

**A13 busiest
national
motorway in the
Netherlands**



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The A13 in the province of Zuid-Holland is the busiest motorway in the Netherlands. Utrecht is the province with the busiest motorways on average, however. These results were announced by Statistics Netherlands after traffic was studied over the period 2011–2014.

In 2014, an average of 2,268 motorised vehicles per hour covered Dutch motorways measured in both directions, which constitutes a 3.9 percent increase on the previous year.

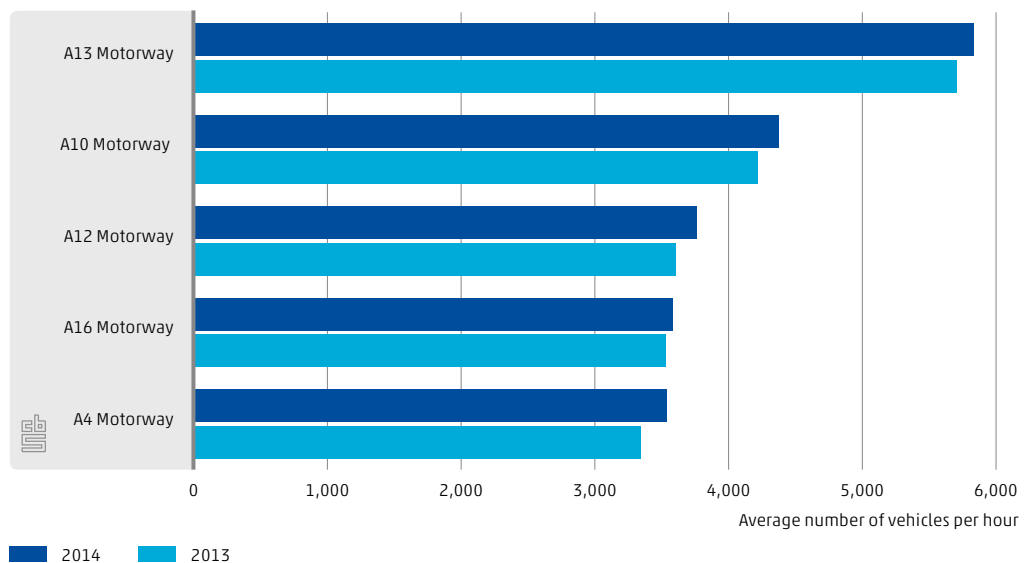
In the same year, the average number of motorised vehicles passing the A13 between Ypenburg junction in The Hague and Stadhoudersweg in Rotterdam every hour reached 5,836. In contrast, motorway 33 between Assen in Drenthe and Eemshaven in Groningen was least busy with an average of 384 vehicles per hour, making its traffic intensity fifteen times lower than the A13.

The number of passing motorised vehicles is counted every minute of the day at around 20,000 measuring stations on the motorway network. These numbers are recorded and stored at the National Data Warehouse for Traffic Information (NDW). Statistics Netherlands has developed a new method of calculating traffic intensity based on this enormous quantity of data.

Top 5

The second highest traffic intensity is on the A10, the ring around Amsterdam, with an average 4,374 vehicles per hour. The top 5 of busiest motorways in the Netherlands is further completed by the A12, the A16 and the A4.

