

Survey results:

Traffic impact of the combination of measures: Cycle lanes and 30 km/h speed limit on Hermannstrasse

Background situation:

Hermannstrasse is a 2.6-kilometre-long main road connecting the central Hermannplatz square with the A100 motorway in the Berlin district of Neukölln. It is one of Berlin's important north-south connections through a densely built-up residential and business district. On large parts of the road, cycle traffic is routed in mixed traffic on the carriageway. Time and again, dangerous situations arise for cyclists. Cars parked on the side of the road and a high volume of delivery traffic make the situation unattractive and unsafe for cycle traffic.

In March 2019, preliminary planning was completed for a new cycle route to be built on both sides of Hermannstrasse as a cycle lane with a width of at least two metres. The plans envisage a section of the road separated from motorised traffic by bollards and colour-coded along its entire length. This will result in the elimination of about 60 percent of the parking spaces. In the southern section, there will be a shared lane for buses and cycle traffic. In May 2021, a speed limit of 30km/h was introduced along the whole of Hermannstrasse.

In a first construction phase, an 860-metre long section of cycle lane has been installed in the southern part of Hermannstrasse between Glasower Strasse and Thomasstrasse since the end of October 2021. Certain sections will be protected from motorised traffic with steel bollards, while others will be open for bus and cycle traffic. After considerable delays, the construction phase is in its final stages.

As part of the second announced construction phase, the cycle lane will be extended by 570 metres towards the north. Safe cycling infrastructure will also be created between Leinestrasse and Hermannplatz by the end of the 3rd quarter of 2023.



Figure 1: Permanent cycle lane on the southern section of Hermannstrasse + 30 km/h speed limit

Volume of traffic: Surveys commissioned by the Berlin Senate

The number, composition and speed of motor vehicles on Berlin's roads are measured at over 240 locations in Berlin using infrared detectors (so-called TEUs = Traffic Eye Universals). In the southern part of Hermannstrasse, where the cycle lane has already been created, there are two TEU traffic detectors. The traffic detectors are located in the immediate vicinity of the NO₂ measuring point of the SenUMVK, but both detectors failed alternately since the construction of the cycle lane started, which is why modelled traffic volumes from the Berlin Senate Department had to be used. The traffic volume model (IQ Mobility) models hourly traffic volumes for all main roads on the basis of the Berlin traffic model (as at 2014) and the TEU detectors.

The traffic model shows that there has been a steady decline in the number of cars on Hermannstrasse over the last few years. Whereas the volumes measured in 2019 still showed an average of 26,300 motor vehicles per day, in the first half of 2022 there were only 21,900 motor vehicles per day. This corresponds to a reduction of 17 percent.

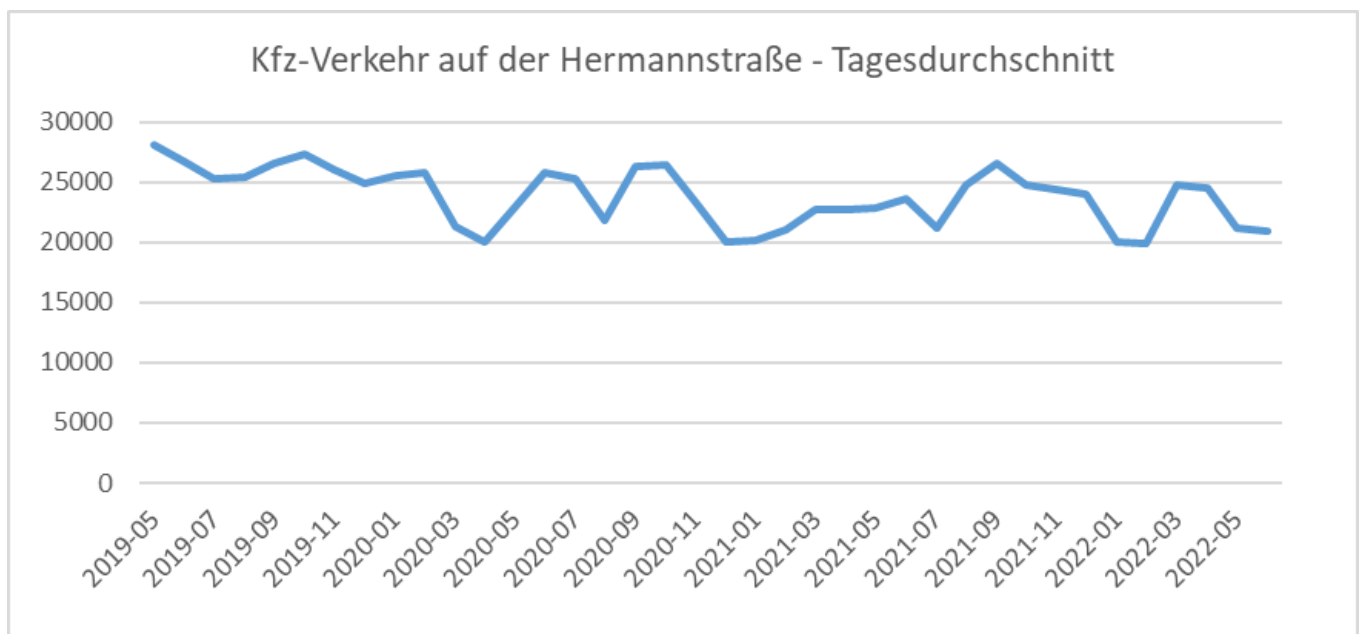


Figure 2: Development of motor vehicle traffic on Hermannstrasse - daily averages. Data from the Berlin Senate Department for the Environment, Urban Mobility, Consumer Protection and Climate Action; Evaluation: Environmental Action Germany

