	27.7 km (143 sections)
Cycle pictocorridors	Separate / protected cycle lanes	Shared cycle lanes (+ bus + taxi)
33.7 km	48.5 km / 9.9 km	25.2 km
Bicycle stands (two spots)	Advance stop lines for cyclists	Bicycle crossings
3 594	318 intersections, 1 329 lanes	96 (38 with traffic signals)

New bicycle infrastructure implemented in 2018

Type	Length / number	Type	Length / number
Cycle lanes (V14 / V14 protected)	+1 515 m / 7 555 m	Shared cycle lanes (+bus+taxi)	+1 070 m
Cycle pictocorridors (V20)	-560 m	Bicycle crossings (V8)	+21 (4 SSZ)
Two-way lanes for cyclists	+2 375 m	Bicycle stands (two spots each)	+294

As part of European Mobility Week in September 2018, a new pedestrian and cyclist counter was launched in Prague, referred to as a “totem”.

It is located next to the shared path for pedestrians and cyclists on the embankment Podolské nábřeží by the Vyšehrad cliff and is connected to the nearby counter device.

Cyclists are recorded using induction loops built into the surface of the shared pedestrian/cyclist path using heat sensors.

The recorded values are displayed in real time, with the device also showing the time, date and current temperature. All the measured data can be followed online on the websites www.praha.eu and www.cistoustopou.cz.



The “totem” at Podolské nábřeží

Bikesharing gained in popularity in 2018 in Prague and in the whole Czech Republic. The Czech shared bike system Rekola alone saw 500 % more loans than in 2017.

In autumn 2018, the US company Lime began operating electric scooters in Prague (around 300 vehicles). To use them one must download a mobile app and pay by payment card.

Bikesharing providers actively cooperate with the municipal districts (e.g. offering anonymised data on usage that can help decide where to install bike stands). They also react ad hoc to the situation in the city – for example when the Libeňský most bridge was closed to cars and trams due to its state of disrepair, Rekola had some of their bicycles placed there that could be used to cross the bridge for free (rides under 15 minutes are free of charge).



Bikesharing option during closure of Libeňský most



Velonet bikesharing by Podolská vodárna



Shared bike and pedestrian pass Běchovice – Horní Počernice

In 2018, the following projects have been carried out from the investment projects: bike path along the Košík stream, pedestrian and bike path Koloděje – Újezd nad Lesy and shared bike and pedestrian path Běchovice – Horní Počernice.

The following measures were carried out from the non-investment projects: traffic adjustments located in Broumarská, Ocelkova, Na Zatance, Šeříková – south, nábreží Kpt. Jaroše and Slunná.

In February 2018, Prague City Council approved an update to the general plan for bicycle transport, i.e. the city-wide system of bicycle routes. This general plan is the basis for the work of City Hall institutions and a supplementary document for decisions within the city. By updating it, Prague City Council is showing its commitment to continually improving the conditions for bicycle transport.

Cyclists on Prague Integrated Public Transport (PID)

In the metro it is possible to transport bicycles in the front and back part of each metro car with the exception of the first car behind the driver (max. of two bikes in each such space). Selected lifts can be used to transport bicycles at metro stations marked with a blue bike pictogram – currently Anděl, Bořislavka, Černý Most, Háje, Chodov, Ládví, Letňany, Národní třída, Nemocnice Motol, Palmovka, Pankrác, Petřiny, Prosek, Roztyly, Skalka, and Střížkov.

Bicycles can only be transported on trams on selected stretches heading out of the centre outside of the weekday afternoon rush (14:00-19:00). Bicycles can only be transported in the spots designated for transporting prams (for short cars generally at the back, for articulated trams at one or more spots in the middle). It is possible to transport at most 2 bicycles in each such spot. Before entering and exiting the vehicle, passengers with bikes must signal to the driver, who can refuse such transport.

The transport of bicycles is not permitted on buses (even if they are filling in for trams or metro), except for the 147 line, the AE bus (Airport Express) and the bicycle bus. On the 147 line, which runs the route Dejvická – Výhledy, transport was possible from 24 March to 28 October in 2018, only heading out of the centre. Bikes could only be loaded at Dejvická (transferring from the metro) and V Podbabě (transferring from the ferry) and unloaded at the stops Internacionální and Výhledy.

For passengers with a valid PID ticket (or document for free transport under the PID Tariff), transport of bicycles is free in trains within Prague (zones P, 0 and B), as it is in the metro, trams, the funicular and on ferries, while outside the city limits there is a fee. In the season from 24 March to 28 October 2018, special bicycle cars were added to the S8 and S88 lines for transporting bicycles on non-workdays.

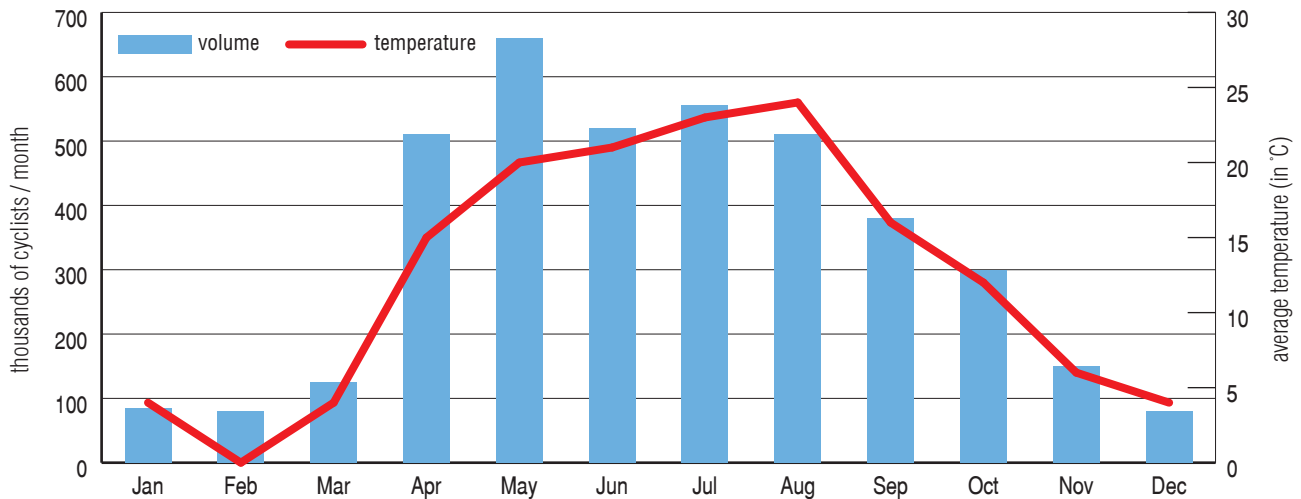
The special “Cyklohráček” train ran during the same period on non-workdays on a new route of Praha hl. n. – Praha-Smíchov north platform – Hostivice – Středokluky – Podlešín – Slaný – Zlonice. This train offers expanded transport of bicycles, a playground for children and games tables. A special bicycle car has priority designation for transport of cyclists.

Before or after taking PID connections it is also possible to store bicycles in lockable bike boxes (by OC Chodov, at the train station in Klánovice, by the Strašnická metro station, by the Prague 10 Municipal Authority) or deposit them at certain P+R lots.

Automatic bicycle counters

Automatic bicycle counters allow for the collection of online data 24 hours a day year-round, thus providing a detailed summary of bicycle traffic at various times of year, as well as changes to volume over the day or week. At the end of 2018 there were 27 locations in operation in Prague. Comparing 2018 and 2017, an overall growth in the volume of bicycle traffic of 2.44 % can be observed. The month with the greatest number of cyclists detected was May.

Annual variation of bicycle traffic 2018 according to automatic bicycle counters

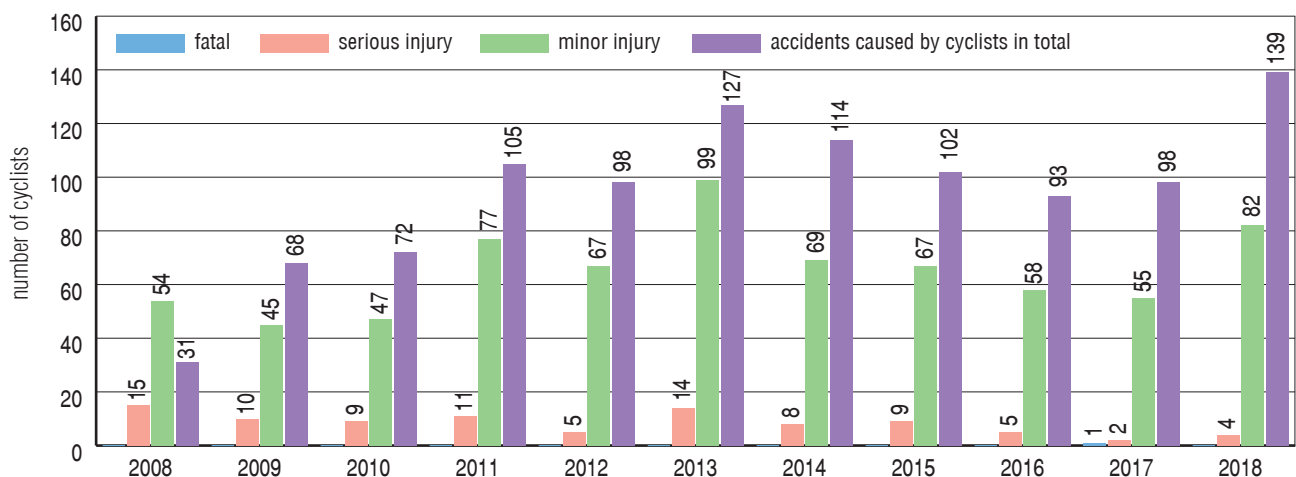


New bike stands at Vltavská



Lime shared scooters

Results of cyclist accidents in Prague 2008–2018 (source Traffic Police Department, City of Prague Police)



5 PEDESTRIAN TRAFFIC

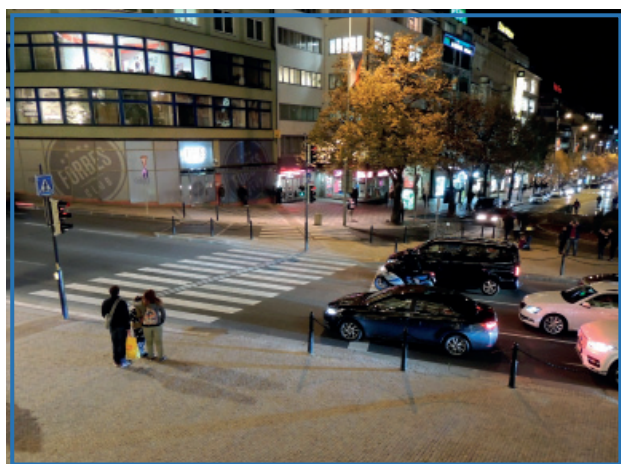
Walking is the most natural and most frequent way for people to get from place to place. Every trip using any means of transport begins and ends with walking. Roughly a quarter of all trips are made solely by foot.

Relatively speaking, the greatest number of trips by foot take place in the central part of the city, particularly within the municipal district of Prague 1.

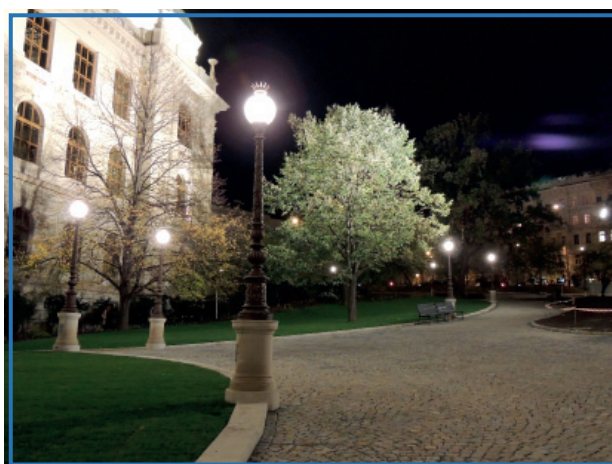
Over the course of November 2018, a study was conducted on pedestrian traffic volume in the centre of Prague outside the tourist season at 50 stations. During the survey over three quarters of a million pedestrians were recorded. The spots where over 2 000 pedestrians an hour passed through on average are presented in the table.

Number of pedestrians at selected profiles in Prague Heritage Reserve (November 2018)	
Location	Average number of pedestrians per hour
Václavské náměstí (Ve Smečkách – Krakovská)	4 320
náměstí Republiky (Na příkopě – náměstí Republiky)	3 931
Václavské náměstí (Můstek – Vodičkova)	3 820
Na příkopě (Nekázanka – Panská)	3 242
Karlův most (Na Kampě – Křižovnické náměstí)	2 748
Karlova (Liliová – Křižovnická)	2 457
Jindřišská (Politických vězňů – Jindřišská pasáž)	2 328
Národní (Charvátova – Spálená)	2 068
Spálená (Národní – Ostrovní)	2 052

A number of projects were realised in 2018 for pedestrians in order to make it more pleasant for them to move around or relax in the city. As part of the “Museum Oasis”, the pedestrian space around the National Museum was expanded, with a new light-controlled crossing being added across Mezibranská at the upper part of Wenceslas Square and the Čelakovského sady park being revitalised and filled with new street furniture (benches, trash bins).



New pedestrian crossing at the top of Wenceslas Square



Revitalised Čelakovského sady

A new surface pedestrian connection was installed at the north bridgehead of Hlávkův most, Slivenec was connected with the street K Barrandovu with a new sidewalk along the street Ke Smíchovu and a completely new mosaic surface was built at one of the most highly frequented pedestrian routes, on the street Na můstku.

Two interesting water features were added to Central Park at Pankrác – a line of fountains and a wading pool.

The surroundings of the I. P. Pavlova metro and tram stops all saw a significant transformation in 2018. The area between the passage from which passengers flow out of the metro station and the tram stop was modified to have a uniform height and was marked as a pedestrian zone.

6 TRANSPORT TELEMATICS AND TRAFFIC MANAGEMENT

The systems for the various forms of transport telematics continued to be expanded and innovated upon in 2018 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 2018, seven new traffic signals were built within the City of Prague, of which three were only temporary. Two separately controlled crossings were removed, along with one that was being run from the sequencer at the nearby intersection at Elsincovo náměstí. The number of sequencers thus increased by 5 to a total of 665. The number of signal-controlled sites on the road network reached 704.

For several years now, a regime of a “flashing yellow phase” has been put in place when renewing and installing lights. This method is used where, due to local traffic conditions, lights are not necessary during low traffic, but pedestrians and the blind can bring regular lights back on for a limited period. Currently over 50 signal-controlled sites make use of this. The percentage of constantly controlled signals in Prague is around 82 %.

The total number of traffic signals on the tram network has not changed, with one being removed and one new one being built. The number of lights with tram priority increased by 9 to 206. Bus priority was implemented at seven sites. 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
665 (by number of controllers)	153	478
On tram network	With tram right-of-way	With bus right-of-way
248	206	238
Number of new, removed and refurbished traffic signals in 2018		
7 new, 2 removed		26 refurbished



New signal 8.951 Zenklova – U Meteoru



Signal 9.611b Česobrodská – crossing by Běchovice stop

In 2018 a total of 26 light-controlled intersections or crossings were refurbished, with two of those sequencers serving for two sites (signals 8.251 and 9.611).

The original intersection at Nuselská – Mendíků was changed to an independent pedestrian crossing during street refurbishing. The signal-controlled crossing across Zenklova by Stejskalova was removed during street and tram track renovations and replaced with a new light-controlled intersection 8.951 Zenklova – U Meteoru.

Development of basic data on traffic signals in Prague														
	1961	1971	1981	1990	2000	2010	2011	2012	2013	2014	2015	2016	2017	2018
Traffic signals total	33	76	339	348	398	578	594	612	626	634	646	658	660	665
Stand-alone crossings	-	9	37	45	57	108	112	118	125	144	146	152	154	153
Centrally controlled	-	-	-	20	116	270	283	294	321	320	440	456	466	478
With tram priority	-	-	-	1	59	145	158	164	174	184	189	195	197	206
With bus priority	-	-	-	-	-	121	144	167	180	200	206	223	232	238

6.2 Control centres

Control centres are systemic nodes for traffic control using traffic light signals. The structure of this in Prague is broken down into several levels. At the lowest level are the individual traffic signals and sequencers, 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), which is located at the public transport Central Dispatching building on the street Na bojišti in Prague 2.

From the UTCC dispatchers can currently control roughly two thirds of all the traffic signals in Prague.

The system of control centres is run by TSK. As of 31 December 2018, eleven Area Traffic Control Centres had been installed in Prague and 478 signals connected to this central level.

6.3 Traffic Information Centre Prague

The Traffic Information Centre (TIC) has been in operation since 1 July 2005 and is the longest serving centre of its type in the Czech Republic. Since 2016 it has been providing continuous operation 24/7/365 under the City of Prague Technical Communication of Roads (TSK). In 2017 the TIC was joined by the City Camera System (CCS). The primary mission of the TIC is to provide traffic information to as broad a spectrum of the travelling public as possible.

