



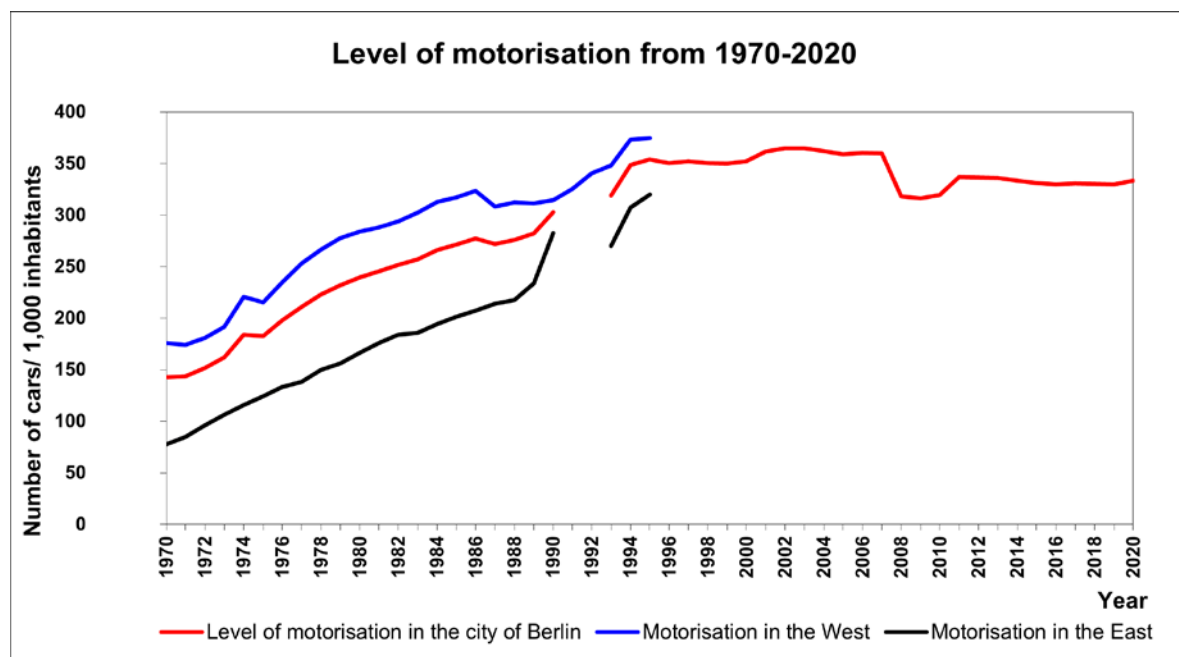
07.01 Traffic Volumes ADT 2019

Overview

Road traffic continues to pose a significant burden to the urban environment. Its numerical development is monitored by traffic counts that have been carried out in the western boroughs of Berlin at regular intervals since 1951 and since 1993 for the entire city area. The Traffic Management Division of the Senate Department for the Environment, Urban Mobility, Consumer Protection and Climate Action is responsible for carrying out traffic counts on motorways, federal highways and the remaining main road network. The current data refers to the year 2019 and thus updates the values of the preceding analysis from 2014.

The **level of motorisation**, i.e. the ratio of cars to the number of inhabitants, still differed greatly between East and West Berlin in 1970. For instance, there were 77.5 cars per 1,000 inhabitants in East Berlin in 1970, compared to 175.4 in the western part of the city, i.e. almost 100 vehicles more per 1,000 inhabitants. In 1995, also due to the reunification, the numbers were already much closer together than before: in East Berlin 320 cars were now available per 1,000 inhabitants, compared to 375 cars in West Berlin. Since 2011, the level of motorisation has stagnated (cf. Fig. 1). In comparison with other cities, Berlin is thus still at a very favourable level with 330 cars/1,000 inhabitants. For instance, Munich with 540 (2018) and Hamburg with about 434 cars/1,000 inhabitants (2019) exhibit far higher values. The German average was 569 cars/1,000 inhabitants in 2019.

As ecomobility is gaining in importance, there are, however, clear differences in the number of road users between Berlin's inner city and urban areas on the periphery, which still experience a high share of motorised private transport.



