

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



Panteia
Research to Progress



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

Secured Truck Parking Areas are necessary to serve the long distance traffic between towns and regions.



It is important that sufficient Secured Truck Parking Area are provided but not too many to avoid constant disruption to the mean flow of traffic by constantly exiting and joining traffic.

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author.
The European Union is not responsible for any use that may be made of the information contained therein.

Secured Truck Parking Area network

The road administration should have a Secured Truck Parking Area implementation policy and develop a Secured Truck Parking Area network. In adopting uniform spacing standards between rest areas, drivers can be sure they will find services and stop location at a regular spacing distance.

STUDY ON SAFE AND SECURE PARKING AREAS:



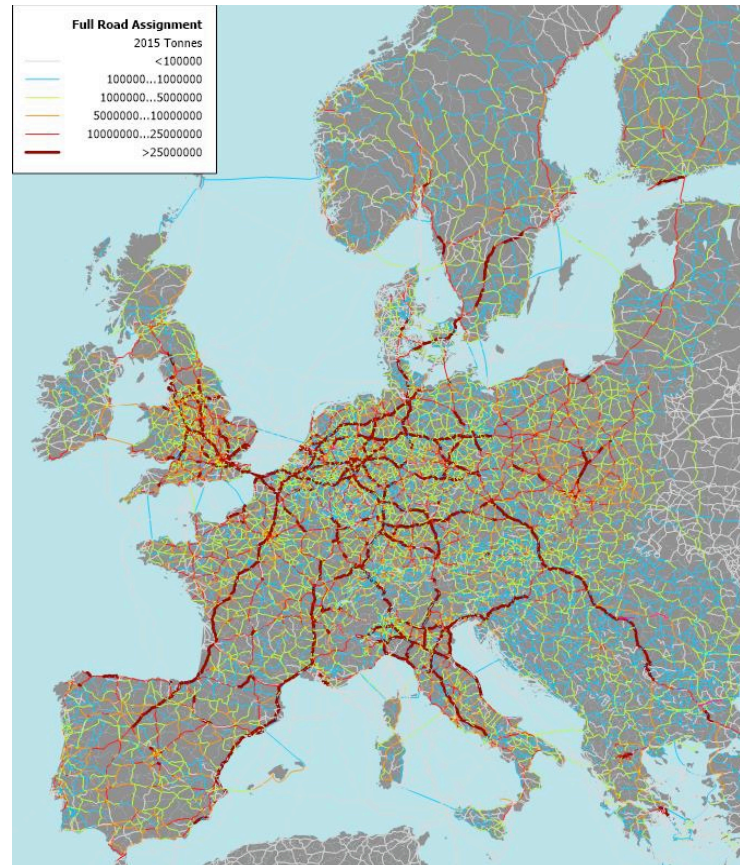
STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.



Long Distance Road Freight Assignment - All Segments, 2015

Basis

STUDY ON SAFE AND SECURE PARKING AREAS:



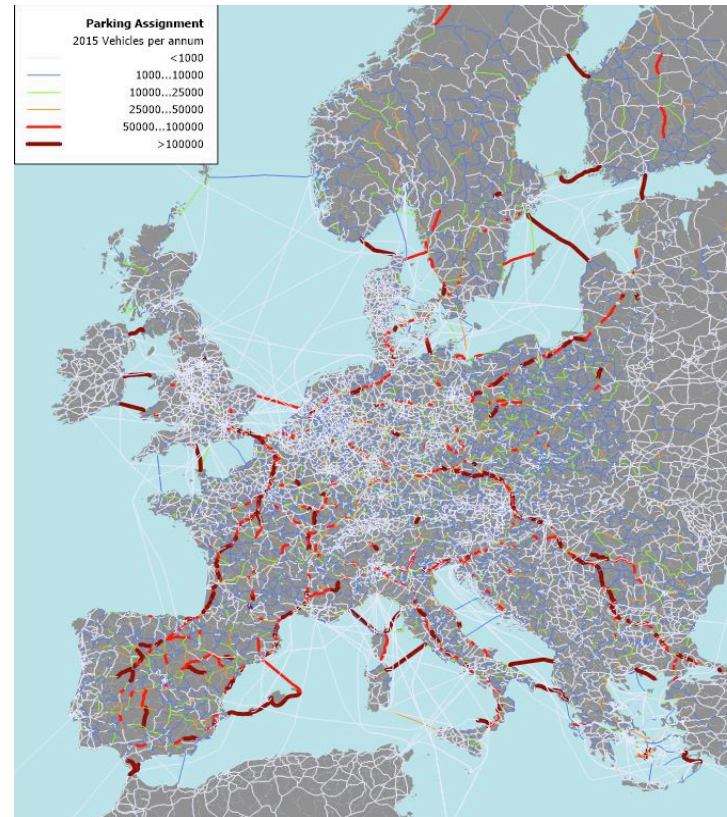
STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.