TIC dispatchers make sure information is entered 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 (NDIC), Czech Radio and Czech Television. They also run the system of devices for traffic information (DTI), keep track of the differences between automatically generated traffic volumes and the actual situation, reacting to the latter as required, and last but not least monitor alternative sources of traffic information.

Through the DTIs, the TIC provides drivers with current information on traffic levels (1 – 5), traffic accidents, emergencies on the roads, long-term planned closures, and information on traffic regulation in Prague's tunnels.



The UTCC hall and TIC Prague on Na bojišti

It also provides output for the TSK website (www.tsk-praha.cz) and TIC website (<http://dic.tsk-praha.cz>), including continuously updated screenshots from selected camera systems.

TSK also passes along information to be broadcast through RDS-TMC (Radio Data System-Traffic

Message Channel) on the frequency of Czech Radio's Regina DAB Praha station. The system displays the current traffic situation on navigational maps, making it easier to drive around Prague's roads.

6.4 Other transport telematic systems

Other transport telematic systems encompass all those that help monitor the traffic situation on Prague's roads. In particular this includes the camera surveillance systems and systems for collecting traffic information (strategic and spot detectors, weather and parking sensors, and the travel time system).

Also operated in Prague are systems for documenting traffic offences (spot or section measurement of speed or capturing red-light violations). Transport telematic systems also include devices for traffic information or the RDS-TMS broadcast system. The last group comprises systems that support road traffic safety, such as informative speedometers or checking the height of vehicles at places with low clearance.

Camera monitoring systems

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 the Prague Traffic Information Centre (TIC). Overall 851 cameras are available in the television monitoring system, both from TSK's surveillance systems and from the camera monitoring in the Blanka Tunnel Complex.

Camera 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 Blanka Tunnel Complex and linked traffic signals
MKS	1 100	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

We distinguish between several types of camera, chiefly based on their primary purpose. In tunnels there are fixed cameras with a video detection safety function. Using a software definition of potential events that can take place in their field of vision, these cameras can detect a stopped vehicle, a slow-moving vehicle, emerging congestion, an object on the roadway that is blocking traffic, or other potentially dangerous situations such as a pedestrian in traffic, vehicle going the wrong way or reduced visibility in the tunnel (dust, fog, smoke). Not only do these cameras provide an image for online monitoring by UTCC and TIC dispatchers, but also events that trigger predefined automatic reactions in the control system of the tunnel in question.



Television surveillance camera at an intersection



Television surveillance camera in the tunnel

The second type are rotating cameras, which allow operators to rotate or zoom the camera and thus gain an overview of the traffic situation in more distant parts of the monitored road as well. Newer types of such rotating cameras installed in recent projects under the Operational Programme Transport (OPD) can also detect basic characteristics of traffic if the camera is in the default position. Such cameras are located primarily on the City Ring Road and radial roads and are collectively labelled as cameras of the Comprehensive Telematic Monitoring System (CTMS). Stills from traffic cameras are also available on TSK's website <http://unicam.tsk-praha.cz/Discoverer/KTDS> or at <http://www.tskpraha.cz/wps/portal/root/aktualni-doprava/dopravni-kamery>. In 2018 the process of digitisation and renewal of TSK traffic cameras continued. All cameras in the TSK surveillance system are also being integrated into the City Camera System (CCS).

System of traffic information collection

Strategic traffic detectors

Another type of transport telematic device is strategic traffic detectors. We differentiate between strategic loop detectors (induction loops), which are part of the relevant traffic signal, and strategic spot detectors (SDDR) and section detectors (SDDÚ), which are a significant source of traffic data in the City of Prague.

Spot and section strategic traffic detectors		
Detectors	Number	Description
SDDÚ	23	Two portals with cameras designed for collection of data on a section.
SDDR	127	Video detectors placed on lamp posts designed for collection of data at a spot.

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

The system of weighing vehicles while they are in motion (WIM – Weight in Motion) is in place at eight locations in Prague that are heavily trafficked by freight vehicles. The principle of the system is based on measurement of the dynamic effect of individual wheels on the carriageway (pressure sensors). When the vehicle passes, the speed and acceleration or deceleration of the vehicle are also measured. The system furthermore categorises vehicles into classes and, in connection with other WIM locations (reading licence plates), makes it possible to evaluate where vehicles are travelling.

Travel times

In order to inform about current travel times between selected locations, a network of routes with sensors monitoring travel times has been built in the City of Prague. The system collects and encrypts the MAC addresses of passing wireless devices. When these pass through multiple cross-sections on the route, the system obtains the actual time it took. It then provides the statistically analysed data to the public using selected DTIs (27 DTI locations) and the website <http://unicam.tsk-praha.cz/Discoverer/TravelTime3>. In 2018 travel times were measured in this manner at 77 sections, with 6 of those also evaluating travel times for the category of freight vehicles.

Occupancy rate of parking spots for the disabled

Using magnetometric detectors, the occupancy of 54 parking spots reserved for those with physical disabilities (holders of the ZTP or ZTP/P cards) in the central part of Prague is determined. The read online data are sent to a central server, which then provides them in the tied-in “ZTP Parking” app, available for both Android and iOS. As part of this project, inventory was taken of reserved parking spots in Prague 1, 2, 3 and 8.

Weather detectors

The network of weather detectors, which provide data to the telematic systems at the UTCC, include road weather detectors (RWD) and automatic emission monitors (AEM).

Weather detectors – road (RWD)

RWD 28 Sensors monitoring meteorological data useful for both traffic management and for example winter road maintenance.

AEM 12 Sensors monitoring meteorological data including general emission indicators.

Traffic offence telematic systems

A chapter of their own are the telematic systems intended primarily for documenting individual traffic offences. The basis for all traffic offence systems is a close-up camera that can read registration plates. The data acquired in this manner are passed on in a protected manner to the competent department of the municipal or state police for processing. All devices also serve to collect traffic information.

Section speed measurement (MÚR)

Devices for measuring the speed on a road section (MÚR) consist of a pair of cross-sections with cameras that take a picture of vehicles. By identifying the vehicle from its registration plate, geodetically measuring the length of the segment and using time data, the average vehicle speed in the measured section is calculated, reduced by the margin of tolerance, and compared to the speed limit. The system is highly effective in terms of forcing the speed limit to be followed. Since this system was installed in 2006, the number of offences in the given locations fell from a range of 30 to 60 % to a range of around 1 to 5 % of recorded vehicles.

At the end of 2018, speed was being measured in this manner at 59 stretches in the City of Prague. Of this total number, 10 locations are located in Prague's tunnels on the City Ring Road, where they significantly contribute to the flow and safety of traffic.

Spot speed measurement (MOR)

In certain cases the measurement of section speed is also tied in to a location for spot speed measurement (MOR) using cameras at a single cross-section. Spot speed is measured by evaluating signals from a pair of induction loops. A close-up camera with registration plate reading then takes care of registering the offence. As of 31 December 2018, spot speed measurement was being conducted at 38 locations.

Documenting the running of red lights

As part of the applications for registering traffic offences, systems have been installed in Prague for detecting and documenting the running of red lights. As of 31 December 2018, this offence was being recorded at 19 locations. 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 cross the stop line.

Provision of traffic information

Devices for traffic information (DTI)

Serving to directly and indirectly manage and influence traffic in Prague are devices for traffic information – DTIs. The project for building and modernising DTIs in Prague was completed in 2013. Since that year a total of 58 DTIs have been at the disposal of TIC operators and also drivers.

In 2015, the DTIs installed as part of building the Blanka Tunnel Complex were also incorporated into the system, which now numbers a total of 72 information boards meant for traffic information of citywide significance (a further 26 two-line DTIs are installed in Blanka to inform on the current situation in the tunnel).

Through the system that collects current traffic information from the various subsystems, operators of the Traffic Information Centre (TIC) can use text messages on DTIs to inform drivers of various emergencies, closures and restrictions or on the current traffic situation immediately in front of the driver.

In terms of choosing which messages to display, there is a system of priorities and orders that takes into account the significance of an emergency and its location relative to the DTI in question.

Telematics systems for higher traffic security

This paragraph mentions telematics systems intended to solve the issue of improving traffic safety in concrete locations with concrete measures. These systems are often implemented only locally. The most numerous of such systems is an informative speed measurement. An LED panel shows the road users their speed as measured by a radar, which leads to an increase of complying with the maximum allowed speed limit.

In 2018, a height checking system was installed in the street Dukelských hrdinů by the railway bridge Prague - Kladno. Its purpose is to prevent the tearing down of the overhead lines in the low passageway leading to Výstaviště. The system will warn drivers of exceeded height limit by blinking lights. Telematics systems do not serve just vehicles and their drivers but pedestrians as well.



Height checking system (Dukelských hrdinů)



Enhancement of pedestrian crossing (Jugoslávských partyzánů)

An enhancement of pedestrian crossings has been installed in nine places in Prague. LED signals are installed in the street in the axis of the crossing. These start blinking the moment a pedestrian enters the waiting space in front of the crossing, signaling the presence of a pedestrian to the upcoming drivers.

7 PRIORITY FOR PUBLIC TRANSPORT VEHICLES

Implementation of priority for public transport vehicles has been ongoing in Prague since the beginning of the 1990s. 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
248 (100.0 %)	206 (83 %)	67 (27 %)	139 (56 %)
2018: +0	2018: +9	2018: -2	2018: +11

* 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

The percentage of signal sites in Prague with some form of tram preference exceeded 83 %.

Bus priority at traffic signals – basic data

With detection for bus priority	With active* bus detection	With passive* bus detection
238 (100.0 %)	228 (95.8 %)	10 (4.2 %)
2018: +7	2018: +6	2018: +1

* 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.

Intersections where detection for bus priority was installed in 2018

0.624	Průmyslová – rampa Jižní spojky sever
0.735	Kutnohorská – malé OC
3.301	Husitská – Trocnovská
3.302	Husitská – Prokopova
4.443	Senohrabská – Hlavní
4.444	Lešanská – Hlavní
6.996	Vlastina – přechod Žukovského (P)

(P) ... passive detection



Traffic signals on Husitská – Trocnovská intersection

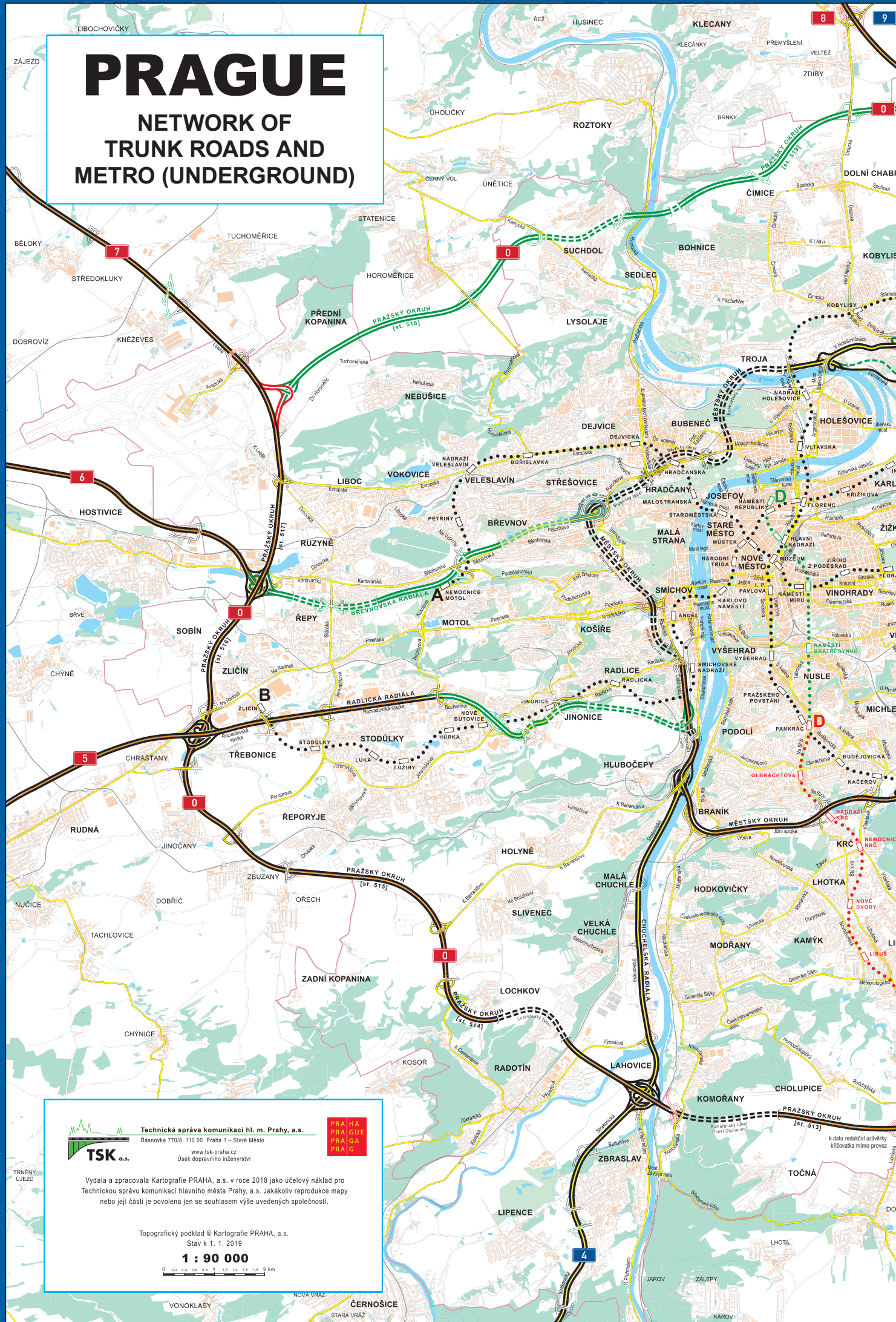
Traffic signals equipped with detection for bus priority on bus network

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018
Signals w/bus detection	8	121	144	167	180	200	206	223	232	238

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.

PRAQUE

NETWORK OF TRUNK ROADS AND METRO (UNDERGROUND)



Technická správa komunikací hl. m. Prahy, a.s.
Rásovkova 770/8, 110 00 Praha 1 – Staré Město
www.tsk-praha.cz
Úsek dopravního inženýrství