Top 5 Traffic intensities on motorways

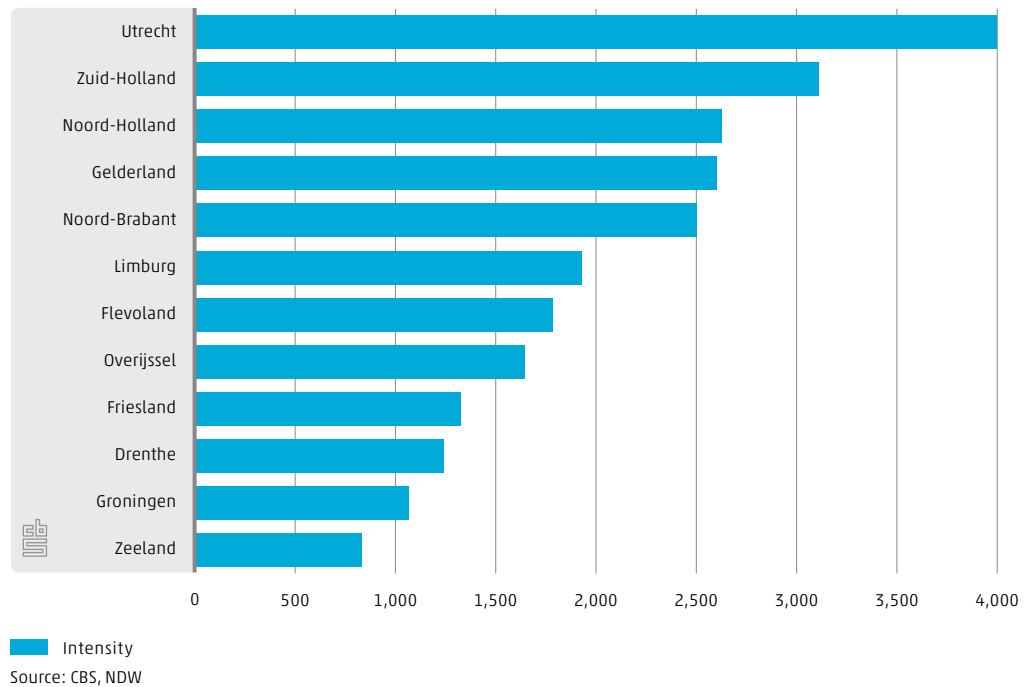


Source: CBS, NDW

Utrecht the busiest province

The average number of vehicles covering Dutch motorways in an hour varies greatly per region. In the province of Utrecht with A1, A2, A12, A27 and A28 as major motorways, the average number per hour in 2014 reached a total of 3,999. This included cars, heavy goods vehicles, buses and motorcycles. This number makes Utrecht the busiest province in the Netherlands, nearly five times as busy as the province of Zeeland, where an average day last year would count on average 831 motorised vehicles per hour on its four motorways A57, A58, A59 and A61.