**Estimation of Demand for Overnight Parking, 2015 basis,
Annual Vehicles per Link**

STUDY ON SAFE AND SECURE PARKING AREAS:



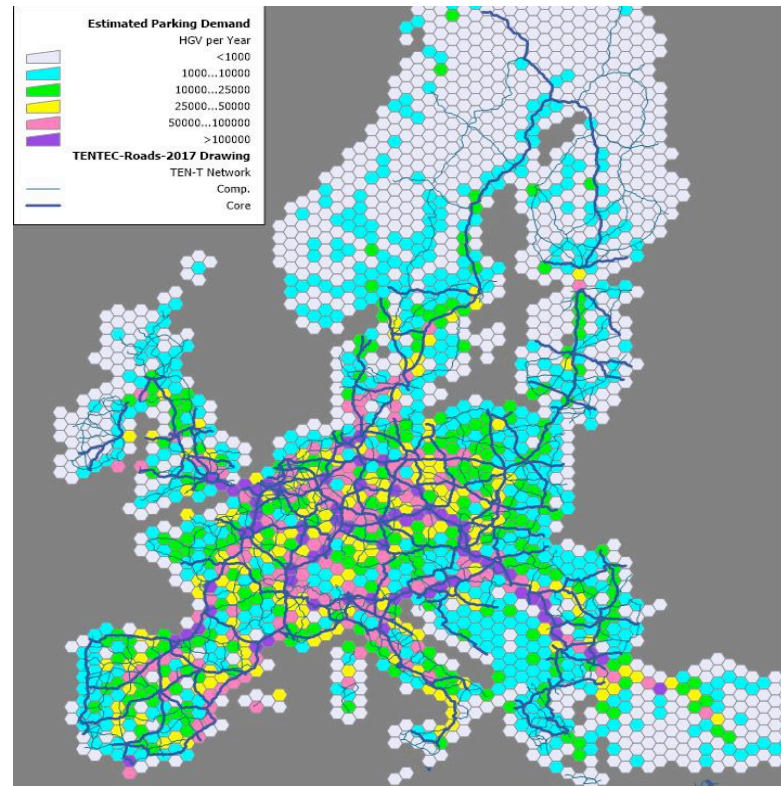
STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.



**Estimation of Demand for Overnight Parking, 2015 basis,
Annual Vehicles per Link**



Planning principles for Secured Truck

Parking Area:

- • **Distances between areas**
- To provide possible Secured Truck Parking Area every half hour, a distance of not more than 30 km between the Secured Truck Parking Areas is recommended if the traffic flow is high. The number of petrol stations depends on a number of factors including the type of vehicles using the road. It is also important to have Secured Truck Parking Areas and petrol stations on both sides of the road to avoid the dangerous crossing manoeuvres

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



Panteia
Research to Progress



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author.
The European Union is not responsible for any use that may be made of the information contained therein.

□ • **Entry / Exit**

- The entry to and exit from Secured Truck Parking Area should be located either at a safe distance away from other junctions or integrated in the junction to minimize the points of conflict. The entrance to and exit from Secured Truck Parking Area needs a special lane for slowing down and accelerating respectively.

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

- • **Design**
- The near side Secured Truck Parking Area and station should come before the one on the off side. Sufficient visibility, small gradients ($< 4\%$) and enough parking places are factors to be considered.
- The Secured Truck Parking Areas should be provided with toilets, shower, food and drink vending facilities. Shade from trees or other shelter is important to attract drivers.
- It is important to erect signs in advance of a Secured Truck Parking Area, to inform the road users and thereby avoid emergency manoeuvres.

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



Panteia
Research to Progress



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author.
The European Union is not responsible for any use that may be made of the information contained therein.

- • **Security**
- Full visibility from the road to the whole parking area gives more secure against robbery and attacks. Lighting and alarm buttons will also aid security. Video surveillance can also be used.
- Exterior lighting, and particularly for parking area and pathway, contributes to the safety of the Secured Truck Parking Area users.