For the eastern part of the city, there is no information on the level of motorisation for the period from 1991 to 1993 due to the changeover of the number plates of all vehicles at that time. From 1996 onwards, a combined total is shown for Berlin.

Fig. 1: Level of motorisation in Berlin, 1970 - 2020 (according to [Map 07.01, Fig. 2 \(Edition 1995\)](#) with updates according to data of the [Statistical Office for Berlin-Brandenburg \(Amt für Statistik, AfS\)](#))

The following overviews compare the annual figures for the important parameters of route length and mileage by traffic load class as they developed from 1993 to 2019.

The comparability is limited, as route lengths varied across the individual survey years. Despite the continuous increase in the number of routes allocated to the main road network, the absolute level of the calculated daily mileage of all sections has declined slightly over the years, as has the proportion of route sections experiencing high traffic loads (average daily traffic volume (ADT) > 50,000 motor vehicles). However, there has been a slight upward trend in recent years.

Tab. 1: Traffic load (ADT), route length and mileage (km/day) in the main road network in 1993

ADT	road [km]	%	% cumulative	mileage	%	% cumulative
up to 2,500	12.2	1.00%	1.00%	25,988	0.10%	0.10%
>2,500 to 5,000	32.2	2.70%	3.80%	132,554	0.50%	0.60%
>5,000 to 7,500	78.3	6.70%	10.50%	509,774	1.80%	2.40%
>7,500 to 10,000	92.6	7.90%	18.30%	834,669	3.00%	5.30%
>10,000 to 20,000	424.4	36.20%	54.50%	6,191,964	22.00%	27.40%
>20,000 to 30,000	235.4	20.10%	74.60%	5,824,114	20.70%	48.10%
>30,000 to 50,000	205	17.50%	92.00%	7,768,120	27.60%	75.70%
>50,000	93.6	8.00%	100.00%	6,818,144	24.30%	100.00%
total	1,173.7	100.00%		28,105,326	100.00%	

Tab. 1: Traffic load (ADT), route length (km) and mileage (km/day) in the main road network in 1993

Tab. 2: Traffic load (ADT), route length and mileage (km/day) in the main road network in 1998/99

ADT	road [km]	%	% cumulative	mileage	%	% cumulative
up to 2,500	3.2	0.3%	0.3%	5,338	0.02%	0.02%
>2,500 to 5,000	26.3	2.2%	2.5%	107,525	0.4%	0.4%
>5,000 to 7,500	58.4	4.9%	7.4%	363,374	1.3%	1.6%
>7,500 to 10,000	108.2	9.1%	16.5%	937,553	3.2%	4.9%
>10,000 bis 20,000	451.4	37.9%	54.4%	6,573,078	22.7%	27.5%
>20,000 to 30,000	237.4	19.9%	74.3%	5,771,406	19.9%	47.4%
>30,000 to 50,000	213.5	17.9%	92.3%	8,141,383	28.1%	75.5%
>50,000	92.3	7.7%	100.0%	7,098,841	24.5%	100.0%
total	1,190.8	100.0%		28,998,497	100.0%	

Tab. 2: Traffic load (ADT), route length (km) and mileage (km/day) in the main road network in 1998/99

Tab. 3: Traffic load (ADT), route length and mileage (km/day) in the main road network in 2005

ADT	road [km]	%	% cumulative	mileage	%	% cumulative
up to 2,500	32.05	2.39%	2.39%	68,865	0.24%	0.24%
>2,500 to 5,000	56.65	4.23%	6.62%	232,407	0.79	1.03%
>5,000 to 7,500	132.83	9.91%	16.53%	828,848	2.83%	3.87%
>7,500 to 10,000	135.96	10.14%	26.67%	1,186,683	4.06%	7.92%
>10,000 to 20,000	484.18	36.13%	62.80%	6,986,687	23.90%	31.82%
>20,000 to 30,000	237.22	17.70%	80.50%	5,805,277	19.86%	51.68%
>30,000 to 50,000	162.54	12.13%	92.63%	6,105,699	20.88%	72.56%
>50,000	98.79	7.37%	100.00%	8,022,697	27.44%	100.00%
total	1340.23	100.00%		29,237,163	100.00%	

