



*Institute for Roads, Streets and Infrastructures for Mobility (IDRRIM)*

## White Paper

"Maintaining and preserving  
the transport infrastructure assets:  
a requirement for France"



PAVEMENT PRESERVATION & RECYCLING SUMMIT

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# FOREWORD





> Roads : robustness and durability linked to the materials they are made of (stones, cement and bitumen)

**But our infrastructures and the services they offer are not eternal :**

- > Functional qualities which decrease under the effects of weather and traffic
- > Time scale of the infrastructure vs political and economic calendar

**How guarantee their durable quality and performance by regular maintenance expenses, long life investment and reconstruction at end of cycle ?**



## Transport infrastructures : a particularly conducive field to the "gray debt" or "invisible debt"

- › Saving on maintenance and delaying maintenance investment may look like keeping a good balanced budget
- › But the **decline in the real value of the stock and the effects on the level of service** will appear a few years later, requiring an investment **2 to 4 times higher** to bring back its utility to the infrastructure

### To meet these needs:

- › **2012** : launch of the study "Management and Maintenance of Urban and Road Heritage: Methods, Tools and Techniques" (GEPUR)
- › **2014** : Publication of the IDRRIM's White Paper to sensitize policy makers (state and local elected officials) on the need to maintain and preserve the public heritage

TRANSPORT  
INFRASTRUCTURE : | 1  
BACKBONE OF  
ECONOMY



## **Maintaining the quality and performance of the transportation system : a key issue for a nation and its economy**

- > A public heritage, guarantee growth and attractiveness
- > The quality of French transport infrastructure (road, rail, port and airport) : 2<sup>nd</sup> place in Europe and 3<sup>rd</sup> in the world in terms of attractiveness for foreign companies wishing to set up outside their own country
- > France's attractiveness for foreign direct investment: 3<sup>rd</sup> world behind the US and China (Hong Kong included).

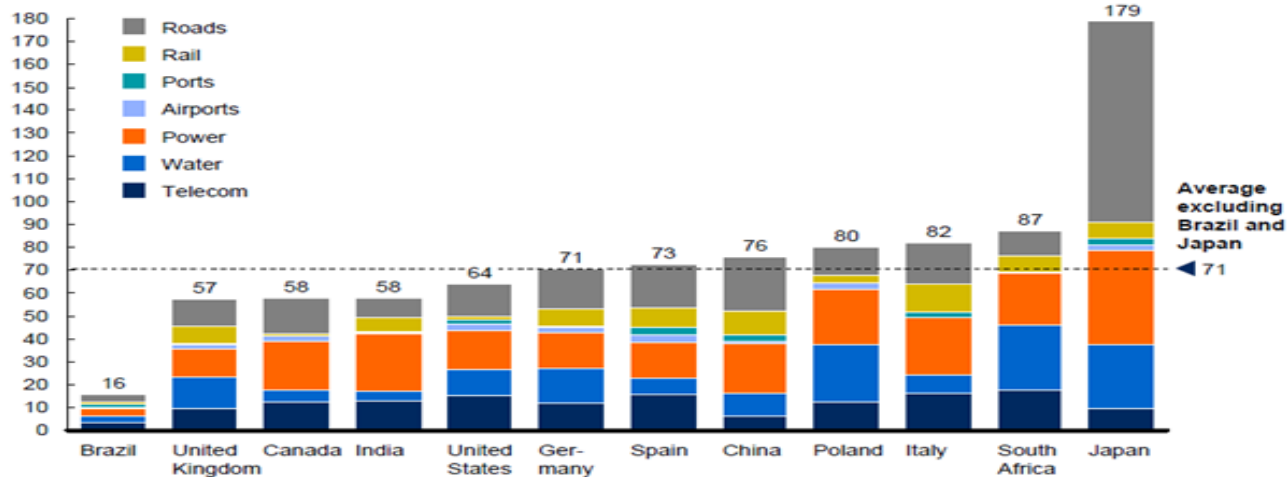


# Value of the stock of infrastructure to GDP of different countries (depreciated value)

France, with a value of 75% of GDP, ranks in the middle of countries ranging from 57% for the UK to 87% for South Africa

**The value of infrastructure stock averages 70 percent of GDP— with significant variation across countries**

Total infrastructure stock  
% of GDP



SOURCE: ITF; GWI; IHS Global Insight; Perpetual inventory method, OECD, 1998; McKinsey Global Institute analysis



## **GDP growth and growth in the value of the stock of infrastructure: a direct link**

Underinvestment or lack of maintenance means:

- risk of impairment
- progressive inadequate services for which the infrastructure was designed
- disruption of the local or national economy
- risk to users

Let deteriorate the intrinsic quality of the heritage returns to :