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



Panteia
Research to Progress



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

Problems in SSTPA and their treatment

- **Driving in the wrong direction**
- **Problem:** After having a break or while looking for a parking place some drivers lose their orientation and use the entry to get back on the motorway. Driving in the wrong direction can cause a fatal accident.
-
- **Treatments & Their Benefits**
- **T1: Warning signs**
- This low cost solution rapidly draws drivers' attention to the danger area ahead.
- **T2: New markings and signs**
- These give more information to the driver for going in the right direction. For example, the red marked area guides the vehicles in the right direction. This is reinforced by the use of signing.
- **T3: Reconstruction of the area**
- Building a new state of the art Secured Truck Parking Area reduces the probability of driving in the wrong direction.

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



Panteia
Research to Progress



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author.
The European Union is not responsible for any use that may be made of the information contained therein.

- ❑ **Entry/Exit with high longitudinal gradient**
- ❑ **Problem:** A gradient of more than 4° causes problems when leaving or joining the main carriageway. In particular, it takes a long distance for heavy trucks with less engine power to get up to speed.
- ❑ **Treatments & Their Benefits**
- ❑ **T1: Close the area for heavy vehicles by using signing**
- ❑ The treatment is a very low cost solution. However, this depends on there being enough areas for heavy vehicles within an appropriate distance.
- ❑ **T2: Introduce a reduced speed limit in the vicinity of the rest area**
- ❑ This is another low cost solution. The reduced speed limit, which is legally enforced, is introduced on the road in the vicinity of the rest area.
- ❑ **T3: Build new acceleration lanes**
- ❑ New ramps and long acceleration strips are built to give vehicles the opportunity for speeding up to match the speed of the traffic on the main road.
- ❑ **T4: Reconstruct area in a different location**
- ❑ Close and rebuilt a new area where the gradient of the road is less than 4°

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



Panteia
Research to Progress



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

- **Pedestrians are not protected**
- **Problem:** Pedestrians within the Secured Truck Parking Area are not protected from the traffic. This can be caused by:
 - • the wrong location of the parking areas in relation to facilities such as toilets and shops, and
 - • the incorrectly placed or omission of pedestrian walkways in the trafficked areas.
- **Treatments & Their Benefits**
- **T1: Introduce a speed limit**
 - Introduce and sign a speed limit of less than, for example, 30 km/h on the whole of the rest area. The lower speed should reduce the likelihood of accidents.
- **T2: Redesign and/or remark pedestrian walkways**
- **T3: Improve lighting in the vicinity of walk-ways,** to increase the visibility of pedestrians.
- **T4: Redesign of the Secured Truck Parking Area to change the location of the facilities**
- If the location of the facilities is reorganised the crossing points between the parking area and the service area can be reduced.

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



Panteia
Research to Progress



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author.
The European Union is not responsible for any use that may be made of the information contained therein.

- **Problems:** : Truck parking takes place in unsafe areas because there are not sufficient parking spaces to match demand.
- ***Treatment Types & Their Benefits***
- **T1: Increase number of parking spaces**
- The number of parking spaces is increased to avoid the risk of parking in unsafe areas. Because of the oneway operation of most Secured Truck Parking Area, angle parking is recommended.
- **T2: Provide separate parking spaces for different type of trucks**
- The parking spaces should be designed taking account of the expected usage of the service and Secured Truck Parking Area by different types of trucks (trucks with frigo, ADR etc).

STUDY ON SAFE AND SECURE PARKING AREAS:



STUDY ON SAFE AND
SECURE PARKING
PLACES FOR TRUCKS
MOVE/C1/2017-500



Panteia
Research to Progress



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



This study is funded by the European Commission. The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

- **Secured Truck Parking Area signing**
- **Problem:** Drivers must know where Secured Truck Parking Area are located so that they can plan where to stop. The location of Secured Truck Parking Area must be well signposted well in advance.
- ***Treatment Types & Costs***
- T1: Install signs notifying of Secured Truck Parking Area to provide drivers with information on Secured Truck Parking Area and the distance to go before arrival.
- T2: Secured Truck Parking Area network Adopt uniform spacing standards depending on the traffic flow. This provides consistency in distance between rest areas.
- ***Treatments & Their Benefits***
- **T1: Signs**
- Secured Truck Parking Area signs indicate the availability of a roadside area where drivers may rest. The services provided on the site should be shown on the signs with appropriate pictograms. A sign indicating the distances to the two next Secured Truck Parking Area should be placed 2 km from the rest area's access ramp.