



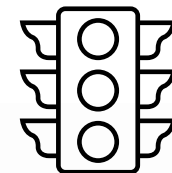
Smart Transportation Alliance

2020 Annual Conference
& Innovation Awards

**Road maintenance in Spain, United
Kingdom, Germany, France and
Italy:
A comparative study**

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Key conclusions of a study commissioned by the Spanish Association of Road Maintenance and Exploitation Companies (ACEX) comparing five target countries in the following areas:

- Legal and institutional framework,
- Scope of maintenance and exploitation activities,
- Bidding and contracting processes,
- Financing, and
- Specific characteristics of the sector.

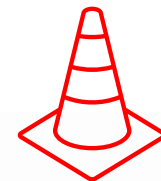


The original study is in **Spanish language** and there are important differences in the terminologies used in different countries. The terminology originally used is:

- **‘Explotación’** (exploitation) focus on keeping the infrastructure permanently on service
- **‘Conservación’** (structural maintenance) delay the process of degradation of infrastructure elements
- **‘Mantenimiento’** (routine maintenance) ensure that the road works permanently



In target countries the terminology used is different and may include different activities



Data available is **scarce**, difficult to find and very **heterogeneous**:

- Routine maintenance, or structures such as tunnels or viaducts may be included, have a separate budget, or be accounted for as an operating expenditure.

Comparison has been limited to national road networks (central state)

No data specific to the expenditure for type of road (motorways or conventional roads). The 'equivalent Km' approach was followed = 1 Km of motorway is equivalent to 2.1 Km of conventional road



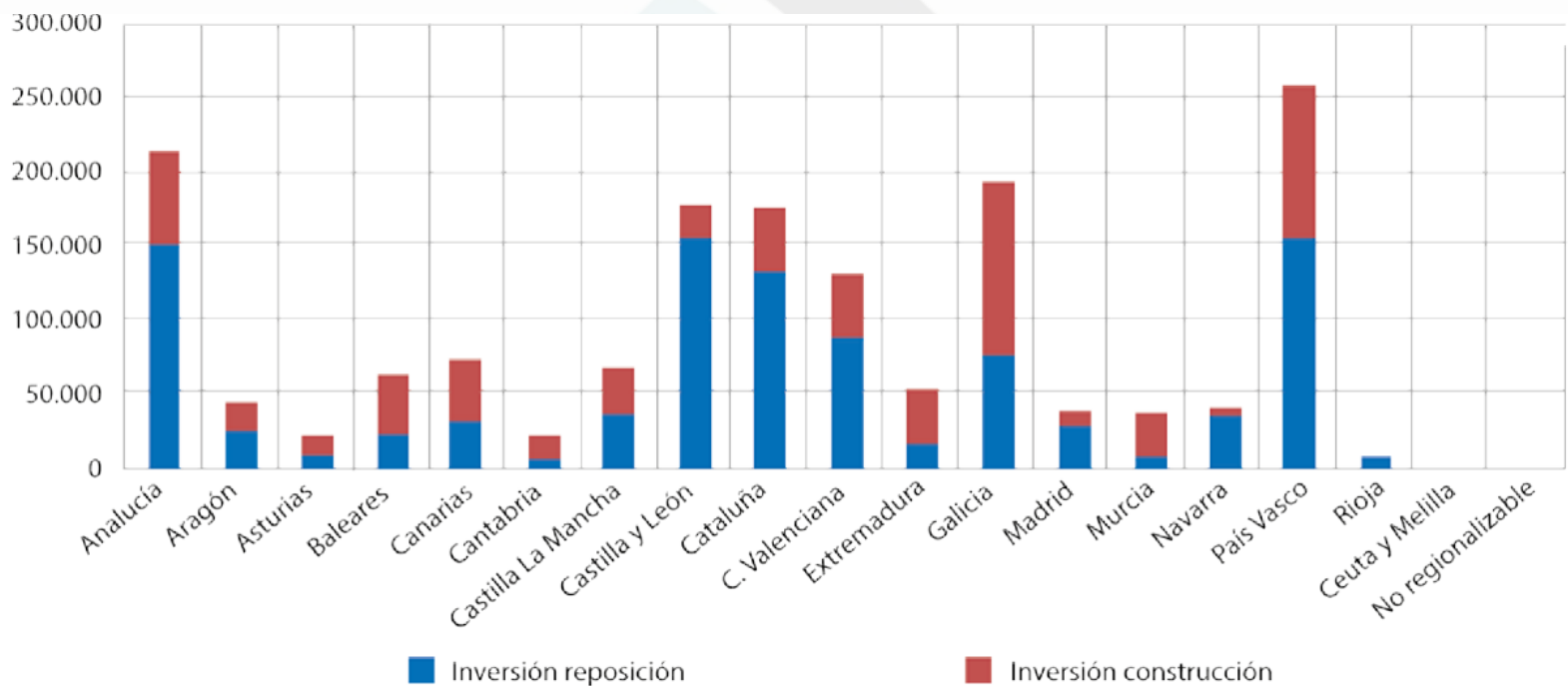
Different proportion of types of roads, age of the network, and geographic/climate characteristics must be considered