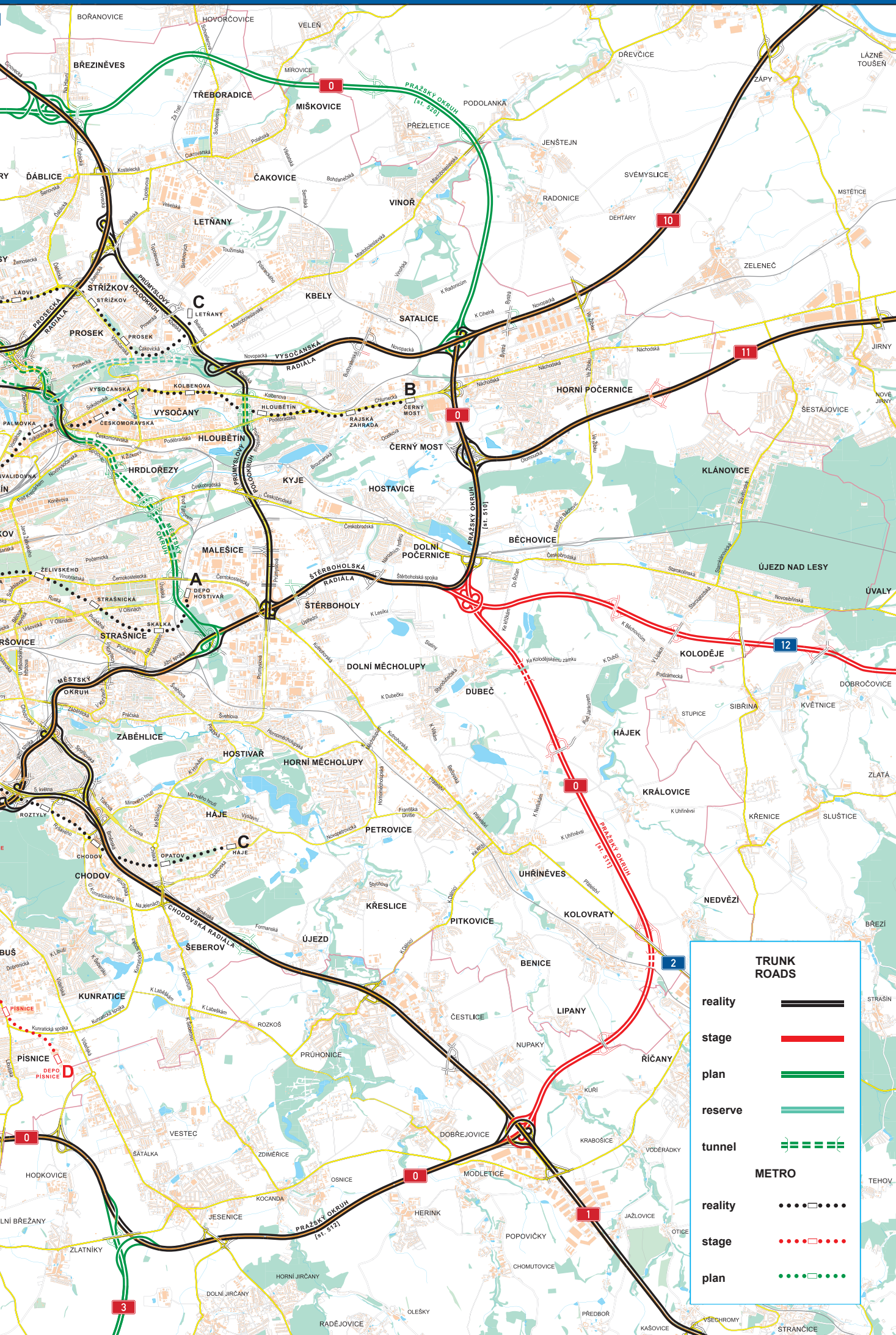


Vydala a zpracovala Kartografie PRAHA, a.s. v roce 2018 jako účelový náklad pro
Technickou správu komunikací hlavního města Prahy, a.s. Jakákoliv reprodukce mapy
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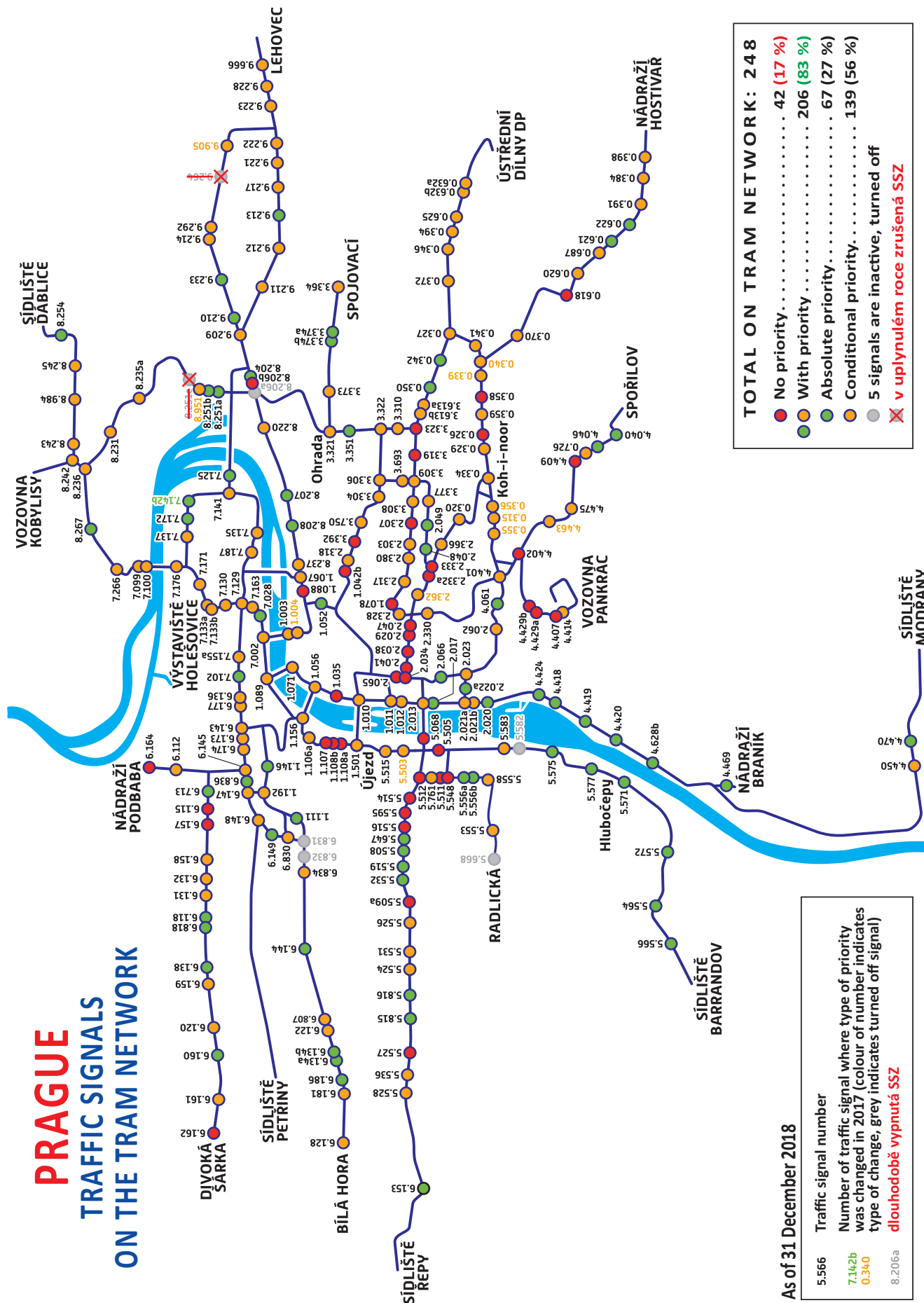
1 : 90 000

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



PRAGUE

TRAFFIC SIGNALS ON THE TRAM NETWORK



As of 31 December 2018

5.566	Traffic signal number
7.142b	Number of traffic signal where type of priority was changed in 2017 (colour of number indicates type of change, grey indicates turned off signal)
0.340	
8.206a	dlouhodobě vypnutá SSZ

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 a classic concrete kerbstone, built into 50 m of carriageway on Bělehradská ulice before the intersection with Anglická in 1996. The installation of this element to prevent the frequent cases of cars entering the tram lane proved successful and, starting in 1997, concrete separating thresholds began to pop up in other spots as well. The only difference was the design became more rounded, and later also narrower, so that vehicles, in particular emergency vehicles, could drive over them more easily.

At the end of 2018, raised concrete dividers along tram tracks had reached a total length of approximately 12 870 metres. Last year around 320 metres of such dividers were added. All the changes in the length of dividers took place during refurbishing of Zenklova, with 367 m added and 47 m being replaced with kerbing.



New dividers installed on Zenklova ulice



New end of dedicated lane on Tupolevova ulice

Bus priority – dedicated lanes

Aside from increasing the flow of public transport, dedicated BUS lanes on tram tracks also ensure it is easier to transfer between buses and trams. Other dedicated lanes on roads are generally made in areas where bus lines are disproportionately held up by congestion and the width of the road allows for a separate bus lane to be instituted. At the end of 2018, the length of dedicated bus lanes had reached approximately 46 580 metres, with 32 435 metres of that on roads and 14 145 metres on tram track bed.

The most significant dedicated lane in the past year was installed on Tupolevova heading into the centre on a section 300 metres long. At the same time the form of the end of the dedicated lane on the same street heading out of the centre was modified. Originally it was the dedicated lane that continued onto the roundabout as the through lane. When traffic became congested however, other vehicles would merge into the dedicated lane quite a ways before the intersection, which considerably reduced the effect of speeding up bus traffic. The new standard for terminating dedicated lanes before roundabouts is now the opposite. The non-dedicated lane leads into the intersection as the through lane for all traffic and the dedicated lane extends next to it as far as possible up to the point where the two lanes merge into one before the roundabout. This speeds up bus traffic without affecting the capacity of individual automobile traffic.

Another important area is Hornoměřolská by the Řepčická stops, where 160 m of dedicated lane was installed heading into the centre. Smaller sections were also implemented on Vysočanská and Strakonická and on Nábřeží Kapitána Jaroše.

8 ROAD TRAFFIC SAFETY

8.1 Traffic accidents

In 2018 there were 22 767 accidents recorded in Prague (-1 % compared to 2017), with 31 casualties (+82 %) and 2 347 persons injured (+11 %). There were 684 accidents involving pedestrians with 25 persons killed (+127 %) and 621 injured (+1 %).

The decisive majority of accidents were caused by drivers (22 068 of 22 767 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 385 (-3 %).

Number, impact on health and main causes of traffic accidents in Prague				
	2016	2017	2018	Dif 18/17 (%)
Number of accidents	22 876	23 032	22 767	-1
Number of fatal injuries	21	17	31	+82
Number of serious injuries	194	156	182	+17
Number of minor injuries	1 983	1 951	2 165	+11
Number of accidents with injury	1 839	1 765	1 955	+11
Number of accidents without injury	21 037	21 267	20 812	-2
Number caused by the driver	22 206	22 329	22 068	-1
due to failure to keep proper distance	4 541	4 427	4 097	-7
lack of due care and attention	2 785	2 317	2 168	-6
red-light violation	309	339	323	-5
failure to yield in violation of a traffic sign	1 162	1 105	1 042	-6
failure to yield when making a left turn	671	764	734	-4
failure to yield when passing from lane to lane	1 772	1 827	1 875	+3
exceeding the speed limit	2	3	0	-100
failure to adapt speed to density of traffic	96	102	101	-1
failure to adapt speed to vehicle condition	114	133	119	-11
failure to adapt speed to road conditions (ice, potholes, wetness, mud, etc.)	722	613	384	-37
failure to adapt speed to road (turn, width, decline, incline, etc.)	185	165	173	+5
Caused by road defect	8	22	5	-77
Caused by pedestrian	302	301	303	+1
Caused by cyclist	93	98	139	+42

The basic accident rate trends in 2018 can be characterised by a slight drop in the number of recorded accidents in comparison with 2017, marked growth in the number of fatalities, an increase in persons with serious and minor injuries, and a slight decline in the number of accidents involving injuries.

Assessing the long-term evolution of recorded accidents in Prague, it follows that from the 1960s through the 1980s, the trend was relatively positive. The number of accidents corresponded to the development of traffic volume, or even increased at a slower rate than traffic volume. In the 1990s the general tendency of development reversed to become quite negative, with traffic accidents starting to increase more rapidly than the volume of traffic. This led to an increase in the risk of accident expressed by the indicator of 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 growth of automobile traffic. The relative accident rate has also decreased, by 58 % in 2018 compared to the year 2000. In 2018 the Prague-wide average was 3.1 recorded accidents per million vehicle kilometres travelled.

An interesting indicator is the division of relative accident rate by road type. This breakdown confirms that while the City Ring Road and Prague Outer Ring Road along with the radial roads transport the greatest proportion of traffic volume in Prague, they have a 3 times lower relative accident rate compared to the Prague-wide average.

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 to obligation to report an accident to the police. Traffic accidents without injury or damage to third party property have only needed to be reported where the material damage clearly 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

Despite the unfavourable increase in the number of fatal, serious and minor injuries in comparison with 2017, from a long-term perspective the evolution of number of injuries in traffic accidents can be viewed more optimistically.

A positive trend in traffic safety remains a considerable reduction in the number of fatal, serious and minor injuries in traffic accidents over the past 18 years, this despite the ongoing growth in automobile traffic in the city. The overall number of injuries in traffic accidents has fallen from 3 861 in 2000 to 2 378 in 2018, i.e. by 38 %, while in the same period automobile traffic in Prague has risen 38 %.



An accident at the intersection Bolzanova – Opletalova

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 28 years, automobile traffic in the city has risen to triple 1990 levels (by 215 %), while the number of injuries in traffic accidents has fallen 27 % (from 3 269 injuries in 1990 to 2 378 in 2018), covering all kinds of injury – fatal, serious and minor.

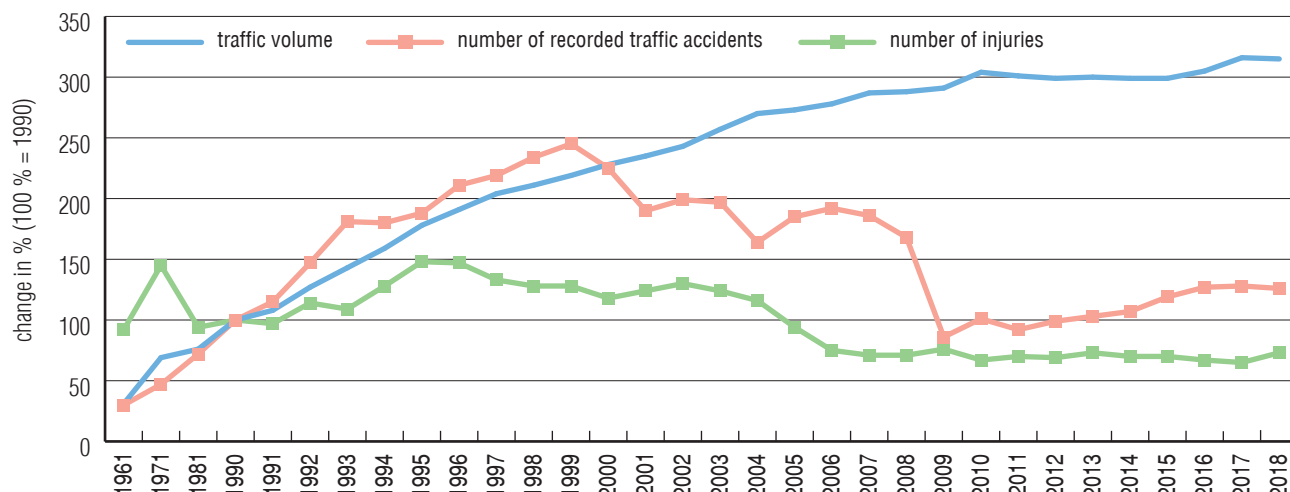
Number of traffic accidents, injuries and relative accident rate in Prague										
Year	Total accidents		Fatal injuries		Serious injuries		Minor injuries		Relative accident rate	Traffic volume (%)
	number	%	number	%	number	%	number	%		
1961	5 495	30	63	69	580	157	2 361	84	7.3	31
1971	8 496	47	123	135	567	154	4 046	144	5.1	69
1981	13 064	72	81	89	401	109	2 572	92	7.1	76
1990	18 024	100	94	100	369	100	2 806	100	7.5	100
2000	40 560	225	80	85	521	141	3 260	116	7.4	228
2010	18 190	101	29	31	279	76	1 893	67	2.5	304
2011	16 572	92	39	41	279	76	1 955	70	2.3	301
2012	17 795	99	26	28	236	64	2 009	72	2.5	299
2013	18 593	103	29	31	228	62	2 116	75	2.6	300
2014	19 306	107	20	21	206	56	2 070	74	2.7	299
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
2017	23 032	128	17	18	156	42	1 951	70	3.2	316
2018	22 767	126	31	33	182	49	2 165	77	3.1	315

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.

100 % = 1990 levels

Accidents, injuries and traffic volume in Prague 1961–2018 (whole road network, annual total)



8.2 Traffic education

Traffic education functions as a significant preventive element in terms of traffic safety for children, youth and adult road users.

In terms of educating children and youth, this primarily concerns support for child traffic playgrounds (CTPs). A whole range of traffic education programmes takes place at these with the goal of boosting the effectiveness of traffic education at schools (traffic education is enshrined in the curriculum for the 4th grade at primary schools).

Central to this was education at CTPs, as well as the programme for beginning cycles (the Young Cyclist Traffic Competition), traffic educational programmes for children and youth, interactive children's theatre shows focused on traffic education, and more. Around CZK 2 million was drawn for traffic education for children and youth in 2018.

In 2018, 8 CTPs where children were taught year-round were in operation. Education was resumed at the CTP in Prague 7 following renovations in September 2018, with a similar situation occurring at the newly built CTP by the Plamínkové Primary School in Prague 4.

In the past year, around 56 000 pupils underwent organised traffic education at Prague's traffic playgrounds, of those 10 256 completed the traffic education under the Thematic Plan of the Czech Ministry of Transport.



The programme for beginning cyclists (the Young Cyclist Traffic Competition), which is held by the Ministry of Transport in cooperation with the Ministry of Education, Youth and Sport, consists of four parts: tests on the rules of the road, a practical road test (in Prague the CTPs are used for this discipline), a skill test (a practical ride around various obstacles) and first aid knowledge. This event is primarily focused on students in their senior years of primary school (ISCED 2 – grades 6-9).

The winning teams progressed through district, Prague and national rounds, the latter taking place in Brno, to the international competition held in Budapest. Seven district rounds and one regional round were organised.

62 interactive children's theatre performances of "The Fairytale Traffic Light" and "Aunt Berta's Bike", intended for the youngest age groups, were presented on the grounds of the Police Museum. In 2018, five performances of the "Fairytale around an Intersection" also took place there. Around 6 000 children saw these performances.

A total of seven safety drives for the driving public took place in 2018, 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 for traffic education methodologists at schools, CTP employees, and for prevention specialists at the Police of the Czech Republic.

Another element of traffic education is providing the driver training that every employer is required to ensure within the meaning of the Labour Code for employees that drive a business or personal vehicle of up to 3.5t while carrying out their work. In 2018, 1 290 people went through this training.

8.3 Measures to increase traffic safety

In 2018, a total of CZK 68.5 million was spent under the BESIP (road traffic safety) budget on implementing measures to increasing safety on the City of Prague road network. This included funds earmarked for minor structural modifications, modifications to traffic markings, installation of traffic devices and preventive programmes. Important modifications were performed independently of investment projects and road maintenance.

An amount of CZK 65.0 million was drawn from the City of Prague budget for capital expenditures (construction of structural speed humps, extra lighting at pedestrian crossings and other primarily structural measures).

