



Study of vehicular capacity in the vicinity of Atocha Station (Madrid)

LOCATION	Spain	DETAILS	• Installation of 15 machine vision camera
DATE	2024		
MARKET	Engineering		

The proposed work will determine the traffic flowing through the different designated points, thanks to the gauging campaign carried out by the team of Vectio Traffic Engineering, S.L., consisting of the placement of gauging equipment with artificial vision technology, license plate reading cameras or manual measurements, which will allow to accurately define the vehicular flows on these roads during the study period, segregating these by hourly and daily intensities, in addition to the classification of vehicles circulating on these roads.

In addition to the vehicular flows, the scope of this traffic study includes the execution of the following works:

- Vehicle gauging at various points on the roads around Atocha Station, differentiating between the area outside and inside the station.
- Taking of entry/exit times in the key places of the operation of the road accesses to the station, among which are the accesses to the main parking lots in the surroundings.
- Taking of passenger boarding and alighting times of taxis/VTC, in the cab racks located in the Departures and Arrivals areas of the station.

The following image shows the surroundings of the Atocha Station, where the intersections of the surroundings and the accesses to the station can be distinguished.



Image 1. Study environment. Atocha Station.

The work carried out for the preparation of this study was divided into two phases, which follow the following structure:

- Phase 1. Background and initial meeting. In this first phase, the first work meetings were held, where the general lines of action were established and a first contact was made with the study site.
- Phase 2. Field work and information gathering. The first phase consisted of field work, in which a visit to the area was made to evaluate the area and determine the locations for the gauging equipment. Data collection was carried out by installing the devices at the appropriate points to obtain the correct traffic flows and volumes. In addition, all existing available information regarding public gauging was compiled.
- Phase 3. Data processing and analysis. In the third phase, the data collected in the field work phase were processed, thus establishing a basis on which to analyze the traffic conditions in the environment.
- Phase 4. Diagnosis of the current situation. In the fourth phase, the analysis and diagnosis of the current situation was carried out, based on the information gathered and the data collected in the previous phase, based on the experience of the consulting team.



Image 2. Study area. In the vicinity of Atocha Station.

In order to obtain the required traffic data, the field work campaign includes the following works:

- Installation of artificial vision cameras. These cameras will be mainly used to obtain traffic flows in the station environment, however, in this case they will also be used to determine sometimes, such as access times to the main parking lots of the station, or for the times of passengers boarding or alighting from cabs.
- Installation of license plate reading cameras. License plate reading cameras will be installed at the accesses of cabs to Atocha station, which will make it possible to determine the time they spend inside the station.
- Carrying out manual counts. In this traffic study, the necessary human resources will be used to determine two parameters regarding the operation of traffic in the station. On the one hand, the lengths of the cab and VTC queues during peak hours will be determined, while, on the other hand, measurements will also be taken of the time it takes for cabs and VTC passengers to get in and out of the station.

In this way, the field work will make it possible to obtain vehicle flows, times and queue lengths, which will later be processed, offering as a result different aspects of the traffic in the vicinity of Atocha station.