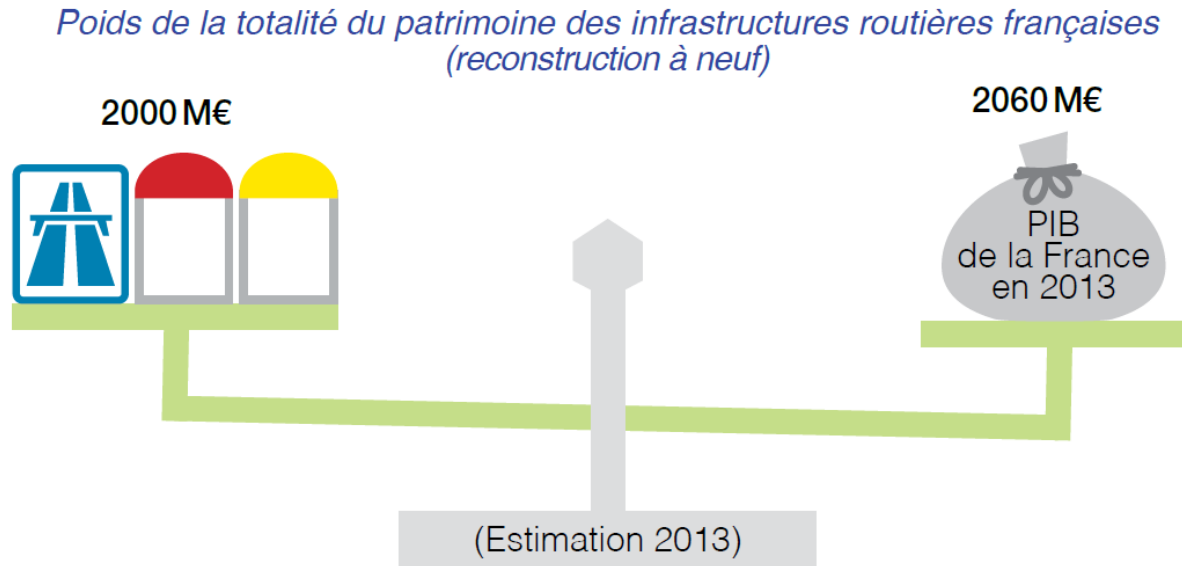
- › depreciate gradually heritage value, since can no longer provide the expected services
- › take the risk of not being able to repair it if its use was impossible



MAINTENANCE:  
AN INVESTMENT  
FOR THE FUTURE | 2



## Estimated Value (reconstruction) of French heritage : 2000 billion, almost the equivalent of the annual GDP



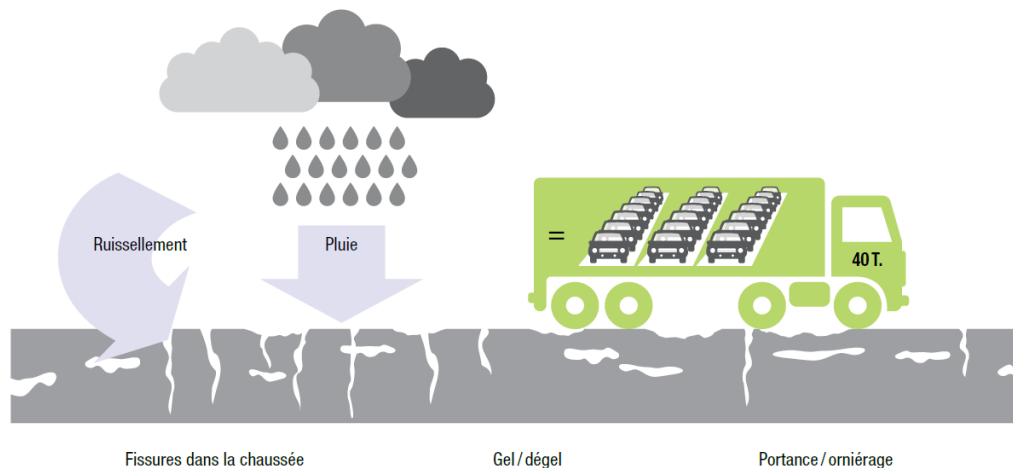
4 IMPERATIVES  
FOR POLITICAL  
DECISION | 3

# 1 | Know infrastructure assets

- › Diagnose the state of the networks
- › Identify the main causes of aging infrastructure and measure their impact on the cost of maintenance:

*water in all its forms (frost, defrost) and heavy vehicle traffic*

*Facteurs d'usure des chaussées*





## 2 | Determine the financial appraisal of infrastructure assets

- › Several approaches exist:
  - cost of replacement as new used by the French State
  - the method prescribed by public accounting of local authorities taking into account the partial elements, without amortisation
  - other proposals used to parallel GDP and stock value of infrastructure.

*The study GEPUR will propose an evaluation model*



## 3 | Prioritize service levels and optimize maintenance techniques

- › Adapt current maintenance activities to each category, optimize by affecting preferentially where the economic impact is the greatest.
- › Find the optimum trying to take into account both the costs and the service rendered immediately, without forgetting and jeopardize long-term economic model.



## 4 | Choose the best contractual relationship during the construction phase

- 1) Contracts with an approved program in a multi-year plan
- 2) Form of performance-based, medium-range contract - 5 to 10 years- on all or part of the road asset
- 3) "Turnkey" contract according to the "Design Build Operate Maintain" model
- 4) Public-private partnerships

whatever the solution, it is absolutely necessary to have the quantity and quality of the assets, and prioritization of the network.

=> a programming work to optimize the infrastructure life

A MAJOR  
POLICY ISSUE | 4



- › **Transportation: 3<sup>rd</sup> concern of French** after the safety and quality of housing
  - › **Guarantee the fundamental right of all citizens to move freely, even in the most remote areas and less dense:** move in conditions of comfort, fluidity and security, regardless of the mode
- => A political challenge and an imperative to act**

Policy makers must pay attention to transportation infrastructure too often based on new -related accidents or weather events

4 KEY MESSAGES  
FOR PUBLIC POLICY  
MAKERS | 5

# CONCLUSION

- › Transport infrastructures are a public property
- › Transport infrastructures are the backbone of the economy
- › Preserving a heritage that is worth more than 2000 billion
- › Maintaining infrastructure is an "investment" for the future