



18TH ROAD SAFETY CONFERENCE

9th March 2026, Chambéry

Resilience of Infrastructure
Facing Catastrophic Weather
Events to Enhance Road Safety

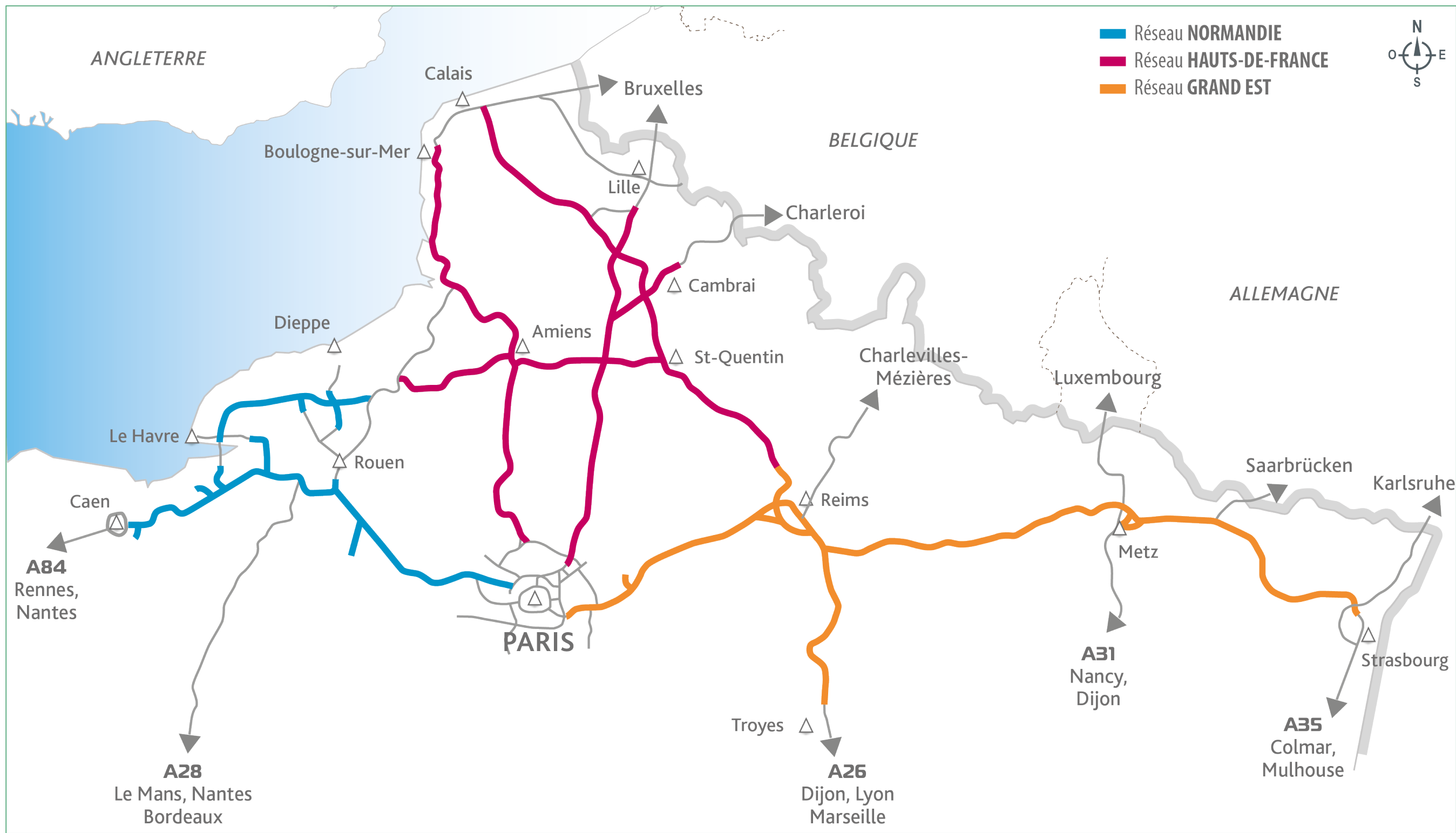
Julien CASTRES SAINT MARTIN
Sanef



Hosted by



Key information about Sanef



2 main concession contracts in the North of France

1807 km of highway
2000 employees
2 Bn€ turnover

Part of Abertis group (pure player managing 8000 km of highways worldwide)

Pioneering spirit, for example with freeflow tolling in Normandy

Age of infra up to 60 years
Average age > 40 years

Main weather events in our regions

Risks affecting the infrastructure in our regions, with a high evolution factor in the coming years :