Other non-structural traffic safety measures, in particular by schools and pedestrian crossings (modifications to pedestrian crossings including carriageway surface roughening, assembled traffic humps, adjusting signage, installing road mirrors, crash barriers, posts and railings, information on current speed), were realised under current expenditures at a cost of CZK 3.5 million.



Dividing island at Plukovníka Mráze – Gercenova



Speed hump in front of Kořenského Primary School

Part of the funding for 2018 was used to cover the costs associated with drawing up and discussing project documentation. From among the planned projects, we can mention dividing islands and other structural and non-structural modifications.

No important transport works that would cause fundamental changes to traffic organisation on the City of Prague's roads were put into operation in 2018.

Trial operation of the Blanka Tunnel Complex (BTC) continued, along with associated minor short-term changes to traffic organisation during the night-time. Adjustments to the traffic regime on the street V Holešovičkách continued, ensuring smoother merging of vehicles from "Nová Povltavská" when exiting by the return ramp from the Bubeneč Tunnel, as did preliminary work on instituting two lanes on the ramp in question.

Over the course of 2018, long-term and short-term changes to traffic organisation predominantly took place on important roads in connection with projects whose investors were mostly the City of Prague Technical Administration of Roads and the Prague Public Transport Company. The flow of traffic on Prague's roads was also impacted by traffic restrictions caused by the state of disrepair of certain bridge structures.

The greatest reduction in traffic flow in 2018 was due to the traffic measures on the streets Zenklova and Husitská. Construction on Zenklova between Bulovka and Palmovka with a complete closure lasted almost three quarters of a year. The detours led to roads with existing heavy traffic (V Holešovičkách, Povltavská). Ongoing maintenance of Husitská in the section Trocnovská – Tachovské náměstí forced a partial closure of this road, which had a negative impact on Seifertova in particular.

In the eastern sector of the city, traffic was complicated by refurbishing of the Štěrboholská spojka, which is a temporary replacement for the Prague Outer Ring Road. In the section ČSPH MOL – Průmyslová, traffic was routed in both directions in a reduced number of lanes. At roughly the same time, mostly in the summer, a project of refurbishing the street Českobrodská took place, with traffic partially rerouted along detours.

In the Prague 1 Municipal District traffic was impacted by the repairs to Keplerova in the section Pohořelec – Jelení and to Mariánské hradby in the section Chotkova – Jelení. Both works took place with complete closures to these roads. The summer road resurfacing on Jiráskův most also had an impact on traffic in the city centre.



Road resurfacing on Jiráskův most



Traffic on K Barrandovu during ongoing maintenance

In the southwest sector of the city, traffic was complicated by ongoing maintenance on the road K Barrandovu in the section K Holyni – Pražský okruh and sewer repairs on Strakonická in the section Dostihová – Výplová. In both cases traffic was routed along a reduced number of lanes.

Significant changes to the traffic regime were realised during construction of the roundabout at Libušská – Kunratická spojka, on the street Patočkova during carriageway and sidewalk refurbishing (traffic was routed along a single lane on half the road) and on Ústecká during continual road maintenance.

Traffic in Prague was no less severely impacted by the discovery that Libeňský most was in disastrous condition, with motor and tram traffic being completely stopped at the start of the year. Following inspection measurements, trams were allowed to run (but were prohibited from passing next to each other at certain spots), as were automobiles with a maximum weight of 6 tonnes. At the end of the year, after the disrepair of the tram junction bridge at Vltavská was discovered, all traffic was first stopped on the bridge itself and underneath it, then after structural securing tram traffic was re-allowed first under the bridge, and subsequently limited other traffic was also allowed on the bridge.

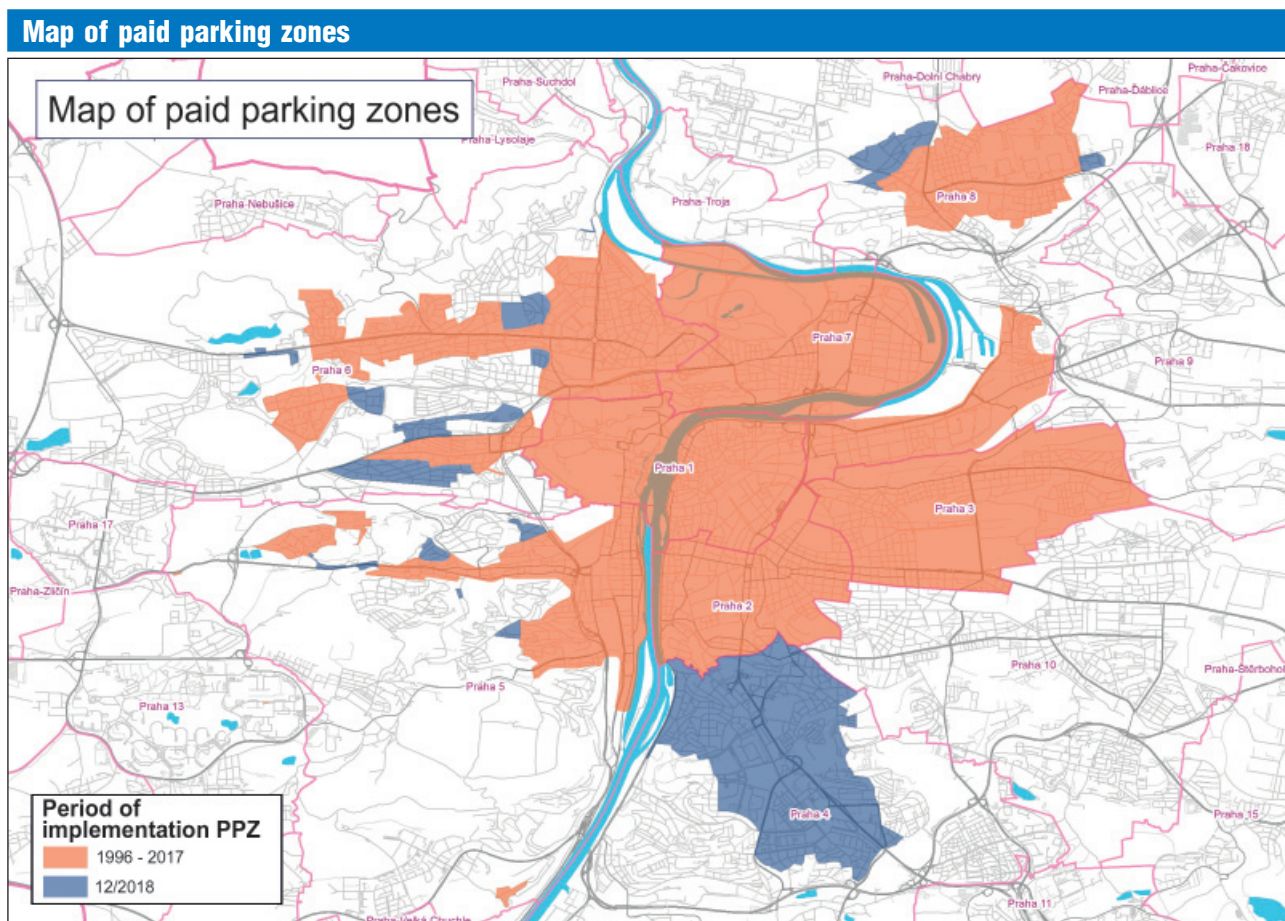
10 PARKING

10.1 Parking in areas with paid parking zones

In 2018 the gradual transition from the paid parking zones (PPZ) operated under the original concept over to the new concept was completed. Starting 1 February the zones in Prague 3 and Prague 7 switched to the new concept. With this, the era has ended when drivers had to either have a valid parking pass stuck to their windshield (like a motorway vignette) or a parking machine slip displayed in the case of visitor parking. Parking is now tied to a vehicle's registration plate. Payments, records and enforcement of the regime is ensured electronically using a central information system.

As of 1 July, PPZs were significantly expanded in Prague 4, and also over the course of the year in parts of the Prague 5, 6 and 8 districts. The purpose of expansion is to simplify parking for residents over visitors, to limit individual automobile traffic and thus make public transport more advantageous, which will calm traffic in the individual areas. After PPZs were introduced in the new areas, there truly was a drop in vehicles on the individual streets, but the parking problem shifted primarily to the streets just beyond the boundaries of the PPZ. For this reason the individual municipal districts are planning to further expand PPZs.

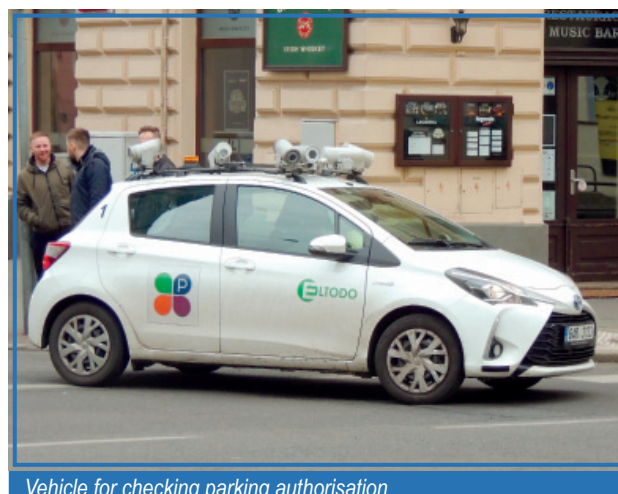
Over the course of the year, owners of hybrid vehicles gained the option of parking in all PPZs around Prague for CZK 100 a year (just like owners of electric vehicles). To gain this right it is not even necessary to have permanent residence within the City of Prague. Hybrid cars must however meet the conditions that ten years have not passed since the vehicle was first registered, the power of the installed combustion engine does not exceed 135 kW and the vehicle is capable of driving exclusively on electric power (i.e. a plug-in hybrid).



Zones are divided into blue, purple and orange (see table Type of Zones). Residents/subscribers gain authorisation to park in the zone of the relevant district if they meet the entry conditions (inhabitants with permanent residence and businesses with their registered address or branch in the PPZ) and by paying the applicable fee.

Visitors can either pay using parking machines, where they enter the registration plate number of their vehicle, or using a “virtual parking meter”, which means paying over the internet using a web app. Parking machines allow for payment by card and are powered using solar panels. Visitors can also park in the resident (blue) zones, but for a maximum of 3 hours and they must pay using the virtual parking meter.

Parking is checked in the form of a monitoring system. A vehicle with a monitoring device drives through the zones and checks the validity of parking passes based on registration plates and data from the central information system. While implementing PPZs, zones with reduced speed were also instituted in certain areas, which made it possible to increase the number of parking spots while also calming traffic.



Vehicle for checking parking authorisation

Types of PPZ in the centre of Prague			
	Blue zone (residents)	Purple zone (mixed)	Orange zone (visitors)
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; combination of users to have more balanced use of parking 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.

Parking of vehicles for persons with ZTP or ZTP/P level physical disabilities and a parking permit is free in PPZs if they use the reserved spots marked with “P RÉSERVÉ” (IP12 + O1 and V10f). For some of these spots there is a mobile app available that informs whether a specific parking spot is occupied. An overview of reserved spots in map form with notes is available at www.mapapristupnost.cz. The web portal www.parkujvklidu.cz was set up to inform the public on details about parking.

Number of spots and parking machines in areas with PPZs – as of December 2018												
	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-13	P-16	P-22	Celkem
Blue zone (residents)	6 078	7 303	10 010	8 225	4 682	13 079	6 545	9 507	0	0	0	65 429
Purple zone (mixed)	1 930	4 212	4 344	7 370	4 710	7 836	2 127	4 938	0	0	0	37 467
Orange zone (visitors)	0	0	0	212	207	5	554	94	56	18	120	1 266
Other	656	605	593	779	573	977	412	582	5	2	6	5 190
TOTAL	8 664	12 120	14 947	16 586	10 172	21 897	9 638	15 121	61	20	126	109 352
Number of parking machines	91	126	123	142	111	189	94	101	2	1	3	983

Further parking spots are found in the broader centre in public garages (see table), private garages or in courtyards (approximately 11 000 spots in the heritage reserve). Certain public garages also offer the option of charging electric vehicles.

Počty stání ve vybraných veřejných hromadných garážích v oblasti PPR a nejbližším okolí					
District	Name and address	spots	District	Name and address	spots
Prague 1	Palladium (náměstí Republiky)	1 000	Prague 3	Žižkovská věž garages (Mahlerovy sady 1)	100
	Florentinum (Na Florenci 19)	50		Atrium Flora (Jičínská)	800
	Pařížská (Pařížská 30)	170	Prague 4	Arkády Pankrác	1 100
	OD Kotva (entrance from Královská)	600		Congress Centre (Pankrácké náměstí)	850
	Millennium Plaza (V celnici 10)	440	Prague 5	Shopping centre (Kartouzská)	2 700
	Wilsonova (Hlavní nádraží)	310		Anděl City (Radlická and Stroupežnického)	300
	Opletalova (Opletalova 9)	90	Prague 6	Zlatý Anděl (Bozděchova)	110
	Rudolfín (náměstí J. Palacha)	460		Prašný most	340
	Slovan (Wilsonova 77)	470	Prague 7	Letná	800
	AAA Parking Grand (Na Florenci 29)	100		Vltavská (Heřmanova)	100
Prague 2	National Theatre (Ostrovní 1)	180	Prague 8	Hilton (Pobřeží 1)	340
	Václavské garáže (Václavská 18)	120		3D Parking (Křižíkova 44)	110
TOTAL			11 640		

In July, garages at Prašný most were opened. These mass garages were built as part of construction of the Blanka Tunnel Complex and offer 340 parking spots, of those roughly one third being designated for residents of Prague 6.

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).

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 method of combined transport means for the city however is an increased demand for parking around public transport stations. For this reason it is important to systematically expand and maintain the network of P+R parking capacity 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
20 (17 locations)	3 754 spots	2 869

The system of P+R lots has been in operation in the capital since back in 1997. These catchment lots are conceived as public and are intended for the parking of passenger vehicles. There are 13 paid P+R lots (with regulated operating hours) available under the system and seven free unguarded lots (with a regulated

parking duration of max. 12 hours). The parking system and lot staff are only present at the paid P+R lots; usage of the free P+R lots is not tracked.

Spots reserved for the basic function of the P+R system and vehicles parked monthly (October)							
Lot	Number of spots	Cars parked monthly		Lot	Number of spots	Cars parked monthly	
		Oct 2017	Oct 2018			Oct 2017	Oct 2018
Běchovice	92	-	-	Nové Butovice	57	2 154	-
Černý Most 1	294	10 973	11 357	Písnice*	95	8	-
Černý Most 2	131	3 360	4 484	Radotín	33	700	731
Depo Hostivař	169	5 215	6 229	Rajska zahrada	88	2 441	2 483
Holešovice	74	3 459	3 831	Skalka 1	63	1 473	2 030
Chodov	653	22 098	21 842	Skalka 2	74	-	-
KCP*	260	-	1 074	Švehlova*	121	2	-
Kotlářka*	181	100	-	Troja**	269	-	-
Ládví	78	2 187	20 063	Zličín 1	83	3 880	3 840
Letňany	633	20 063	22 835	Zličín 2	61	2 730	2 832

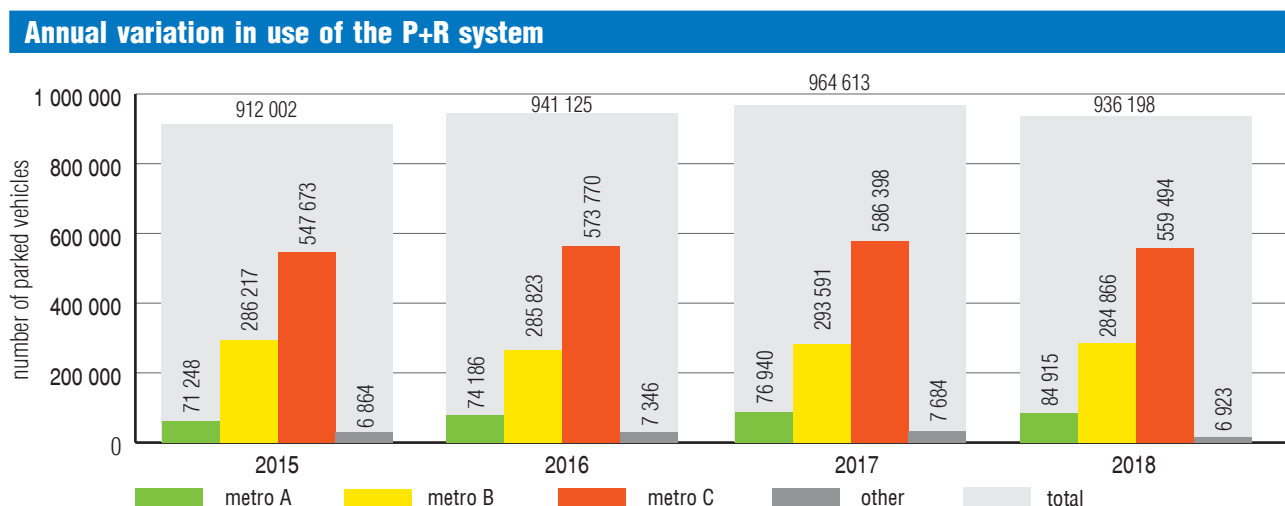
* in operation from 1. 10. 2018 ** in operation from 2. 3. 2018