Average number of vehicles per hour by province, 2014

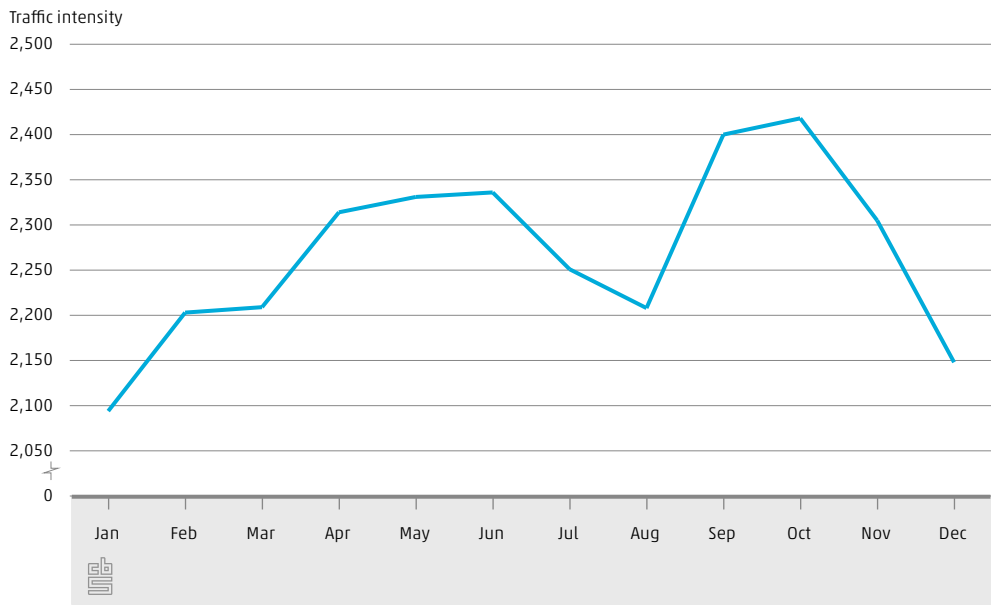


Summer season traffic on motorways

During the summer holidays, large numbers of cars and motorcycles head towards and from holiday destinations. As commuter traffic drops in volume, traffic intensity shows a 'dip'. Regional differences are seen here as well, mainly because of the staggered holidays. In 2014 traffic intensity on highways in Groningen, Friesland, Drenthe, Overijssel, Flevoland and Noord-Holland was lowest in July. In the other provinces except Zeeland, the 'summer dip' fell in August.

Zeeland's motorways actually show an increase in traffic during the summer months due to an influx of tourists. In Limburg, motorways have a relatively low decline in traffic during the summer, as motorists from the northern provinces pass through Limburg on their way to southern holiday destinations in addition to the tourists visiting the province. Traffic volumes go up again in September when most holiday travel comes to an end as schools start again.

Average number of vehicles on motorways per hour per month, 2014



Source: CBS, NDW

What does the survey comprise?

Objective

Compilation of average traffic intensities per hour of all motorised vehicles on Dutch motorways (in numbers of vehicles) broken down by: region, province, COROP regions and the combination of COROP motorways and national motorways.

Target population

All motorised vehicles (excluding mopeds) using the national motorways.

Statistical unit

All motorised vehicles which were driven on Dutch territory (motorways): both vehicles with Dutch and those with foreign license plates.

Date/year survey started

The big data survey based on measuring points was carried out for the first time for the reference year 2011. The traffic data were obtained from the National Data Warehouse for Traffic Information (NDW).

Frequency

Starting 2016: monthly.

The first publication contains figures over reference years 2011 to 2014. Publication will be monthly as of the first half of 2016.

Publication strategy

The figures in this table are still provisional. Monthly figures of a reference year remain provisional until the figures over the whole year have been published.

How is the survey conducted?

Survey type

All data per minute from functioning measuring points on major Dutch motorways are collected from NDW. These data are immediately filtered to remove any distortions. This is done under the assumption that arrival times of vehicles at a measuring point can be described using the Pseudo-Poisson approximation. Once an estimate of the intensity per minute has been made, daily aggregates of the data series are produced combining the various road lanes. After projecting the locations of measuring points on the motorway network and calculating a road section where these measuring points provide a reasonable estimate of the intensity, the average daily intensity is calculated for each combination of road, COROP region and driving direction. These calculations of daily intensities are corrected for trend deviations and extremes. Missing values are estimated as much as possible on a day-to-day basis using methods including structural time series analysis. In case of any further missing values, additional estimates are made on a month-by-month basis.

Observation method

Secondary observation using traffic data from NDW.

Respondents

There is only one respondent for data on Dutch motorways. Statistics Netherlands retrieves the relevant data from records at NDW.

Checking and correction methods

For each combination of road, COROP region and driving direction, daily intensities are checked to detect trend deviations, extremes or missing values. Wherever possible, this is done with the help of available information about road works, calendar data, KNMI data on precipitation and temperature and the traffic intensities of nearby road sections. By using structural time series analysis among others, corrections then take place for deviations and extremes while additions [insertions] replace as many missing values as possible.

The edited daily intensities multiplied by the road length produce the vehicle kilometres per day. These are further aggregated into monthly figures. If a road section contains missing values over one or more months, vehicle kilometres over these months are estimated with the help of figures from the other road sections in the same COROP region. This entails year-on-year development on the road section with missing values made equal to the other road sections. The result is a comprehensive database with vehicle kilometres per month and per combination of road, COROP region and driving direction. This database serves as the basis for computation of the intensities for the various levels of aggregation.

Population size

The number of vehicles is counted every minute at 20,000 points located on the Dutch motorways.

Raising/weighting

The vehicle counts at each measuring point are weighted by road length for each combination of COROP region, road number and driving direction.