However, no significant and direct correlation can be drawn to the establishment of the cycle lane or the introduction of a 30 km/h speed limit. For example, daily motor vehicle volumes in the first half of 2021 were 22,200 and 21,900 in the first half of 2022. This corresponds to a reduction of only 1.4 percent. At least the cycle lane was able to prevent a rebound in motor vehicle numbers after the end of the pandemic-related restrictions. It should be noted that the IQ model tends to underestimate absolute traffic volumes. However, the relative development is presented plausibly.

Cycle traffic counts using the Strava Metro mobility data platform

The Berlin Senate Department for the Environment, Urban Mobility, Consumer Protection and Climate Action (SenUVK) operates 18 automatic permanent counting stations for the continuous survey of bicycle traffic. There is no cycle traffic counting station on Hermannstrasse, so that other data sources have to be

used to quantify the development of cycle traffic. For this purpose, data from the Strava Metro mobility platform is used.

A comparison with the official figures from the Senate Department shows that Strava records about 1.3 percent of all cycling movements in Berlin - with the trend increasing. The proportion of movements recorded was calculated as an annual average and applied to the figures contained in Strava, so that a statement can also be made for streets that are not covered by the permanent counting stations. For Hermannstrasse, the cycle traffic figures were evaluated at the points where motor vehicle figures are also recorded.

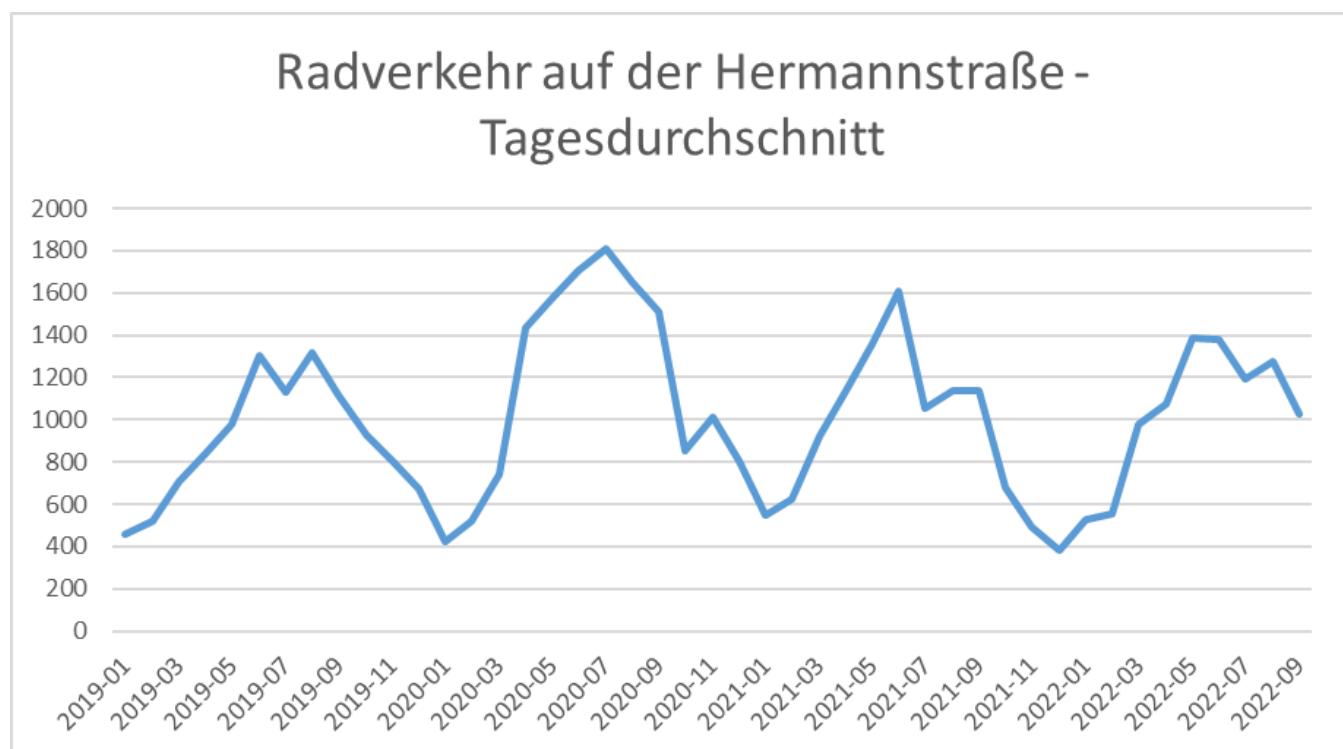


Figure 3: Development of cycle traffic on Hermannstrasse - daily average. Data from Strava Metro; Evaluation: Environmental Action Germany