Operating hours and fee			
P+R lot	Operating hours	Daily fee	Rule violation *
Kongresové centrum Praha	4:00-1:00	90 Kč	210 Kč
Černý Most 1 and 2, Depo Hostivař, Holešovice, Chodov, Ládví, Letňany, Radotín, Rajska zahrada, Skalka 1, Zličín 1 a 2	4:00-1:00	20 Kč	100 Kč
Běchovice, Kotlářka, Nové Butovice, Písnice, Skalka 2, Švehlova, Troja	unlimited	free of charge	possibility of a fine

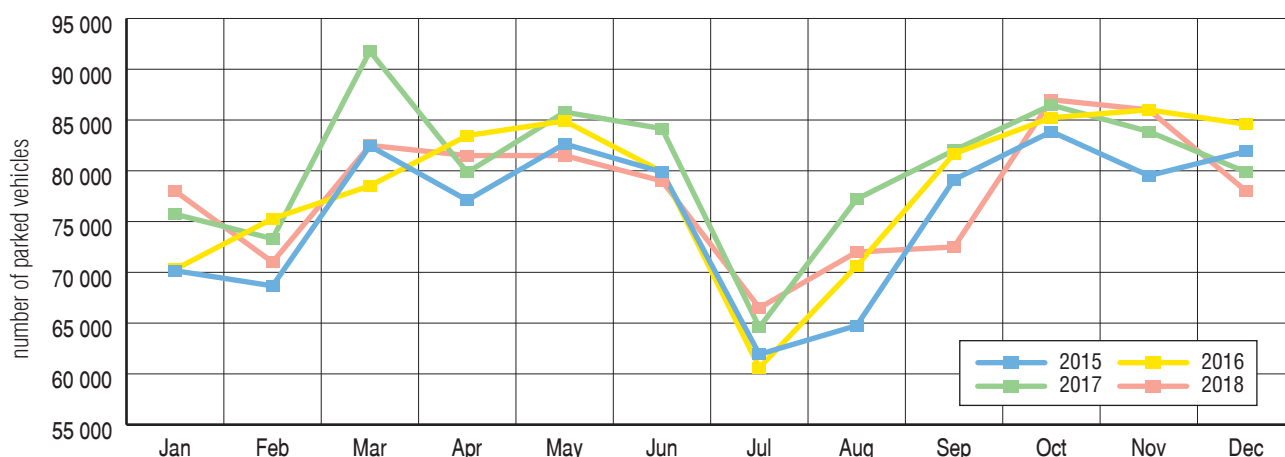
An additional possibility of online payment of parking fees (MPLA.cz) via registered payment card numbers (Visa, MasterCard) or CCS fuel cards was introduced at P+R Depo Hostivař, P+R Ládví and P+R Letňany.

* E.g. leaving a transportation device at the lot outside the operating hours

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 (3509 spots), spots permanently reserved for vehicles transporting a person with a serious handicap – marked in accordance with the Act on Land Roads (150 spots) and spots for other purposes or residents with a valid contract on long-term parking of a vehicle (88 spots).



Annual variation in use of the P+R system



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

Parking of a bicycle during the P+R operating hours is free of charge. Stands for at least four bicycles are available at the P+R lots P+R Černý Most 1, Depo Hostivař, Holešovice, Ládví, Letňany, Nové Butovice, Radotín, Rajska zahrada, Skalka 1 and Zličín 1.

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 Petržilkova, Skalka 1 and 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 Rajska 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. For the P+R Petržilkova lot, which was only operated a short time, only 46 of the 48 spots were actually used for this purpose.

Economics of operating the P+R lot system (amounts in the thousands of CZK before VAT)			
Year	Operating income	Operating costs	Economic balance
2015	15 950	29 025	-13 075
2016	16 284	24 630	-8 346
2017	16 834	22 034	-5 200
2018	16 935	22 195	-5 260

Source: TSK and Prague Public Transport Company

Marked improvement of the operating balance of the P+R system in 2016–2018 was primarily due to the selection of a new operator of the P+R lots managed by DPP.

10.4 Kiss and Ride points (K+R)

K+R “Kiss and Ride” points allow for short-term stopping of vehicles 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” with the help of a vertical “K+R Parking Lot” sign (IP13e). Variants have the additional text “MAX 3 min”, “MAX 5 min” or for the new spots near the Praha-Radotín train station “MAX 10 min”.



IP13e

Currently there are 39 lots of this type available by public transport stops and stations within the City of Prague with a total capacity of 134 spots. Other spots of the K+R quasi-type near schools and public offices are not part of the above numbers.



K+R Radotín (Věštiná)



K+R Vypich – heading into the centre

In 2018 the number of K+R stopping points increased: on Evropská in front of Hotel Diplomat in connection with the Dejvická tram and metro stop, and in the Prague – Radotín district on the street Věštiná near the Praha-Radotín railway station. Here it is possible to use the K+R spot on weekdays from 7:00 to 18:00 for a maximum duration of 10 minutes.

With the completion of construction at the Chodov shopping centre, the K+R spots in shopping centre underpass on Roztylská were renewed. The newly installed vertical traffic sign does not meet the current requirements for traffic signs under the legislation and will be replaced. A similar issue can be found on the street Makovského heading into the centre by the Slánská tram stop. On Vinohradská by the Želivského metro station heading into the centre, the traffic sign for the K+R point continues to be invalid.

K+R points in Prague		
into centre		out of centre
🚗A Bořislavka (Evropská)	🚗A Náměstí Míru (náměstí Míru)	🚗B Černý Most (Chlumecká)
🚗A Dejvická (Evropská)	🚗A Nemocnice Motol (Kukulova)	🚗 Hostivař (U Hostivařského n.)
🚗A Dejvická (Evropská hotel Diplomat)	🚗B Nové Butovice (Bucharova)	🚗A Hradčanská (Milady Horákové)
🚗B 🚗C Florenc (Sokolovská)	🚗C Opatov (Chilská)	🚗C Chodov (Roztylská)**
🚗C Háje (Opatovská)	🚗A Petřiny (Na Petřínách)	🚗C Kačerov (Michelská)
🚗C Háje (U Modré školy)	🚗C Prosek (Prosecká)	🚗C Letňany (Beladova)
🚗 Hostivař (U Hostivařského n.)	🚗C Prosek (Vysočanská)	🚗A Nemocnice Motol (Kukulova)
🚗A Hradčanská (Milady Horákové)	🚗B Radlická (Radlická)	🚗C Opatov (Chilská)
🚗C I. P. Pavlova (Legerova)	🚗 TRAM Řepy (Makovského)	🚗A Petřiny (Na Petřínách)
🚗C Kačerov (Michelská)	🚗C Vltavská (nábr. Kpt. Jaroše)	🚗B Radlická (Radlická)
🚗C Kobylisy (Nad Šutkou)	🚗 TRAM Vypich (Bělohorská)	🚗 Radotín (Vrážská)
🚗C Ládví (Střelnická)	🚗 TRAM Zahradní Město (Švehlova)	🚗 Radotín (Věštiná)
🚗C Letňany (Beladova)	🚗 TRAM Želivského (Vinohradská)*	
🚗A Nádraží Veleslavín (Evropská)		

* temporarily invalid

** temporarily out of service due to construction of Chodov shopping centre addition

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), Technická správa komunikací hlavního města Prahy, a.s. (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 2018 included the following:

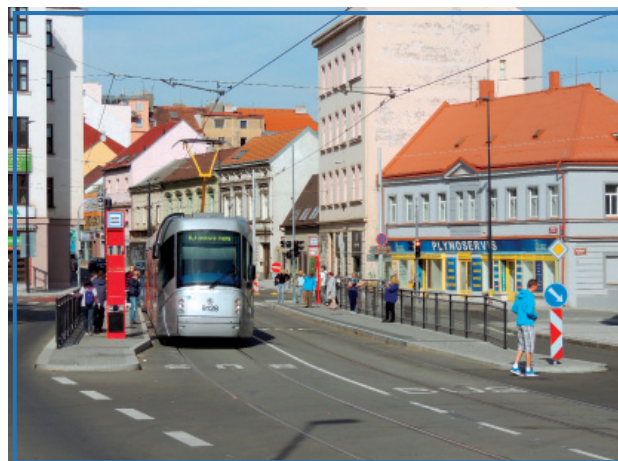
Refurbishing of Zenklova (TSK, DPP)

This project included refurbishing of 1.6 kilometres of tram track refurbishing (Elsnicovo náměstí – Bulovka), carriageway and pavement refurbishing at a length of 1.2 kilometres (Elsnicovo náměstí – Vosmíkových stop) and renovation of the bridge over the Rokytká. The water management operator Pražská vodohospodářská společnost conducted renovations on the sewers and water pipes. Work was also done for example on both high voltage and low voltage cables, public lighting and traffic signals. In order to reduce excess noise, the carriageway structure was altered from paving stones to asphalt. Another component of the refurbishing was modification of drainage and repairs to sidewalks, which now use the Prague mosaic surface, and cyclist routing and wheelchair accessibility were also improved.

The tram track now has a better geometry, with all curves equipped with spiral easement, which ensures trams pass through more comfortably and cause less wear on the tracks. The structure using large panels was replaced with a new structure on a concrete slab and ties with bituminous covering. New concrete dividers were also added between the tracks and the roadway, which in order to do away with the negative traverse elevation of the carriageways on turns are in some places replaced with bevelled kerbs that made it possible to achieve the required height difference between the roadway and the tracks. The Stejskalova stop was renamed Libeňský zámek and was moved to the space in front of the Art Nouveau building of the Libeňská sokolovna, thanks to which islands could be added in place of the previous boarding from the street in the narrow roadway. The stops U Kříže and Vosmíkových heading into the centre now have extended kerbs. The U Kříže stop heading into the centre was shifted to below Podlípěného for better future transferring to the train.



Track refurbishing at the intersection Zenklova – Primátorská



New (moved) Libeňský zámek stop

Refurbishing of Libušká including construction of a roundabout (TSK)

The object of this work was to completely redo the street Libušká where it passes through the neighbourhood of Písnice. As part of the refurbishing, the section from the intersection with the Kunratická spojka up to the south end of Písnice had the surface repaired, a new roundabout was built at the intersection Libušká x Kunratická spojka and a new sewer line was built with a pumping station.

Also as part of the work, infrastructure networks were moved (cables, water lines, gas lines), detour routes were repaired, new road drainage was installed, new bus stop shelters were built and greenery was altered. The refurbishing also brought greater safety to pedestrians, as four structural speed humps were built, particularly

to reduce the speed of automobiles entering Písnice. Compared to the original crosswalks, there are now seven, and aside from a small section (by the street K mejtu), sidewalks were installed all along Libušká. The road surface is bituminous and the sidewalks are paved with interlocking paving stones.



Refurbishing of Libušká in Písnice



New roundabout at intersection Libušká x Kunratická spojka

Refurbishing of railway track no. 122 Prague – Hostivice (SŽDC)

The main goal of refurbishing the track also known as the Prague Semmering was to extend the service life of two protected heritage bridges over the valley Prokopské údolí, on which the line speed would otherwise have to be reduced. Both bridges have heritage protection, thus their renovation took place under the supervision of the heritage authority. The bridges are from the year 1872 and are 115 and 92 metres long.

The superstructure was taken off and the bridge arches repaired and rehabilitated. The damaged cornice stones were replaced and new steel rails were installed. The steel structure on which the shorter of the bridges spans one bridge span was replaced. The masonry of the supports and pillars was grouted and cracks in the support and pillar masonry were repaired (with work to be completed in 2019).

Extensive modifications were made to the stops Praha-Stodůlky and Praha-Žvahov, where the passing loops were refurbished, new boarding platforms built, and lighting and a passenger information system added. A new stop was created by the Jinonice metro station, right by the new office and residential complex Waltrovka. The project of renovating the existing station and track safety and communication equipment continued. New equipment buildings were built in Stodůlky and Jinonice, while those in Zličín and Žvahov were revamped. A GSM-R digital radio system was installed on the whole track so that after the whole modernisation was completed, it would be possible to run operations from the Praha-Balabenka central dispatching site. The point of renovating the safety equipment is primarily to increase the number of trains that can pass through, which will allow the track to subsequently be used as a detour route during modernisation of the Prague – Airport – Kladno track.



One of the refurbished viaducts in Hlubočepy

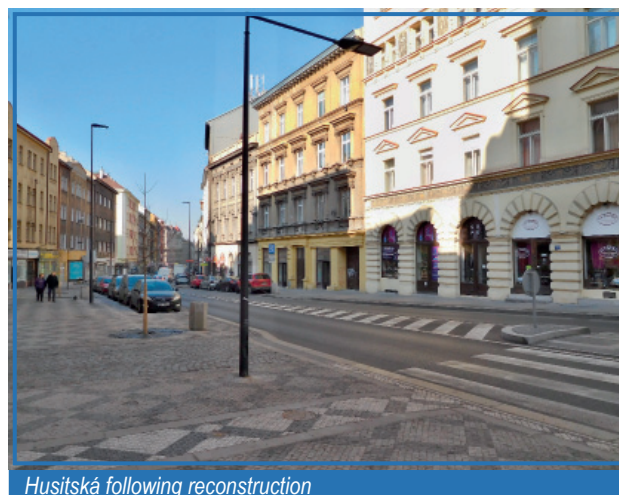


The new position of the Praha-Jinonice stop

Refurbishing of Husitská (TSK)

Extensive reconstruction of Husitská took place between the intersection with Trocnovská and Tachovské náměstí in the Prague 3 municipal district. In terms of traffic importance, this is part of the arterial city radial road connecting the centre to the eastern sector of the city and onwards to the Central Bohemian Region. This street is characterised by a dense urban structure, thus the Prague Institute of Planning and Development also took part in the discussions.

The proposal for structural modifications arose out of an architectural study “Reconstruction of the streets Husitská and Koněvova”, which Prague 3 had drawn up in 2016.



The study aimed to completely rehabilitate the street as part of a modern urban space in which all functions are appropriately balanced and which has the potential for long-term development.

The goal was also to create interesting nooks to relax in where one could spend time, sit and meet people. An important change was modifying the arrangement of the street. The position of the sidewalk kerbs was shifted so that parking bays could be created, making it possible to eliminate sidewalk parking and thus thoroughly separate pedestrians from vehicles. New stone mosaic paving was laid on the sidewalks. The carriageway structure was designed for a heavy traffic load with an asphalt surface with increased toughness.

The new parking bays and parking lanes for preserving parking for residents, subscribers and visitors are paved with small granite pavement at the same height level as the road. Pedestrian crossings are safer thanks to traffic islands and new lighting. The bus stop bays were designed with a large granite pavement surface. The works also included modifications to the existing intersections, renewed traffic signals and complete drainage of the road. New public lighting was also installed.

During realisation of the works, complete closures were in place based on the given stage, and entry was only allowed for pedestrians and so that buildings could be entered. Stocking of shops was made possible from supply spots in front of the construction site and in exceptional cases, following agreement with the construction workers, also within the site.

Refurbishing of Českobrodská (TSK)

Reconstruction of the street Českobrodská, which was in poor technical condition in part due to the excessive traffic load, took place in the segment from the street Ke třem mostům up to Na Vydrholci.

The work was divided into two parts, with one consisting only of renewing the existing surface and underlayer of the carriageway and the second comprising modification to the vertical alignment of the road and streetscape.

As part of the work, the bridge structures over the Říčanský potok and the Rokytka were renovated. The carriageways were designed with an asphalt surface, sidewalks and entrances now have interlocking paving and the sidewalks among buildings have a surface made of granite mosaic.



As part of the refurbishing, the bus stops, public lighting and gas lines were also dealt with.

Extra lighting was installed at pedestrian crossings, the high voltage and low voltage cables were relocated, the existing cable protectors were extended, and last but not least the existing trees were cut down. Alongside the repaired bridges and culverts, temporary roads were put in place for the duration of the reconstruction, with entry allowed only to public transport and residents.

The project was co-financed with SFDI funding. Continuation of repairs on further sections of Českokobrodská is planned into 2019.

Museum Oasis (TSK, DPP)

The term Museum Oasis indicates the part of Vinohradská between the historical building and new building of the National Museum.

Once an underground corridor connecting the two buildings had been built, the plan arose not to return to the original street arrangement, but to create a space here in the form of a square that includes routes for automobile, bicycle and tram traffic while being fully traversable for pedestrians.

The whole space between the buildings is unified by new granite paving, the colour of which ties in to the renewed facade of the National Museum.



Currently isolated section of tram track by Muzeum

An interesting aspect is the placement of 70 metres of tram tracks for the future planned track that is supposed to connect Vinohrady and the city centre. As part of the project the pedestrian crossings by the exit and entrance from Wenceslas Square were also refurbished.

The revitalisation included installing new street drainage, installing new street furniture (benches and rubbish bins) and the planting of 60 trees. The neighbouring park Čelakovského sady also underwent revitalisation.