Total Network (motorways + conventional roads)					
	Spain (2017)	United Kingdom (2017)	Germany (2017)	France (2015)	Italy (2017)
Total National network (Km)	23,950	6,920	50,800	12,100	23,976
National network (Km equivalent)	33,795	10,763.7	64,880	14,630	25,399
Total investment in national network	760,000,000	1,164,000,000	3,194,000,000	395,000,000	1,055,000,000
Average investment in (€/Km)	31,732	168,208	62,874	32,644	44,002
Average investment in (€/Km equivalent)	22,489	108,141.25	49,229	26,999	41,536

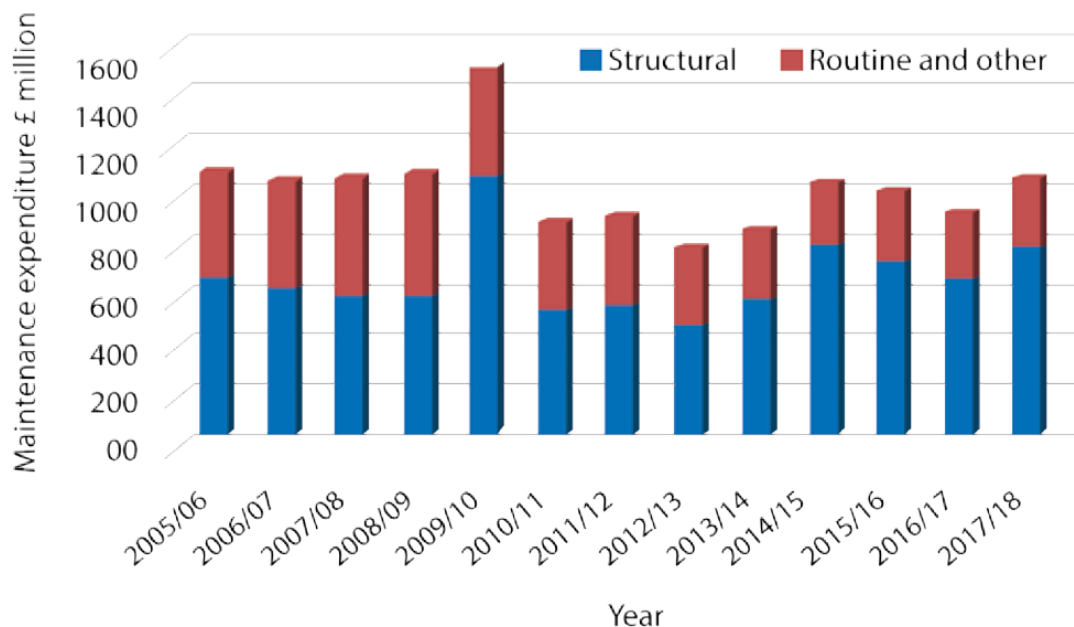
Figures corresponds to replacement investments from Spanish Ministry of Public Works (*Ministerio de Fomento*).

Cost of first generation highways (1,000Km) has been deducted resulting in an actual investment of 760 million Euros.