Tab. 3: Traffic load (ADT), route length (km) and mileage (km/day) in the main road network in 2005

Tab. 4: Traffic load (ADT), route length and mileage (km/day) in the main road network in 2009

ADT	road [km]	%	% cumulative	mileage	%	% cumulative
up to 2,500	50.6	3.21%	3.21%	73,647	0.26%	0.26%
>2,500 to 5,000	117.4	7.45%	10.67%	469,683	1.69%	1.96%
>5,000 to 7,500	173.8	11.03%	21.70%	1,104,039	3.97%	5.93%
>7,500 to 10,000	202.8	12.88%	34.58%	1,847,354	6.65%	12.57%
>10,000 to 20,000	523.0	33.21%	67.78%	7,486,173	26.94%	39.51%
>20,000 to 30,000	278.6	17.69%	85.47%	6,782,343	24.40%	63.92%
>30,000 to 50,000	176.0	11.17%	96.64%	6,685,888	24.06%	87.97%
>50,000	52.9	3.36%	100.00%	3,342,355	12.03%	100.00%
total	1,575.1	100.00%		27,791,482	100.00%	

Tab. 4: Traffic load (ADT), route length (km) and mileage (km/day) in the main road network in 2009

Tab. 5: Traffic load (ADT), route length and mileage (km/day) in the main road network in 2014

ADT	road [km]	%	% cumulative	mileage	%	% cumulative
up to 2,500	119.9	6.79%	6.79%	153,760	0.56%	0.56%
>2,500 to 5,000	156.3	8.85%	15.64%	597,464	2.16%	2.72%
>5,000 to 7,500	230.9	13.07%	28.71%	1,444,805	5.23%	7.94%
>7,500 to 10,000	240.2	13.60%	42.30%	2,099,893	7.60%	15.54%
>10,000 to 20,000	542.2	30.70%	73.00%	7,655,616	27.69%	43.23%
>20,000 to 30,000	258.0	14.60%	87.60%	6,251,459	22.61%	65.84%
>30,000 to 50,000	172.4	9.76%	97.36%	6,339,603	22.93%	88.77%
>50,000	46.6	2.64%	100.00%	3,105,319	11.23%	100.00%
total	1,766.4	100.00%		27,647,920	100.00%	

Tab. 5: Traffic load (ADT), route length (km) and mileage (km/day) in the main road network in 2014

Tab. 6: Traffic load (ADT), route length and mileage (km/day) in the main road network in 2019						
ADT	road [km]	%	% cumulative	mileage	%	% cumulative
bis 2.500	80.7	4.54%	4.54%	130,520	0.47%	0.47%
>2.500 bis 5.000	194.8	10.96%	15.50%	763,856	2.75%	3.21%
>5.000 bis 7.500	239.9	13.49%	28.99%	1,492,410	5.36%	8.58%
>7.500 bis 10.000	241.9	13.61%	42.60%	2,102,596	7.56%	16.13%
>10.000 bis 20.000	560.7	31.54%	74.13%	7,877,118	28.31%	44.44%
>20.000 bis 30.000	242.9	13.66%	87.79%	5,868,440	21.09%	65.53%
>30.000 bis 50.000	164.3	9.24%	97.04%	6,135,536	22.05%	87.58%
>50.000	52.7	2.96%	100.00%	3,456,210	12.42%	100.00%
total	1,777.9	100.00%		27,826,686	100.00%	

Tab. 6: Traffic load (ADT), route length (km) and mileage (km/day) in the main road network in 2019

Statistical Base

The traffic surveys carried out and analysed by the [Traffic Management Division](#) are based on the primary road network as defined in the Urban Development Plan for Traffic (Stages I – IV of the Berlin StEP network, SenUMK 2021). This network comprises about 1,530 km of a total of around 5,350 km. For the “Traffic Volume Map 2019”, a counting network comprising some 1,330 km was available including approx. 1,300 intersection and cross-section counts. The analyses were based on motor vehicle counts over a 12 h period (7am – 7pm) from the years 2016 up to the spring of 2019 and were extrapolated to the average weekday traffic volume (AWT) of the year 2019.

