



## Bologna, Italy

Bologna, the capital of the Emilia Romagna region, is a very important traffic hub. With about 380,000 residents, the city may be classified as medium sized, however, considering the surrounding small municipalities, it is more appropriate to see Bologna as a metropolitan area of about 650,000 inhabitants.

### Why was road user charging introduced to Bologna?

In 1989, to integrate and protect the attractiveness of the historical city centre, and also to improve urban air quality, the municipality introduced a limited traffic zone (LTZ) of 3.2 km<sup>2</sup>, basically matching the historical centre.

The aim of the progressive introduction of traffic restrictions and road user charging is to reconcile mobility demand with the low capacity of the Medieval city centre (for traffic circulation and parking) which, in the past, has often led to such heavy congestion that it distorts both architectural and environmental values and thus produces a very negative impact on the quality of life of the whole historic centre. Moreover, the deployment of IT systems for access control intends to improve urban public transport (UPT) and reduce existing access per-

missions, as foreseen by the new Freight City Delivery Plan, by introducing road user charging policies.

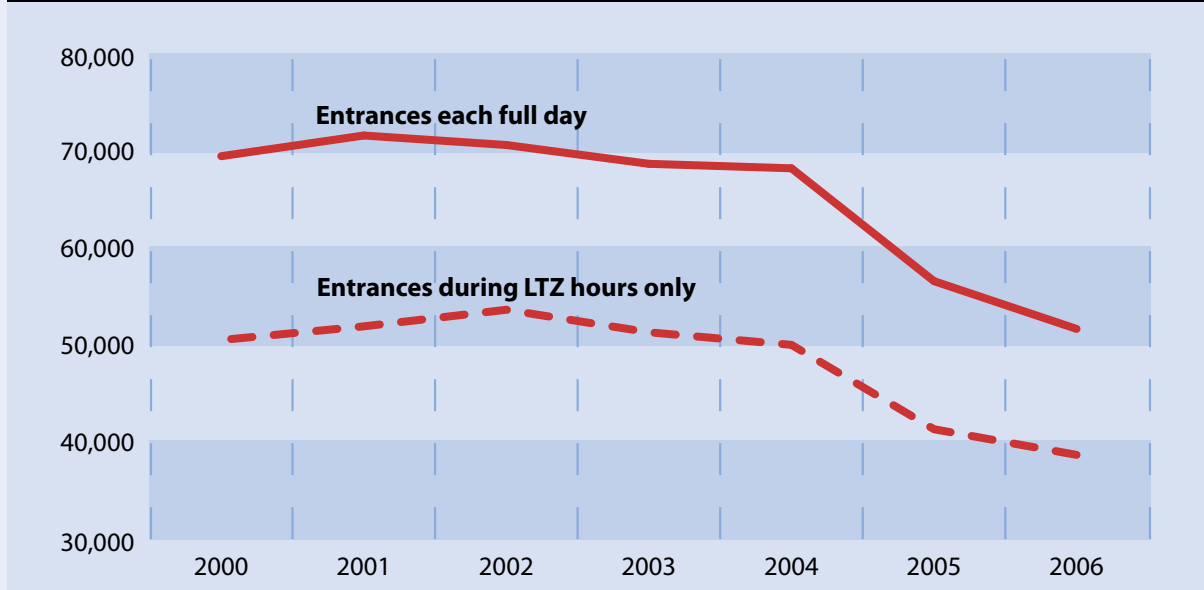
Due to the small size of the LTZ and its narrow streets, the access-control scheme in Bologna is mainly based on an authorisation process (for public transport, residents, freight operators) and not on a general road user charging model.

### What are the features of the Bologna scheme?

The LTZ access is based on an authorising system and since 2005 the municipality has used an IT-based road user charging system called SIRIO involving the installation of 10 cameras at the main LTZ access points.

Between 7 a.m. and 8 p.m. every day except Saturday, the system automatically issues fines to car drivers not authorised to enter the LTZ. All the streets which give access to the city centre are equipped with cameras in order to check if the vehicles accessing in the city centre are authorised. The cameras can read all car plates, check them with those contained in the database of authorised vehicles and, in case of violation, send the transgressor's data to the Municipal Police Department which will issue a fine.

## Workday entrances into LTZ since start of electronic enforcement



## Charging area



Inside the LTZ there is another area called "T," which is very important for public transport; in this area restrictions are tighter than in LTZ and access is controlled by an IT system. Only motorcycles, disabled people, hybrid and electric vehicles, car-sharing vehicles and hotel shuttles are permanently entitled to enter the zone.

Tickets were introduced to allow access to others on an occasional basis. This represents a flexible way to grant everybody (even if with several restrictions) access to the city centre. To avoid an increase in overall access to the LTZ area, such tickets are sold in limited numbers. There are two type of tickets: daily tickets (5 €) and passes valid for four consecutive days (12 €). Each month, only three daily tickets (or just one four-day ticket) can be validated for the same vehicle. These tickets can be bought by operators and citizens.

For validation of the ticket the holder sends a secret

code and car plate number via SMS, web or call centre: if the process is valid, the vehicle is authorised to cross the IT camera control.

## How was the Bologna scheme implemented?

The LTZ was implemented in 1989 while a road user charging policy supported by an intelligent transport system (ITS) was introduced in 2005. At the moment access to the LTZ is regulated by the authorisation policy, which also includes a payment system. The road user charging scheme was launched in the context of the City Freight Delivery Plan (approved in March 2006). That plan was the key instrument through which the City of Bologna has rationalised freight delivery in the city area.

## Impacts of the Bologna scheme

Since the IT system was installed, the number of accesses to the LTZ has dropped by about 20-25%. Moreover, thanks to the introduction of these new road user charging initiatives, the number of freight operator permits has dropped by 27% while the number of total permits (operators plus citizens) has declined by 10%.

## Conclusion

Due to the successes mentioned above, Bologna is now going to extend the LTZ by 14 hectares (+4.4%) and install new "SIRIO" and "RITA" cameras.