Breakdown

The average number of vehicles which is driven down motorways per hour each month is broken down by region (regional groups of provinces, provinces, COROP regions) and by motorways per COROP region. In addition, the average intensities on all national motorways are displayed separately for each time period as well. National motorways are defined as highways and motorways which are managed and maintained by Rijkswaterstaat: the A-roads as well as (certain) N-roads which have been designated as national roads by Rijkswaterstaat.

What is the quality of the results?

Accuracy

The results of the survey are checked for accuracy, comparability and consistency. Accuracy is necessary in terms of design, implementation and application of the used methods. Comparability refers to similarities in the concepts described, the definitions used and the methods applied to deduction of the figures. Consistency refers to the similarity between aggregates and details, but also to the plausibility of the figures. The plausibility is assessed on the basis of other, traffic-related figures and information and the resulting projected situation of traffic intensities.

Assumptions in estimating intensities

The general assumption is made that the information on road works, road expansion, weather conditions and other events is sufficient as to enable assessment of particularly low or high intensities for their plausibility. In addition, the assumption is made that this information will provide sufficient basis for a plausible enough estimation in the case of missing values. Furthermore, several assumptions are made in order to produce a representative figure. For example, in the case of low coverage or malfunctioning measuring points, measuring points which were functioning are considered to be representative for the road sections which were not measured. Also, when filtering data we assume that vehicles arrive at measuring points separately from one another, not simultaneously. Naturally, the latter two assumptions are not based on actual facts but making these assumptions does not have negative consequences for the estimation.

Sequential comparability

Up to and including 2011, traffic index figures were published which were based on counts at around 550 permanent traffic loops monitored by Rijkswaterstaat. The index figures were

based on the development year on year of vehicle kilometres (traffic intensities multiplied by road length of the section where these intensities were recorded). The figures can be found in a table entitled "Traffic intensity: national roads, provincial roads, groups of provinces, 2000=100", which has been discontinued.

The new table contains average traffic intensities as of reference year 2011 and based on traffic data from NDW. Because these are two different studies conducted using different methods, the 2011 figures are not sequentially comparable.

Definitions

Traffic intensity

The average number of motorised vehicles which passes a certain (fixed) measuring point per given time unit. The table combines the numbers of vehicles passing in both directions.

Motorised vehicle

Vehicle designed to be propelled on roads other than railtracks solely or partly by mechanical power, whether on or in the vehicle itself or by electrical traction with steam supply from elsewhere, not including bicycles with pedal assistance.

This includes passenger cars, company cars (vans, trucks, tractors, special vehicles and buses) as well as motorcycles, not including light mopeds. .

Measuring point

A fixed location on a road where passing (Dutch and non-Dutch) motorised vehicles are counted electronically for 365 (or 366) days a year and for 1,440 minutes a day. The data are stored in the NDW database (NDW: Nationale Data Warehouse for Traffic Information). Registration of vehicles is done via detection loops in the road, traffic cameras above and along the road, via bluetooth and via infrared.

National motorways

These are roads which are managed and maintained by Rijkswaterstaat; here referring to highways (A-roads) as well as several/certain N-roads which have obtained the status of national motorway from Rijkswaterstaat.

Group of provinces (LD)

An administrative regional grouping of the Dutch provinces. The Netherlands has 4 groups of provinces.

COROP Region (CR)

A Dutch administrative division on the regional level, in between municipalities and provinces. Designed in 1970 by COROP (literally: the Coordination Commission Regional Research Programme), to which it owes its name. The Netherlands has 40 COROP regions.

Province (PV)

An administrative division of Dutch territory. The Netherlands has 12 provinces since the establishment of Flevoland on 1 January 1986.

Days of the week

The traffic intensities in this table have been computed based on traffic volumes on all days of the week (Monday through Sunday).

Traffic intensity

The average number of motorised vehicles passing a (fixed) measuring point per time unit. The table combines the numbers of passing motorised vehicles in both directions.