For the purposes of air quality and noise reduction planning, this network was supplemented by additional dividing points and network sections that do not directly refer to the abovementioned counts from the years 2016 to 2019. This expansion of the road lengths resulted in a primary road network of about 1,778 km of length.

Specifically, the data set presented here is based on the following:

- primary road network, inventory (Berlin StEP network), as of December 2021,
- extended network geometry, as of December 2021,
- Traffic Volume Map 2019, Senate Department for the Environment, Transport and Climate Protection (SenUVK), Berlin Traffic Control (VLB).

Methodology

Original data “average weekday traffic volume (AWT) 2019”

The Traffic Management Division is responsible for carrying out and analysing traffic surveys required by the authorities of the State of Berlin for the purposes of traffic control and planning as well as urban planning. Further up-to-date information, e.g. on the location of permanent counting stations and bicycle traffic counts, can be found [here](#) (only in German).

The surveys upon which the “Traffic Volume Map 2019” is based were extrapolated to the average weekday traffic volume (AWT/24 h) as a mean of all weekdays of the year, Monday to Friday, for the number of motor vehicles (including trucks) that pass a road cross-section in both directions per day.

For a description of the methodology used for data collection and analysis, please refer to the final report on the count (cf. SenUMKV 2019, p.12); the flow chart in Figure 2 provides an overview.