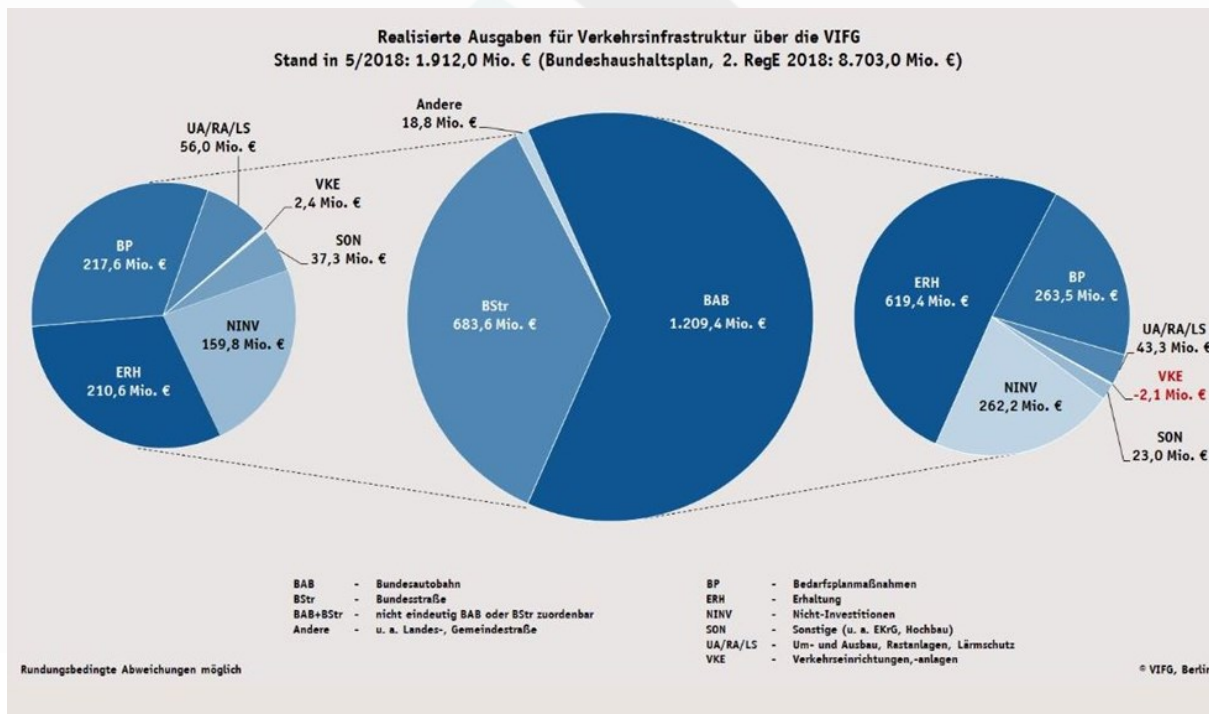
Only the Strategic Road Network (SRN) managed by Highways England (HE) network has been analysed. 50% of this network are motorways

The budget included was reported by ORR (Office of Rail and Road) and the British Department of Transport



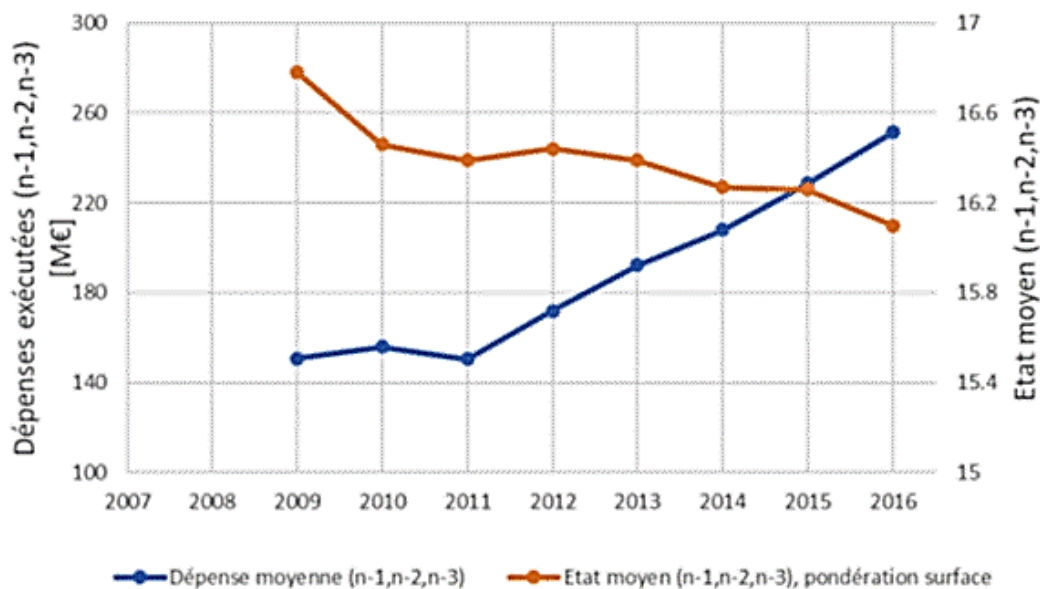
Figures published by the Transport Infrastructure Financing Company (VIFG) responsible for federal highways and roads.