Overview of other construction, refurbishment and road repairs in 2018	
Name [investor]	Description
Repair of pedestrian bridge on railway bridge at Výtoň [TSK]	<ul style="list-style-type: none"> One of the two bridges that were closed at the end of 2017 due to their emergency state of disrepair did not undergo renovations until from the end of April to September 2018, as the work could only be done under suitable weather conditions due to the unavoidable associated shutdown of the gas pipes hung under the bridge. The load-bearing structure of the walkways, which line both sides of the railway bridge outside the main double-walled truss girders, had corroded across the board, and the static assessment only allowed work to be done on part of the length of the various bridge spans at a time. The steel structure was sandblasted (water blasting could not be used due to the original paint containing harmful substances), and the damaged elements were either reinforced or replaced with new ones so that the load-bearing capacity of the bridge would be sufficient. All the connections were riveted after the refurbishing in light of the heritage protection. At the end, the structure was coated with anti-corrosive paint in the original colour from when the bridge was built. The wooden bridge deck was replaced along with the inner railing and the access staircase was repaired.
Repairs to Wilsonova [TSK – co-financed by SFDI]	<ul style="list-style-type: none"> Ongoing maintenance in the section Hlávčův most – Hybernská consisted of grinding off the surface and replacing it with asphalt. During the work the equipment for applying de-icing spray was renewed. Repairs to the expansion joints in the Main Train Station building also took place. The old plastic expansion joints were demolished, the bottom insulation of the bridge deck treated, new steel bridge expansion joints installed, drainage conducted and 50 cm of surface renewed on each side of the new joint.
Construction of noise barrier in area Spořilovský plácek [TSK]	<ul style="list-style-type: none"> Construction of a noise berm and noise wall took place along the road 5. května and the Jižní spojka. The goal of the work was to provide noise protection for the residential buildings on the streets Jižní XVII and Čtyřdílňá so as to uphold the public health limits even for the prospective traffic conditions in the area. A 2.5 m high „south“ noise barrier was built, as were a 6 m high „north“ noise barrier and a 6 m high noise berm.
Refurbishing of Nuselská [TSK]	<ul style="list-style-type: none"> In 2018 the section Vladimírova – bridge over the Botič underwent reconstruction. The new carriageways have a bituminous surface, the parking spots large granite pavement and the sidewalks stone mosaic. The works also included drainage work, shifting infrastructure, traffic signals, landscaping and street furniture modifications. The project was coordinated with the works of other investors: Pražská plynárenská, Pražská vodohospodářská společnost, the Public Transport Company, UPC, T-Mobile, Pražská teplárenská.

Refurbishing of Anenský trojúhelník [TSK]	<ul style="list-style-type: none"> Phase 1 of the project was completed, consisting of carriageway and sidewalk repairs. The refurbishing included replacing the boundaries between the sidewalks and roadway, rehabilitating the subgrade, repairing the street drains and connectors, and new road markings. The refurbishing took place in stages and affected the streets Na Zábradlí, Anenská (section Smetanovo nábreží – Anenské náměstí), Náprstkova (section Karoliny Světlé – Betlémské náměstí) and Betlémská (section Karoliny Světlé – Betlémské náměstí).
Repairs to Keplerova [TSK]	<ul style="list-style-type: none"> The street drainage was repaired including installation of 15 drains and connectors. The existing paving stone surface was replaced with a bituminous surface, including local repaving of the connecting paved areas. Replacement of the carriageway surface reduced the noise burden in the surroundings of the road.
Refurbishing of Kamýcká [TSK]	<ul style="list-style-type: none"> Ongoing maintenance of the street in the segment Kosova – boundary of City of Prague consisted of grinding off the surface with localised repairs to the bed layer and subsequent laying of an asphalt layer. Modifications took place to the shoulder and guard rails, and entrance, drainage ditches, two culverts and part of the sidewalk were renovated. The road markings were redone.
Ongoing maintenance of the street Dobříšská [TSK]	<ul style="list-style-type: none"> This was a project of ongoing maintenance for the whole length of Dobříšská. Microgrinding of 15 mm was conducted with subsequent laying of cold microsurfacing with local repairs to the bed layer and rectification of surface signs for infrastructure networks. The traffic signage was renewed.
Refurbishing of Na slupi [TSK]	<ul style="list-style-type: none"> Following up on the refurbishing of tram tracks and rehabilitation of the bridge over the Botič from 2017 was work on the rest of the road. The new carriageways have a bituminous surface, parking spots are paved with large granite paving stones and the sidewalks with stone mosaic. The works also included modifications to drainage, shifting infrastructure and repairing public lighting.



Repaired pedestrian bridge on railway bridge at Výtoň



The street Na slupi following reconstruction

The TSK works also included further road refurbishing and repairs. One of the stages of the reconstruction of Vršovická took place, with renewal of bituminous layers and local replacement of the underlayer. Another stage of replacing the surface and underlayer on the Štěrboholská spojka took place.

On part of the streets Na Hroudě and Nábreží Kapitána Jaroše, the paved surface was replaced with a bituminous surface. On the street U Seřadiště work was done to rectify the street's state of disrepair.

Reconstruction of part of Žitomířská consisted of replacing the road and sidewalk surfaces, repairing the drainage and lighting a crosswalk.

As part of Stage 1, seven streets were reconstructed in Staré Bohnice, with new bituminous carriageways, raised intersections, paved sidewalks and storm sewers. Following work on Křemyslova there is new drainage, an asphalt surface, paved sidewalks and two long speed humps.

Carriageway refurbishing and sidewalk construction took place including drainage on the street U Trojského zámku. On the street Pod Čimickým hájem, where the carriageway was historically unpaved and was only later patched with asphalt, a new carriageway, sidewalks and drainage were built including revitalisation of greenery. On part of the street Horoměřická the drainage was modified.

Following an archaeological study, the area in front of Písecká brána was revitalised with repaving of the road and sidewalks. In the Strahov Tunnel the anti-skid properties of the carriageway were improved using the method of shot-peening. Part of the carriageway on Zhořelecká was repaired with local rehabilitation, adding of pedestrian crossings, repairs to the bus bay, the parking lot including lighting, and repairs to the drainage.

Reconstruction of Londýnská was completed, with carriageway repairs having waited until after the winter break.

On the streets Vltavská, Patočková, Hrabáková, Bieblova, Pod Brentovou and Pod Barvířkou the carriageway, sidewalks and drainage facilities were repaired. On the section of the Jižní spojka in Prague 10 the asphalt road surface in the right lane was replaced, including repairs to the guard rails (funded by SFDI).

On Jiráskův most the bituminous surfaces of the carriageway were revitalised including minor repairs to the insulation layers. In connection with the closure, surfaces on adjacent streets were also repaired. In Nové Butovice the pedestrian bridge in severe disrepair was taken down and replaced with a new structure. Bridge repairs also took place on the street K Barrandovu.



New road surface on Jiráskův most



Extended sidewalks on Londýnská ulice

As part of ongoing road maintenance the following works took place. On Novodvorská in the section Smotlachova – U družstva Tempo the surface was ground off and replaced with asphalt, and pedestrian crossings and stops were modified.

Ongoing maintenance of the road Ve žlábku consisted of local rehabilitation of the bed layer and grinding of the surface, subsequently replaced with asphalt. The surface symbols for infrastructure networks were rectified and kerbs repaired. This was a continuation of the work from 2017, which was suspended for the winter due to unsuitable weather conditions.

Another project that was a completion of works from the prior year was the ongoing maintenance of the road K Barrandovu in the section K Holyni – Pražský okruh, where grinding took place with subsequent renewal using noise-reducing asphalt, surface symbols for infrastructure networks were rectified and kerbs were repaired. The works were co-financed from SFDI funding, as was the ongoing maintenance of the on-ramp to the Barrandovský most, consisting of grinding off the surface and laying down emulsion microsurfacing.

Ongoing maintenance of the carriageway on the street Zaříčanská was conducted, with the surface layers being replaced and local rehabilitation of the base layers, surface symbols for infrastructure rectified and ditches cleaned out.



Ongoing maintenance on the street K Barrandovu

Overview of most important refurbishments and repairs in public transport in 2018	
Name [investor]	Description
Accessibility modifications to tram stops [TSK]	<ul style="list-style-type: none"> At the Maniny stops the existing manner of boarding from the street was replaced with „Vienna-style“ stops. The work also included new pedestrian crossings and modifications to the adjacent sidewalks. The infrastructure networks were shifted. By the I. P. Pavlova stop the level of the carriageway was raised for 55 m along the tram island. The road surface is made of small granite paving stones, the sidewalk surfaces from cut mosaic. The railing has been replaced by anti-parking columns. At the Kamenická stop the existing manner of boarding from the street was replaced with stop bulbs. The work also included a new pedestrian crossing.
Tram track refurbishment Vysočanská – Vozovna Hloubětín [DPP]	<ul style="list-style-type: none"> Reconstruction of the tram tracks on the street Kolbenova took place in coordination with the work of the other investors. The original end-of-life large-scale panels were replaced with a classic track structure on ties with a gravel bed, primarily with grass covering with irrigation. The surface at crossings, intersections and crosswalks is bituminous. All the stops are barrier-free. A new type of acoustic barrier is being tested on part of the track. It is made of rubber blocks that reach only 30 cm above the railhead, but immediately next to the rails.
Renovation of Dejvická metro station [DPP]	<ul style="list-style-type: none"> Station renovations, which aside from a four-day closure for selected activities performed above the boarding platform and the escalators took place while the station was in service, concerned lighting, switchboards, the information system, wall coverings, ceilings and tiling. The cladding behind the tracks made of Hurdis beams was left in place, but the most degraded parts were replaced with new slat cladding. In the exit structures the roofing, metal elements and glass parts were repaired. The lift was modernised and the switches at the station loop were replaced, including the double crossover.
Tram track refurbishment on Vinohradská [DPP]	<ul style="list-style-type: none"> The 600 m segment between Flora and Želivského underwent reconstruction. The panel-based track was replaced with a new structure with concrete ties and a gravel bed. The surface of the tram lane was covered in grass equipped with automatic irrigation. By the crossings, stops and tram structure the surface is paved, in places asphalt. The stops are barrier-free with mosaic paving. During the closure part of the track structure was replaced at the Želivského intersection and the track on Skrétova between I. P. Pavlova and Muzeum was repaired, with the ties and rails replaced.
Track tack refurbishment Újezd – Malostranská [DPP]	<ul style="list-style-type: none"> The majority of turns on the track were either replaced or laterally welded. The gauntlet track was replaced on Letenská, including the branches on both sides. The whole track was completely reground. The overhead contact lines were inspected. On Malostranské náměstí the track area was repaved with new 10 x 10 cm format paving in accordance with the plans of the Institute of Planning and Development.
Optimisation of railway line Praha Hostivař – Praha hl. n. [SZDČ]	<ul style="list-style-type: none"> Reconstruction began, comprising construction of a new railway station Praha-Zahradní Město, a new Praha-Eden railway stop, renovation of the Praha-Vršovice railway station and relocation of part of the segment to the new corridor at the south edge of the former Praha-Vršovice marshalling yard. In the segment Praha-Zahradní Město – Praha hl. n. four rail tracks have been devised.
Reconstruction of Negrelli Viaduct [SZDČ]	<ul style="list-style-type: none"> Reconstruction of Negrelli Viaduct continued. The project comprehensively addresses the unsuitable condition of the bridge structure, the railway superstructure, the safety, communication and electric facilities and the overhead lines. The work also includes the removal of the conversions and additions under the bridge arches.
Other repairs and refurbishments in public transport	<ul style="list-style-type: none"> Metro: On the A line the renovation of Muzeum station was completed. Repairs to the eastern vestibule of Palmovka station comprised replacing the escalators, drop ceilings and lighting and modernisation of the electrical equipment, cladding and tiling. At Anděl station the escalators in the Anděl vestibule were replaced, including complete repairs to the escalator tunnel. Repairs of a similar scope took place at the station Náměstí Republiky (replacement of escalators in Náměstí Republiky vestibule, repairs to escalator tunnel, renovation of vestibule). At the station Nádraží Veleslavín the ordinary staircase between the vestibule and bus terminal was replaced with two escalators. On the C line, the end-of-life wooden ties were replaced with reinforced concrete ones during several closures in the section Budějovická – Pankrác. Trams: At Náměstí Kinských 150 m of track was repaired. At the intersection Národní x Spálená the severely damaged turn was repaired. The Lazarská x Spálená intersection was completely refurbished in three stages.

The City of Prague Technical Administration of Roads, 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 and operation.

These activities are financed by the City of Prague from the current and capital expenditure budget, and in some cases with contributions from SFDI or the municipal districts.

In 2018, CZK 3.842 billion was spent on repairs, maintenance, operations and summer and winter maintenance. Capital expenditures totalled CZK 1.844 billion.

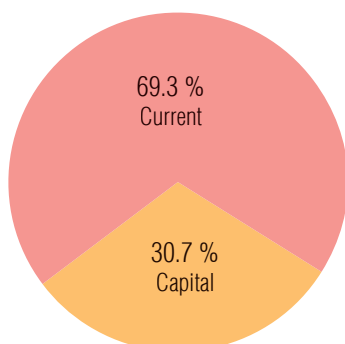
12 FINANCING THE OPERATION AND DEVELOPMENT OF MOBILITY

The operation of urban transport and the realisation of transportation infrastructure in 2018 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.

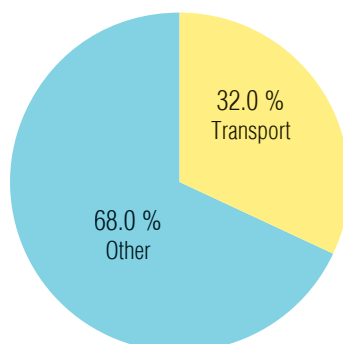
The City of Prague budget, updated 30 June 2018, reached CZK 96.6 billion in expenditures, of which the expenditures under Chapter 03 Transport totalled CZK 27.3 billion. Chapter 03 was thus once again the heaviest heading of the municipal budget in terms of expenditures in 2018 (over 28 %). Transport accounted for 32 % of the capital's current expenditures and 20 % of capital expenditures.

Distribution of total expenditure in the municipal budget in 2018 (budget updated 30 June 2018)

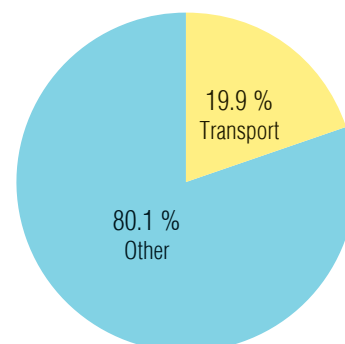
Distribution of total expenditure



Current expenses – traffic share



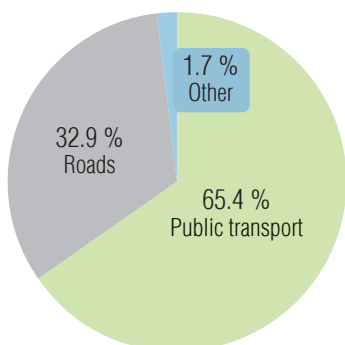
Capital expenditures – share of transport



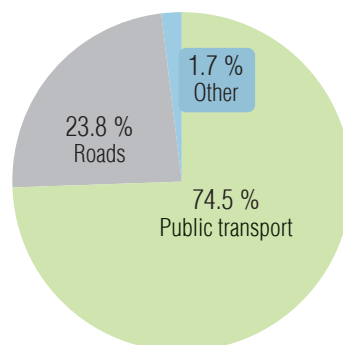
Of the total amount planned for transport in the adjusted budget (CZK 27.3 billion), CZK 21.4 billion was earmarked for current expenditures and CZK 5.9 billion for capital spending.

Expenditure on transport by purpose – public transport / communication (budget updated 30 June 2018)

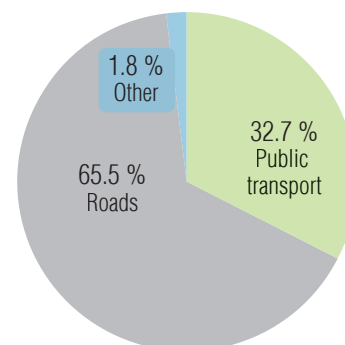
Total



Current



Capital

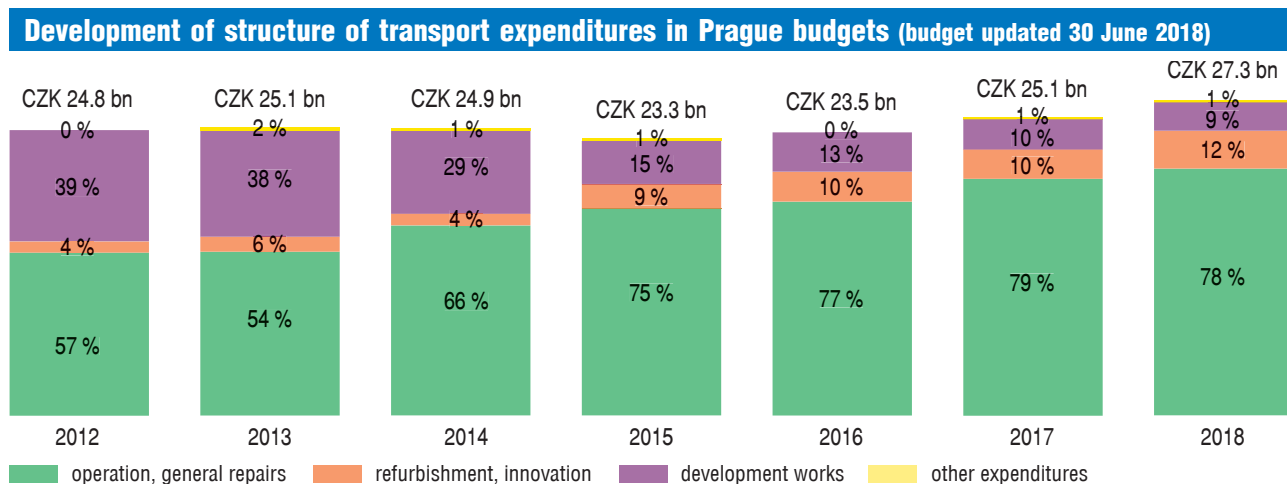


Every year, expenditures associated with passenger public transport form the decisive bulk of current expenditures. CZK 15.9 billion was set aside for this purpose in the adjusted budget. CZK 5.1 billion was earmarked for administration, maintenance and operation of roads and CZK 0.4 billion went to cover various other necessary expenditures.