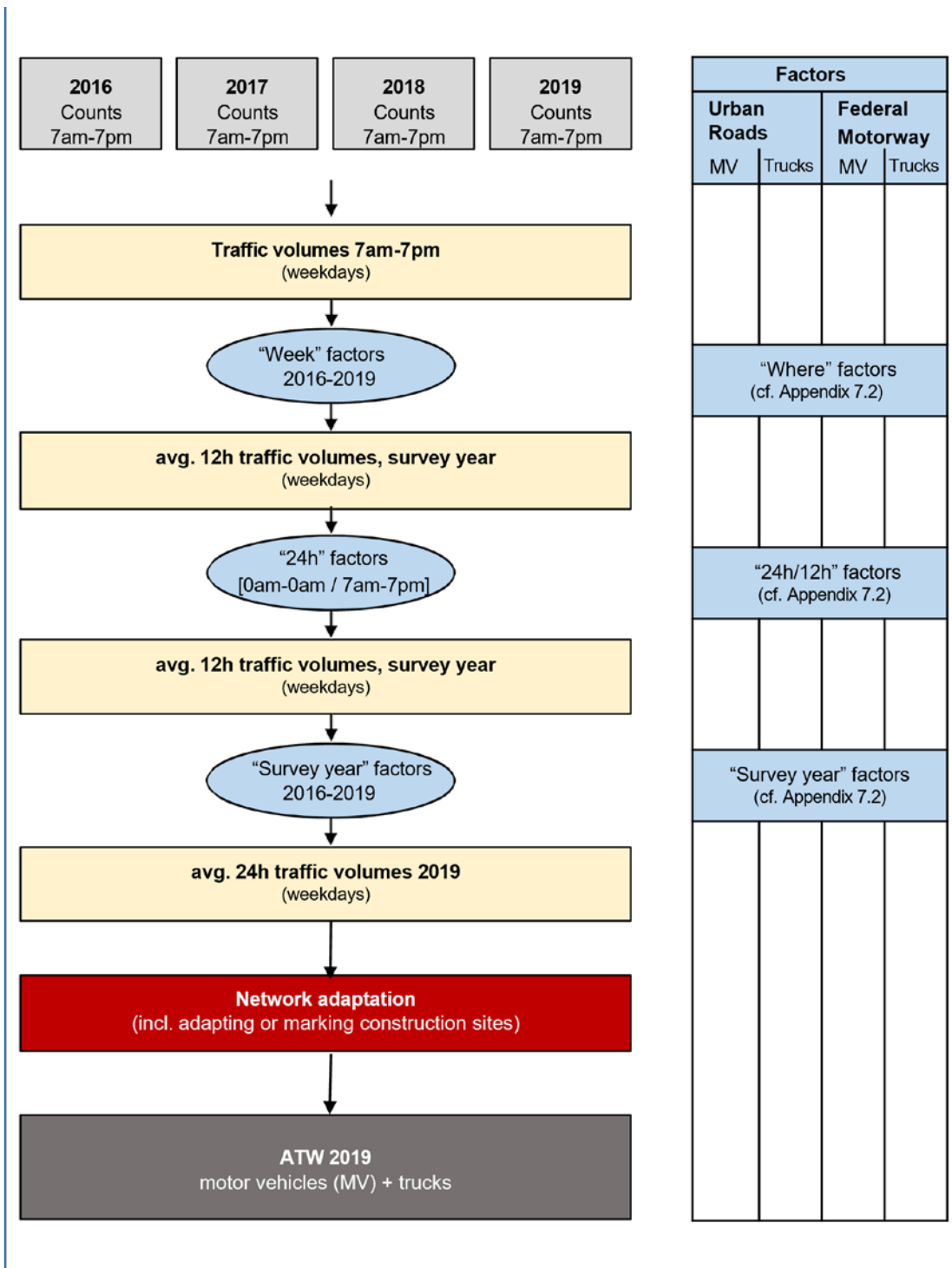


Fig. 2: Methodology for data collection and analysis of the "Traffic Count 2019"

Processing for purposes of air quality and noise action planning as "average daily traffic volume (ADT) 2019"

For the purposes of air quality and noise action planning, the data set presented here was further processed.

For the primary road network, the following traffic volumes are shown proportionally, alongside additional geometric data (permissible maximum speeds, road surface type and condition, identification of bus lanes, etc.):

- motor vehicles,
- cars,

- trucks < 3.5 t (light commercial vehicles),
- trucks > 3.5 t,
- buses,
- coaches,
- motorcycles.

The original counting network was extended following additional reviews and adjustments, which also included further dividing points for a more precise road sectioning. Overall, this network now comprises about 1,778 km of route length of the primary road network (cf. Tab. 6).

This network has a more detailed sectioning and contains additional road sections as well as a distinction between traffic lanes. Therefore, in cases where values could not be transferred from the existing network of the “Traffic Volume Map 2019”, they were collected retrospectively, determined using plausibility checks or supplemented by model data. The section-related information on the respective source of the ADT values for motor vehicles is provided in the “Source of motor vehicle values” field in the data display for the map (cf. map in the [Geoport](#)).

Another essential task in the processing was the conversion of the counts of the average weekday traffic volumes (AWT) to the ADT values presented here.

Since buses, coaches and motorcycles were not captured in the traffic counts, a separate analysis was carried out in this respect, based on the intersection and cross-section counts of the Traffic Management Division. The traffic volumes and shares for cars and light commercial vehicles were also calculated from the existing motor vehicle and truck values of the Traffic Volume Map 2019.

Map Description

The traffic load is not evenly distributed across the Berlin road network. It is particularly high along the sections of the urban motorway and on the routes leading to the city centre from the surrounding areas, which mostly serve as federal highways.

Table 7 illustrates the road sections with the highest weekday traffic loads in relation to the total number of motor vehicles and trucks. The section of the A100 motorway between the Messedamm Süd exit and the Kurfürstendamm exit is one of the most heavily travelled roads in Germany, with approx. 196,000 vehicles per 24 hours. With respect to peak truck loads, the distribution is similar across the individual motorway sections. It differs across urban roads, however, as the location of inner-city commercial and industrial areas influences the distribution of truck journeys.

MV	Road	Section		MV/24h
Federal motorway	A 100 Stadtring	AS Messedamm Süd	AS Kurfürstendamm	196,000
	A 111 Zubr. Hamburg	AS Heckerdamm	AS Flughafen Tegel	125,800
	A 113 Zubr. Dresden	AS Späthstraße	AS Johannisthaler Ch.	120,900
	A 115 Zubr. Magdeburg/Leipzig (AVUS)	AS Hüttenweg	AD Funkturm	92,000
	A 103 Abzweig Zehlendorf	AS Filandastraße	AS Saarstraße	70,800
Urban roads	Seestraße	AS Beusselstraße	Dohnagestell	74,400
	Frankfurter Allee	Hubertusstraße	Rosenfelder Str.	72,500
	Alt-Friedrichsfelde	Gensinger Str.	Märkische Allee	68,900
	Spittelmarkt / Gertraudenstraße	Kurstraße	Breite Straße	68,500
	Alt-Biesdorf	Märkische Allee	Mozartstraße	65,500
	Spittelmarkt	Kurstraße	Fischerinsel	64,600
	Leipziger Str.	Axel-Springer-Str.	Seydelstraße	63,900
	Alexanderstraße (inkl. Tunnel)	Alexanderstraße	Karl-Marx-Allee	63,000
	Landsberger Allee	Siegfriedstraße	Arendsweg	62,500
Lützowplatz	Wichmannstraße	Lützowufer	60,800	