From January 2019 to the end of October 2021, the number of cyclists on Hermannstrasse averaged 1,030 per day. After the long-delayed start of construction of the protected cycle lane at the end of October 2021 – which has still not been secured with bollards – the number of cyclists has only increased minimally by 1.5 percent. In the period from January 2022 to September 2022, an average of 1,045 cycling movements per day were recorded. The increase is within the range of survey inaccuracy, so it must be concluded that the new cycle lane has had no effect on the number of cyclists.

Air quality: Nitrogen dioxide pollution in Berlin

The Berlin-based SenUMVK operates a measuring station based at the level of Hermannstrasse 120 to measure the concentration of the air pollutant nitrogen dioxide (NO₂), which is mainly due to road traffic. Starting from very high values exceeding the limit value in 2019 (45 µg/m³), NO₂ pollution has gradually decreased over the last few years in parallel with the decline in motor vehicle pollution. Here as well, a direct correlation with the decrease in motor vehicle traffic can be seen, although not one that is directly related to the establishment of the cycle lane.

For the year 2022, the SenUMVK provided DUH with previously unpublished, preliminary and non-validated measurement data. According to this, NO₂ pollution between January 2022 and September 2022 averaged 30.8 µg/m³.

Nitrogen dioxide measurements by Environmental Action Germany (DUH):

In addition, DUH has been carrying out its own measurements of NO₂ pollution since October 2020. The measurements took place further north on Hermannstrasse between Rollbergstrasse and Selchower Strasse, as the Neukölln District Office has promised the rapid establishment of a cycle lane along the entire length of Hermannstrasse. As there is still no cycle lane on this section of Hermannstrasse, the measurement results are only relevant for evaluating the introduction of the 30 km/h speed limit.

In the six months prior to the introduction of the 30 km/h speed limit (11/2020 to 04/2021), the pollution level on this section of Hermannstrasse was 33.2 µg/m³. In the same period one year later (11/2021 to 04/2022), the NO₂ pollution was only 28.2 µg/m³. This corresponds to a reduction of 15 percent.

33.2 µg/m³ at 50 km/h



28.2 µg/m³ at 30 km/h

Classification:

According to the Berlin SenUMVK, the annual average impact of the Corona pandemic on NO₂ pollution in the air we breathe is only 2 µg/m³. The reduction in NO₂ pollution recorded in the current measurements thus clearly exceeds the impact of the Corona pandemic and runs parallel to the reduction in motor vehicle pollution with a clear effect resulting from the introduction of the 30 km/h speed limit.

However, no direct correlation between the establishment of the cycle lane and the development of air quality can be determined. The same applies to the relationship between the establishment of the cycle lane and effects on the composition of traffic. This is plausible for several reasons: The new cycle lane on less than 900 metres of Hermannstrasse ends north of Thomasstrasse in mixed traffic with more than 20,000 motor vehicles daily. To the south of Glasower Strasse, the cycle lane turns into a narrow and uneven high-kerb cycle lane. Thus, the fragment of cycle lane along Hermannstrasse has so far lacked any significance for the network. The already rebuilt section of Hermannstrasse is also not suitable to convince many safety-conscious cyclists to ride along the busy Hermannstrasse due to the lack of protective elements and its repeated misuse as a car park and delivery zone.

It is to be expected that somewhat higher cycling volumes could be achieved through the continuous safeguarding of the cycle lane with protective elements. However, it is of particular relevance to close the gap between Thomasstrasse and Hermannplatz, so that the important north-south connection can be cycled safely and comfortably from outside the S-Bahn ring all the way to Hermannplatz. As soon as this

has been accomplished, a new survey of various environmental and traffic parameters should be carried out.

About the project:

DUH has been working since October 2020 on the project "Pop-up Republic: New Mobility Berlin", which is funded by the international association of cities ICLEI within the framework of the ICLEI Action Fund. The aim of the project is to collect, prepare and analyse environmental data in order to objectify discussions about the transition of mobility. The impact of new cycle lanes – with a special focus on pop-up cycle lanes, parking space management, neighbourhood traffic calming measures and 30 km/h speed limits – on the volume and composition of traffic as well as on NO₂ pollution will be investigated in order to be able to make informed statements about the impact on air quality and climate.

In addition to data on Hermannstrasse, numerous other analyses have been conducted and are published on our website: <https://www.duh.de/handbuch-pop-up-republik/>. These include, among others, the following analyses:

- Kantstrasse pop-up cycle lane
- Kottbusser Damm and Kottbusser Strasse pop-up cycle lane
- Improved cycling facilities Frankfurter Allee
- The traffic-calmed Bergmannkiez
- Tempelhofer Damm bicycle traffic system and 30 km/h speed limit



Status: November 2022

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