The capital expenditures were earmarked primarily for development investments (57 %), as well as more extensive repairs and refurbishment (39 %). Expenditures allocated for improving the road network and conditions and conditions for road traffic dominated. Of the total amount of CZK 5.9 billion, CZK 1.9 billion went to renewal and development of public transport and CZK 3.9 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.

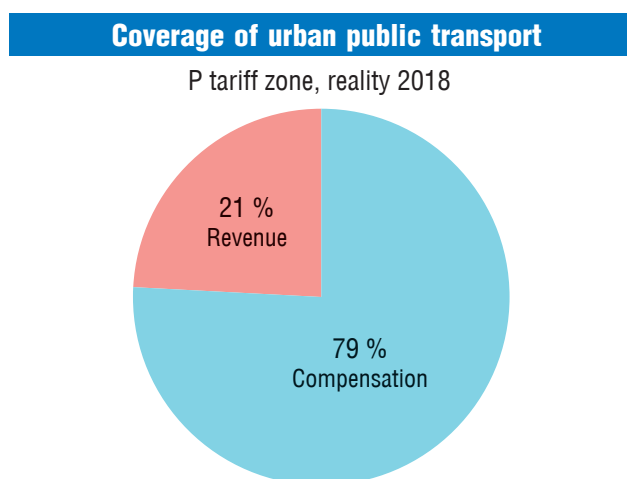
Of the total amount earmarked for transport in the adjusted budget for Chapter 03 in 2018, the percentage for ensuring the operation, renewal and development of public transport was 65 % and the amount for covering

road transport and development of the road network was 33 %. A more detailed analysis of the item breakdown for transport expenditures shows that CZK 21 billion went to securing the operation, general repairs and maintenance of the city's transport city, CZK 3.4 billion went to major repairs, refurbishing and renewal of technical facilities, CZK 2.3 was earmarked for development investments, and CZK 0.4 billion was for other expenditures. It is evident from the long-term development of the structure of expenditures that the level of expenditures earmarked for securing operation of the city's transport system, its maintenance and general repairs is constantly growing.



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 overarching road network. The state also contributes to the construction of the Prague Outer Ring road, having taken on full guarantee for its funding. In 2018 a total of CZK 35 million (incl. VAT and valorisation) was issued for ring road works. In the southwest segment this was primarily for noise reduction measures and cleaning up the construction site, in the northwest segment planning work associated with drawing up the documents for EIA notification of works 518 and 519. The city budget also contributed to financing EU Operational Programmes in conjunction with EU funds.

An important source of funding for operation of the city's public transport system is fare revenue and other potential minor revenue. In the P tariff zone, the total cost for operating urban lines in 2018 was CZK 20.2 billion. Fare revenue in this zone reached an amount of CZK 4.2, while other minor revenue (advertising and the like) was CZK 0.3 billion. The actual compensation of operating costs was CZK 16 billion.



The Prague Public Transport Company contributed CZK 5.5 billion of its own resources to cover investment costs for the city's transportation system. CZK 3.4 billion went to renewing the public transport fleet and CZK 2.1 billion for other investment projects (projects co-funded from operational programmes, accessibility measures, etc.). In 2018, 25 new 15T trams and over 100 low-floor and partially low-floor buses were delivered to the Prague Public Transport Company.

13 EU PROJECTS WITH PARTICIPATION OF TSK

The City of Prague Technical Administration of Roads undertook the process of preparing and realising projects with the possibility of drawing funding from operational programmes in the period 2014–2020. It took advantage of the first declared calls for support applications announced by the relevant managing authorities.

Projects in the 2014–2020 programming period and their total investment costs

Operational Programme Transport	CZK 856 154 858
Operational Programme Prague – Growth Pole of the Czech Republic	CZK 322 772 177
TOTAL	CZK 1 178 927 035

Projects funded from OP Transport



EVROPSKÁ UNIE
Evropské strukturální a investiční fondy
Operační program Doprava



In 2018 the following approved subsidy projects financed from Call No. 27 of OP Transport were being managed:

Project title and number	Total		
Information System on Travel Times on the City Ring Road (reg.no.: CZ.04.2.40/0.0/0.0/16_027/0000061)	Budget	Subsidy 85 %	CZK 163 576 890
	CZK 192 443 400	Co-financing	CZK 28 866 510
Guidance System for Free Parking Spaces in the Streets of Prague (reg.no.: CZ.04.2.40/0.0/0.0/16_027/0000062)	Budget	Subsidy 85 %	CZK 131 183 099
	CZK 154 333 058	Co-financing	CZK 23 149 959
Development of Traffic-Dependent Management at Traffic Signals with Links to City Ring Road (reg.no.: CZ.04.2.40/0.0/0.0/16_027/0000060)	Budget	Subsidy 85 %	CZK 432 971 640
	CZK 509 378 400	Co-financing	CZK 76 406 760
Total for projects financed under OP Transport	Budget	Subsidy 85 %	CZK 727 731 629
	CZK 856 154 858	Co-financing	CZK 128 423 229

Projects funded from OP Prague – Growth Pole of the Czech Republic



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



In 2018 the following approved subsidy projects financed from Call No. 8 “Public Sector Innovation Demand”, Call No. 40 “Energy Savings in Municipal Buildings – Road Transport” and Call No. 29 “Public Sector Innovation Demand II” were being managed:

Project title and number	Total		
Low-Carbon Waste Logistics Solutions in Prague 1, Call No. 8 (reg.no.: CZ.07.1.02/0.0/0.0/15_024/0000505)	Budget	Subsidy 90 %	CZK 44 910 000
	CZK 49 900 000	Co-financing	CZK 4 990 000
Reducing the Energy Demand of the Strahov and Zlíchov Tunnels, Call No. 40 (reg.no.: CZ.07.2.11/0.0/0.0/17_057/0000604)	Budget	Subsidy 90 %	CZK 89 255 388
	CZK 99 172 653	Co-financing	CZK 9 917 265
Development of a Traffic Management System Using Multi-Agent and Adaptive Systems with Elements of Artificial Intelligence, Call No. 29 (reg.no.: CZ.07.1.02/0.0/0.0/17_046/0000935)	Budget	Subsidy 90 %	CZK 46 378 364
	CZK 51 531 516	Co-financing	CZK 5 153 152
Validation and Information System for Technical Traffic Information, Call No. 29 (reg.no.: CZ.07.1.02/0.0/0.0/17_046/0000936)	Budget	Subsidy 90 %	CZK 54 963 191
	CZK 61 070 212	Co-financing	CZK 6 107 021
Development of a Traffic Management System Using Multi-Agent and Adaptive Systems with Elements of Artificial Intelligence, Call No. 29 (reg.no.: CZ.07.1.02/0.0/0.0/17_046/0000965)	Budget	Subsidy 90 %	CZK 54 988 016
	CZK 61 097 796	Co-financing	CZK 6 109 780
Total for projects financed under OP Prague – Growth Pole of the Czech Republic	Budget	Subsidy 90 %	CZK 290 494 959
	CZK 322 772 177	Co-financing	CZK 32 277 218

14 OTHER FORMS OF TRANSPORT

14.1 Air transport

Both passenger and freight air transport in Prague are primarily operated in Ruzyně at Václav Havel Airport Prague (hereinafter Prague Airport), which is located at the northwest edge of the city (public international airport with an external border). Other Prague airports are Letňany (grass-covered public airport), Kbely (military airport) and Točná (grass-covered private airport). Nearby Prague is also Vodochody (private international airport).

Prague Airport

In terms of the runway system, Prague Airport is equipped with three RWYs, two of which (RWY 12/30 and RWY 06/24) are in use. RWY 04/22 is closed for take-offs and landings and serves as a parking bay. The total capacity of the runway system is approximately 200 000 aircraft movements (take-offs and landings) per year and 46 aircraft movements an hour.

The number of aircraft movements at Prague Airport reached 155 530 in 2018, which is 7 307 more than in 2017 (an increase of 4.9 %). The greatest number of movements (15 929) was recorded in August, the lowest (9 479) in February. The average number of persons per movement has long been increasing. In 2018 it reached a value of 108 persons/movement (+4 % compared to 2017).



The only Boeing 737-800 with registration OK-TST in ČSA colours



An Emirates Airbus A380 taking off from Václav Havel Airport

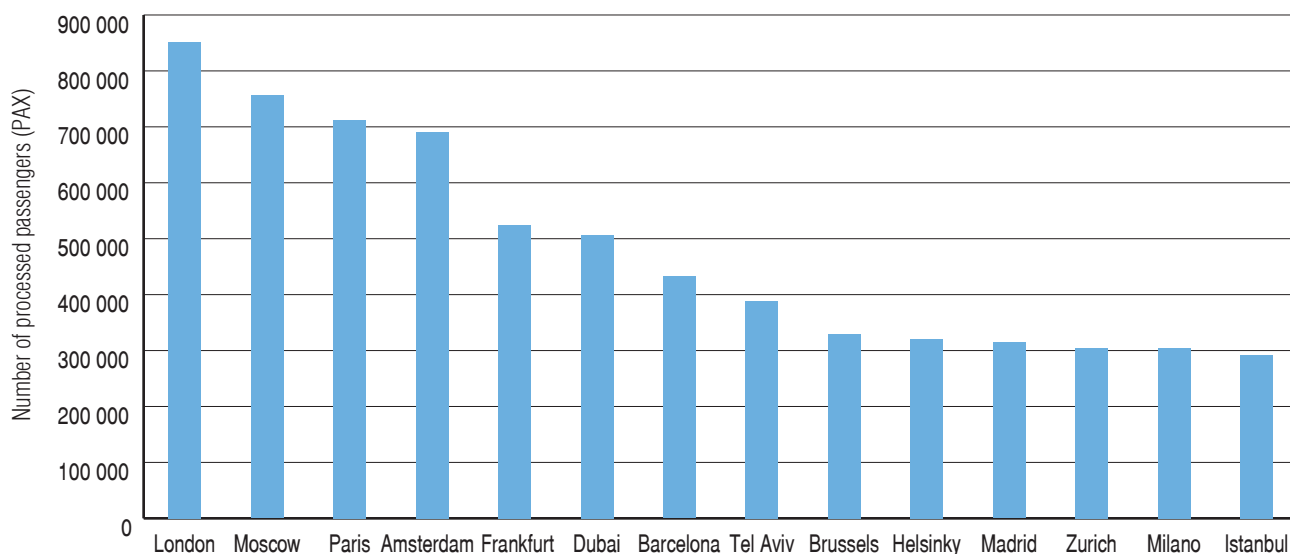
Prague Airport has three terminals for checking through passengers (PAX) both for departures and for arrivals. Terminal 1 serves to check through passengers flying to countries outside the Schengen Area (passport checks), Terminal 2 is intended for passengers flying to Schengen countries (no passport checks) and Terminal 3 dispatches private and VIP flights. The total capacity of the terminals at the present time is 17 000 000 passengers a year. With the current capacities of the individual subsystems, Prague Airport is nearly at the point of maximum utilisation of the overall capacity of the terminals.

Number of processed passengers, carriers and destinations at Prague Airport

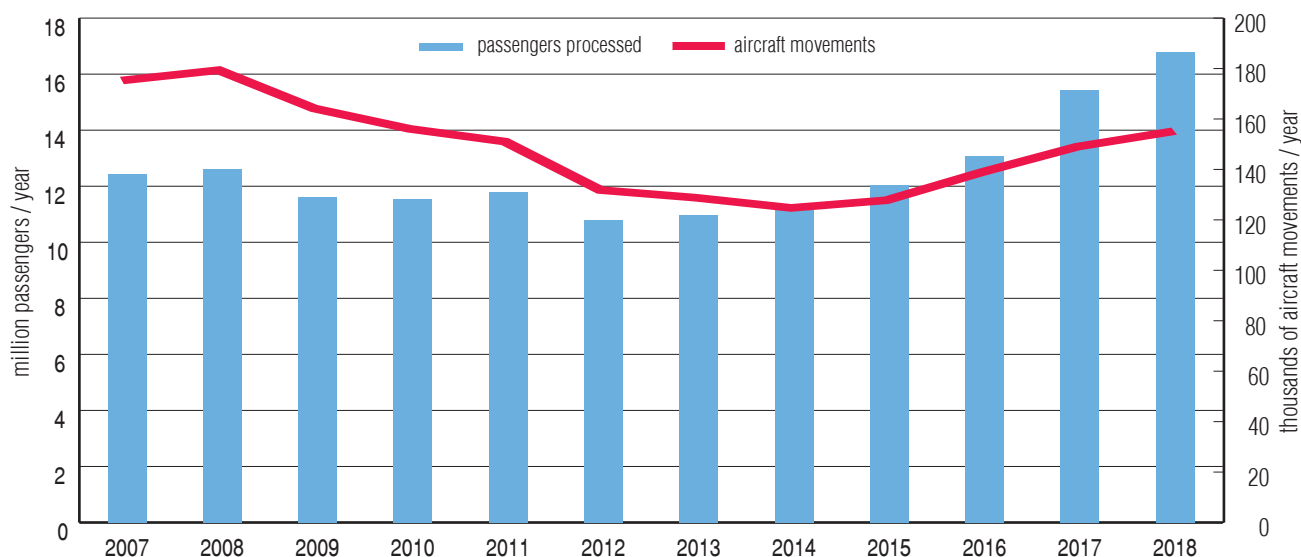
In 2018 a total of 16 797 006 passengers were checked through at Prague Airport (of those 96.1 % on regular lines), which represents a growth of 8.97 % compared to 2017. The share of classic airline companies making use of the services of Prague's airport in Ruzyně was 65 %, while low-cost companies accounted for 30 %. A full 97 % of passengers flying out had Prague Airport as the departure point of their journey, called "local passengers". The most passengers were checked through in July (1 877 369 PAX), the least in January (932 920 PAX). Compared to 2017, the monthly maximum was 10 % higher.

As part of regular air transport, 16 145 596 passengers were checked through, while on non-regular lines the number was 651 410. The month with the highest number of passengers checked through in 2018 was July. The top day was Friday and the times 9:30-12:30, 14:00-16:00, and 19:30-21:50 are the parts of the day when the total capacity of the terminals and runway system including the apron are utilised to the maximum. Passengers could make use of the services of a total of 69 carriers on regular lines in 2018.

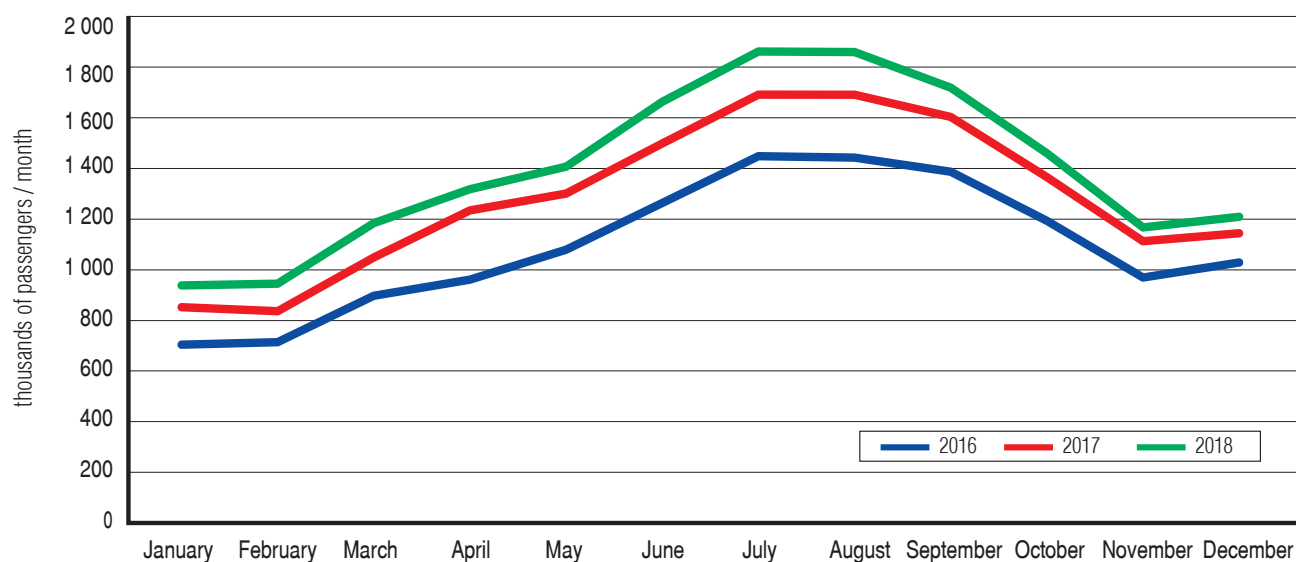
Highest demand destinations from Prague Airport in 2018



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



Month number of passengers checked at Prague airport in 2016–2018



Freight transport at Prague Airport

Two cargo terminals are located at Prague Airport for processing freight (Menzies Aviation CZECH s. r. o., ČSA a. s.). Each of these cargo terminals has a capacity of 100 000 t/year. In 2018 air freight with a total volume of 80 915 tonnes was handled at Prague Airport. Freight transport was 965 tonnes lower than in 2017 (decrease of 1.1 %). The most freight was handled in July (7 186 tonnes), the least in February (5 894 tonnes). The monthly maximum was 6 % lower in 2018 than in 2017.