Trucks	Road	Section		Trucks/24h
Federal motorway	A 100 Stadtring	AS Messedamm Nord AS Kaiserdamm Süd		13,250
	A 10 Berliner Ring	AD Pankow	AD Barnim	8,400
	A 113 Zubr. Dresden	AS Späthstraße	AS Johannisthaler Ch.	8,090
	A 111 Zubr. Hamburg	AS Saatwinkler Damm	AS Am Festplatz	7,800
	A 115 Zubr. Magdeburg/Leipzig (AVUS)	AD Pankow	AD Funkturm	6,910
	A 114 Zubr. Prenzlau	AD Pankow Str.	AS Schönerlinder	3,210
Urban roads	Seestraße	Beusselstraße	Dohnagestell	4,420
	Spandauer Damm	Gotha-Allee	Meiningenallee	3,730
	Friedenfelser Str.	Marienfelder Allee	Hildburghauser Str.	3,350
	Alt-Friedrichsfelde	Gensinger Str.	Märkische Allee	3,160
	Alt-Mahlsdorf	Hultschiner Damm	Theodorstraße	3,050
	Glienicker Weg	Adlergestell	Wassermannstraße	2,770
	Marienfelder Allee	Ahrensdorfer Str.	Diedersdorfer Weg	2,680
	Prenzlauer Promenade	Rothenbachstraße	AS Pasewalker Str.	2,670
	Alt-Biesdorf	Braunsdorfstraße	Oberfeldstraße	2,660
	Mühlendamm	Fischerinsel	Molkenmarkt	2,660
	Nonnendammallee	Daumstraße	Paulsternstraße	2,610
	Beusselstraße	Seestraße	Sickingenstraße	2,570
	Elsenstraße	Puschkinallee	Martin-Hoffmann-Str.	2,560
	Michael-Brückner-Straße	Sterndamm	Schnellerstraße	2,520

Zubr. = Acces road; AS = Exit; AD = Junction: MV = Motor Mecicles

Tab. 7: Route sections with the highest weekday cross-section load (AWT/24h) for motor vehicles and trucks in 2019

Compared to the last analysis of 2014, the traffic load had decreased slightly across the entire counting network by 2019, although traffic volumes of the heavily travelled roads (> 80,000 vehicles/24h) had increased. While all Federal Motorway routes exhibited a slight increase, the mileage on urban roads decreased by an average of 2.2% compared to 2014 (SenUVK 2021).

Focusing the comparison on load classes with an ADT > 10,000, their share was 27 % of the route length and more than 56 % of the daily mileage in the 2014 analysis, compared to 18 % and 64 % with respect to the 2019 annual count.

Despite an increase in the absolute number of registered cars (57,000 more compared to 2014, cf. Fig. 1), the traffic load (km/day) has thus decreased in the overall counting network. However, the shares are distributed unevenly across the individual load classes.

Although old vehicles with higher emissions are continually being replaced by new cars with lower emissions and the pollutant emissions thus tend to decrease despite an increase in mileage, many other problems caused by traffic, such as tyre abrasion (which is independent of the drive technology), noise pollution and the enormous demand for space of stationary and moving traffic, will remain as a serious impairment to the urban quality of life also in the future (cf. maps [03.11.2 Traffic-Related Air Pollution along Streets 2015 and 2020](#) (SenStadtWohn 2018) and [07.05 Strategic Noise Maps](#) (SenStadtWohn 2017)).

Literature

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Maps

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