Maintenance activities are not specified in the budget



Germany: Expenditure in federal roads. Source: VIFG

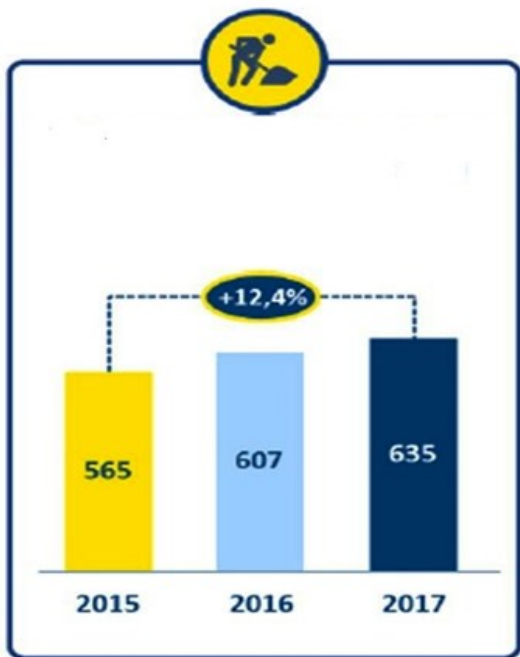
Latest budget available from the General Directorate of Transportation and Sea Infrastructures (315 million Euros) dates back to 2015. Additionally, 80 million Euros were contributed by the toll concessionaires that year



France: Evolution of expenditure (blue) and road condition (Orange). Source: Nibuxs

Figures published by national company **ANAS** (Ordinary and Extraordinary maintenance)

Only a small part of the network managed by ANAS are motorways (5%)



ITALY: Expenditure in Ordinary maintenance. Source: ANAS



Growing concern regarding current condition of older networks that currently support a traffic density much higher than that for which they were originally designed

- **France:** Budget Increase + decentralisation did not stop deterioration of the road network
- **Germany:** Negative investments 2013-2016
- **UK:** HE Strategic Road Network is relatively well maintained, but local road network has been neglected.
- **Italy:** Fall in maintenance spending in 2008-2009. Average road condition below standard, specially on provincial and regional roads
- **Spain:** insufficient resources have been allocated to routine maintenance



A road maintenance model must guarantee:

- A stable allocation of human, material and management **resources**
- A systematic **methodology for decision-making** regarding maintenance operations
- The evaluation of the **performance and quality of the service**
- **Research and innovation** in this field should be promoted and receive adequate funding
- An adequate **management and monitoring** of the network
- Maintenance and **road safety** are close related
- Adequate maintenance requires investment of **2% of total value** of the infrastructure



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The objective of the study was to develop a solid comparison of the existing methodologies and practices of road maintenance and exploitation, as well as the economic and budgetary approaches in five ‘target’ countries: Spain, the United Kingdom, Germany, France and Italy.

Read the STA Technical Report [here](#).

The full study can be found [here](#) (only in Spanish)



Smart Transportation Alliance

**THANK YOU
FOR YOUR
ATTENTION**

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