Freight Antonov AN124 while taking off from Prague



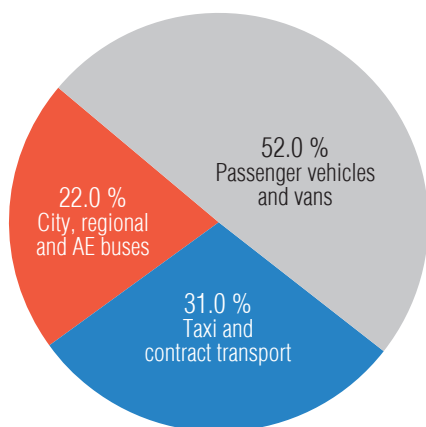
Land side of Prague Airport – air traffic control tower

Connecting transport to/from Prague Airport

The airport is located approximately 11km from the centre of Prague. It is served primarily by two express urban bus lines, 100 and 119, which run to the metro lines A (Nádraží Veleslavín) and B (Zličín). Since April 2018, one 119 bus connection has been synchronised to each A line metro connection at Nádraží Veleslavín station daily from 5:00 to 0:30. Certain other bus lines also stop at the airport, in particular long-distance and regional lines. A special Airport Express bus line, intended primarily for passengers that are continuing from Prague elsewhere in the country by rail, connects the main train station Praha hlavní nádraží with stops at Terminals 1 and 2.

For travelling to and from the airport there is also taxi service available, both by passenger automobiles and minibuses. A number of car rental services also operate there. Individual automobile transport is the predominant method for transport of passengers between the airport and the city, accounting in 2018 for 47 % of transport to the airport. This was followed by taxi transport with a share of 31 %, with the remaining 22 % taken up by urban public transport and bus lines including the AE line.

All trips to and from the airport (2018)



Line AE at Terminal 1 station

In 2018 there were a total of 6 872 parking spots available at Václav Havel Airport Prague. Available to the public are short-term parking with a capacity of 583 spots (EXPRESS, PC COMFORT and PA SMART) and long-term parking, offering a total of 3 718 spots (PC COMFORT and PA SMART). For airport employees and partners there are 2 571 parking spots reserved. Other parking options are available at commercial lots in the surroundings of the airport.

14.2 Water transport

Water transport in Prague provides for the transportation of persons and cargo along the Vltava, of which 30.9km 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 – 2018

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
2017	3 158	25 386	4 520	10 174	3 827
2018	3 491	25 517	4 525	10 525	3 323

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.



Boat operation around the Charles Bridge



The Cecílie boat beneath Vyšehrad

The oldest operator of water transport along the Vltava in Prague is Pražská paroplavební společnost, a. s. (PPS), which was founded in 1865. Today this company forms a consortium with the company Prague Boats, s. r. o., which was created with the partition of the company Evropská vodní doprava (EVD). Prague Boats is the operator of the boats for both companies. Boat operation is year-round, either at regular time intervals or according to the individual wishes of those ordering. Various sightseeing tours are also organised along the Vltava, to the Zoo, as well as day trips to Slapy and Mělník. PPS runs the Prague ferries P7 in Holešovice and P8 in Troja, the latter of which was instituted as a temporary replacement for the pedestrian bridge that connected Císařský ostrov and Troja. The high-capacity Troja boat can carry as many as 100 passengers.

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

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018
Prague Boats	196	193	205	209	246	283	298	322	329	345
PPS	86	91	107	98	149	162	186	189	192	507

The company AQUAVIA Praha, s. r. o. organises social events on three boats – Moravia, Czechie and Klára. Pražské Benátky, s.r.o. runs canal sight-seeing cruises along the Vltava year-round. Boats leave from the “Judita” docks every 15-20 minutes. The company also operates the Prague ferries.

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.

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



Preparations for the start of season



A freight boat in the Troja canal

At the end of the year, the locks by Štvanice island began to be modernised. The work is part of a development project on the Vltava in the section from Mělník to Prague; along with other works the navigational parameters of the Vltava Waterway will be increased.

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
2017	11 413	9 422	112	12 551	278 432
2018	45 720	43 980	2 834	44 768	200 333

Marked growth in the volume of material transported through the locks in Prague last year was caused in part by the transport of dredged sediment in the Radotín harbour, which was carried out in spring by Povodí Vltavy, and also by the transport of dredged sediment on the Vltava Waterway conducted by the Directorate of Waterways of the Czech Republic, which began in October 2018 and will continue in 2019.

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

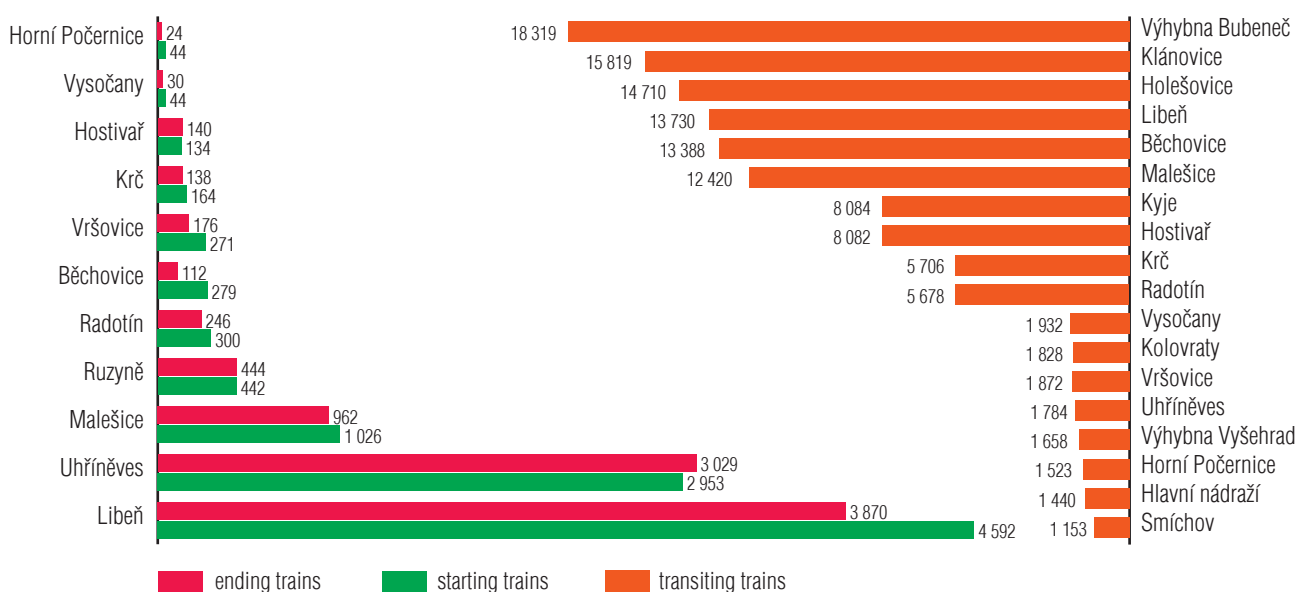
Year	Harbour					
	Radotín	Smíchov	Holešovice	Libeň	Other	Prague unspecified
2005	36 408	11 396	99 308	2 934	-	-
2010	0	364	53 207	0	-	-
2015	0	0	64 060	1 622	133 947	98 550
2017	16 736	0	0	28 070	234 683	50
2018	51 632	0	30 567	0	99 164	36 993

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 continues to be the most important railway hub in the Czech Republic, despite the fact that freight rail transport is rather stagnating there. Its operation is being influenced primarily by the preference for personal transport and the gradually disappearing or unused infrastructure that could make greater use of its potential. Functional sidings are being used by the Metrostav building supply warehouse and wholesaler in Horní Počernice, in Radotín the local cement plant (Českomoravský cement) and the Staropramen distribution centre, and the major warehouses of Pražská správa nemovitostí in Zličín (a new residential neighbourhood is being planned there however).

Number of trains beginning, ending and passing through Prague in 2018



In 2018, 20 155 freight trains were recorded beginning and ending within Prague, which is a slight decrease compared to the previous year (by 5.6 %).

Number of freight trains beginning and ending in Prague by month in 2018

Month	01	02	03	04	05	06	07	08	09	10	11	12	Total
Beginning	930	518	1 003	741	245	1 113	1 040	1 102	996	775	1 183	986	10 632
Ending	508	504	962	523	686	1 030	731	1 015	978	1 071	976	539	9 525

The shipping of packaged non-alcoholic beverages produced by PEPSICO CZ to Budapest and Malacky, Slovakia, which begins at the Praha-Hostivař siding and was commenced last year, will save several hundred tractor-trailer rides along the D1 motorway. Each week approximately 1000 tonnes of goods is shipped in this manner, always in twenty cars. The railway is also used to bring in Toma mineral waters from the bottling plant in Teplice nad Metují.

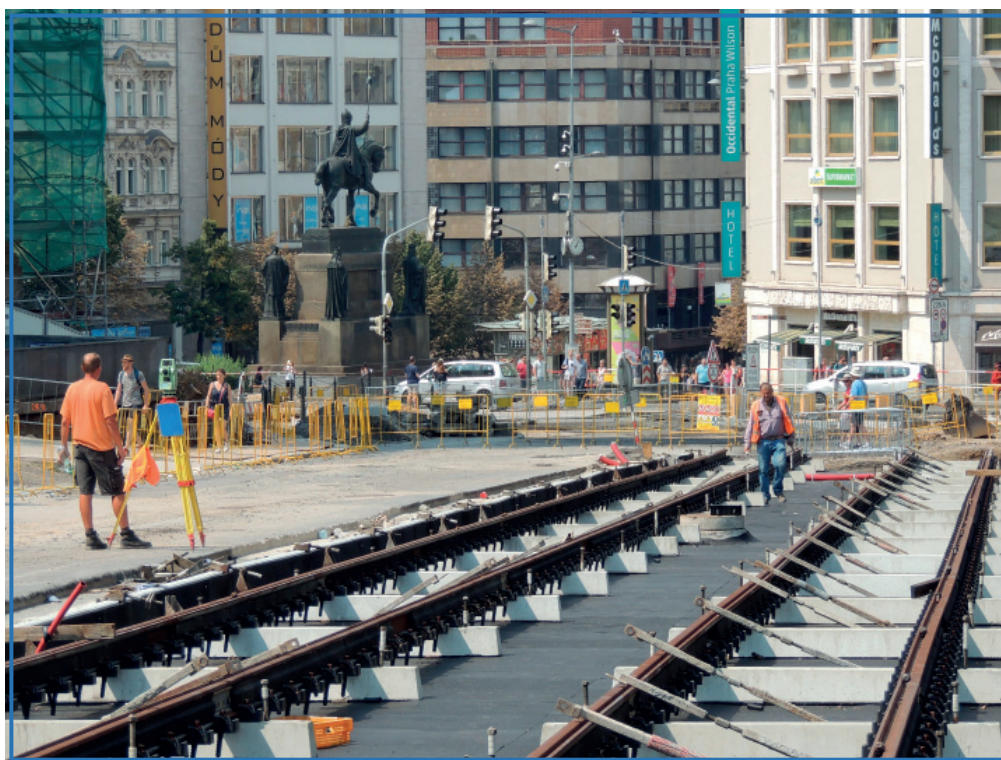
One of the most important users of freight railway in Prague is the METRANS intermodal transport terminal in Uhřetěves, which was opened in 1991. Transport to ports in northern Germany and the Netherlands, or in some cases to Trieste, Koper and Rijeka, are supplemented by connections to terminals in Česká Třebová, Plzeň and Ústí nad Labem, as well as all around Central Europe.

Freight transport in the Prague railway hub, and not it alone, is already being influenced by the construction of a new four-track corridor between the stations Praha-Vršovice and Praha-Hostivař. Construction was begun in July 2018 and the joint-stock company ČD Cargo has also been intensely involved. ČD Cargo freight trains have been shipping in gravel, concrete sleepers and rails. ČD Cargo employees also provide for unloading the gravel out of special Dumpcar wagons.

Notices:

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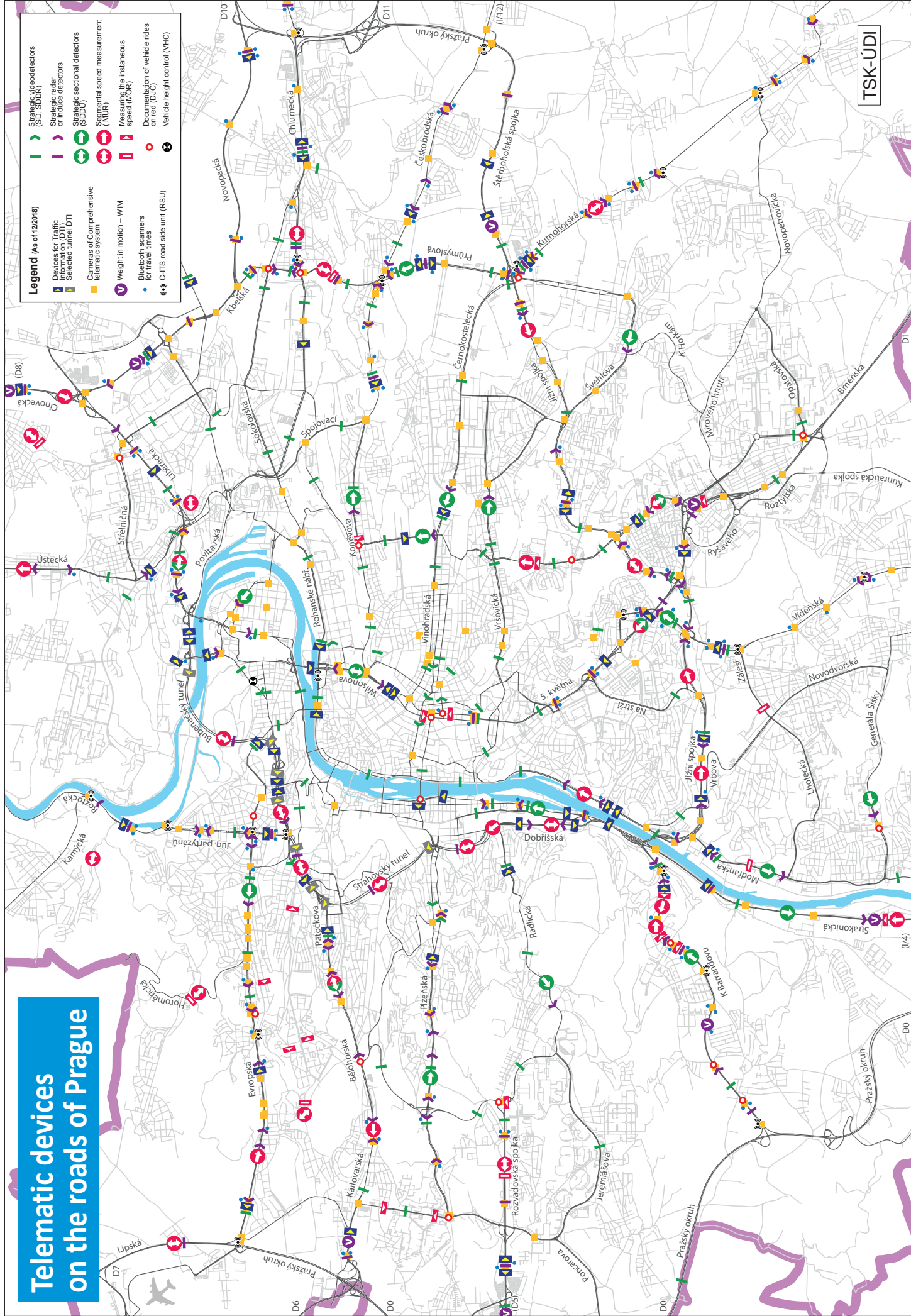


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Telematic devices on the roads of Prague





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