- Flooding with various causes
- Landslides / rockfalls
- Storms
- Heatwaves & fire
- Clay shrinkage & swelling

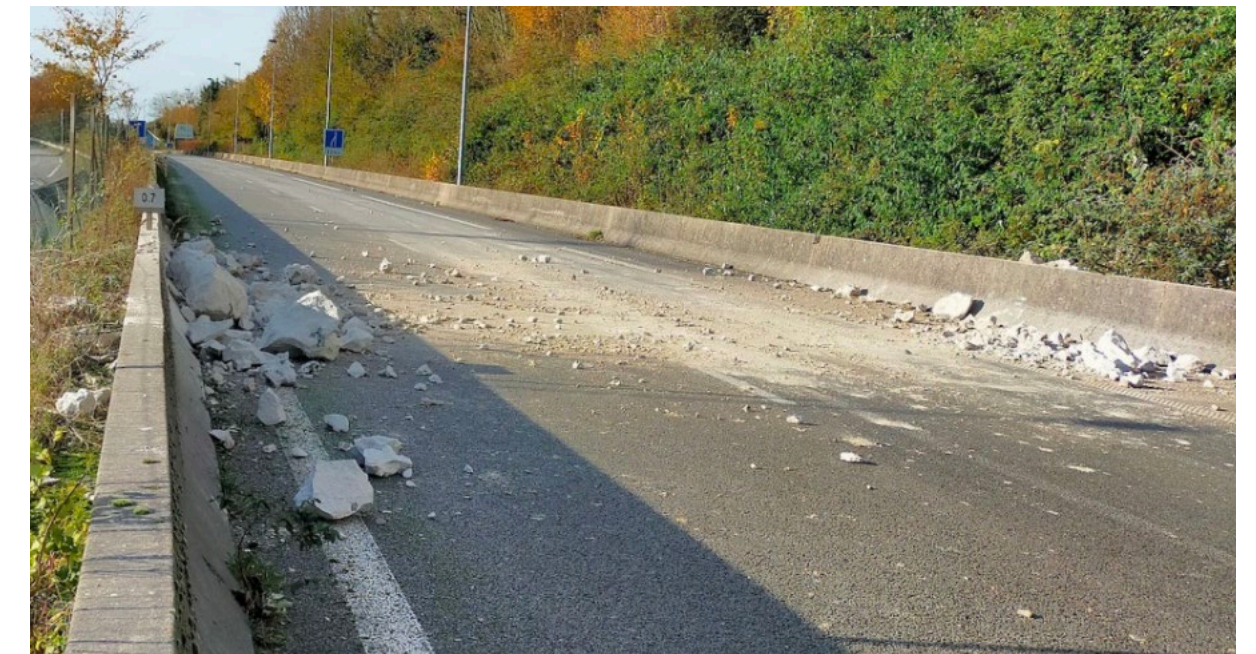


Focus on flooding :

Flooding is a risk that is already existing in all our regions.

Consequences are both functional and physical. Causes and consequences involve both the highway and its surroundings.

The risk will increase in the coming decades, in both intensity and frequency.



Turning point : the end of resilience by design

Our infrastructure was built higher than the highest water levels ever, with effective drainage and hydraulic structures...



Highway above flooded secondary roads



... but the climate and the environment are changing, never seen causes have unexpected consequences



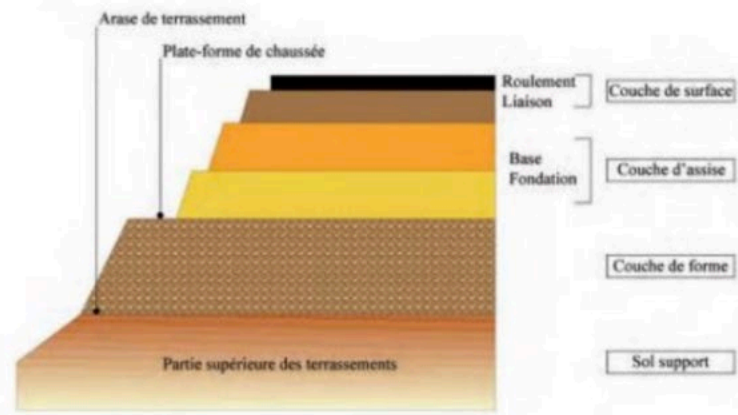
Flooded highways

<<<
2 days
in 2016

>>>
1/2 day
In 2018



Monitoring, readiness and maintenance



Resilient pavement structure



The infrastructure condition is closely monitored.

- Subaquatic inspections of bridge foundations,
- Yearly inspection of all critical hydraulic infrastructure,

People & systems are ready to deal with a situation.

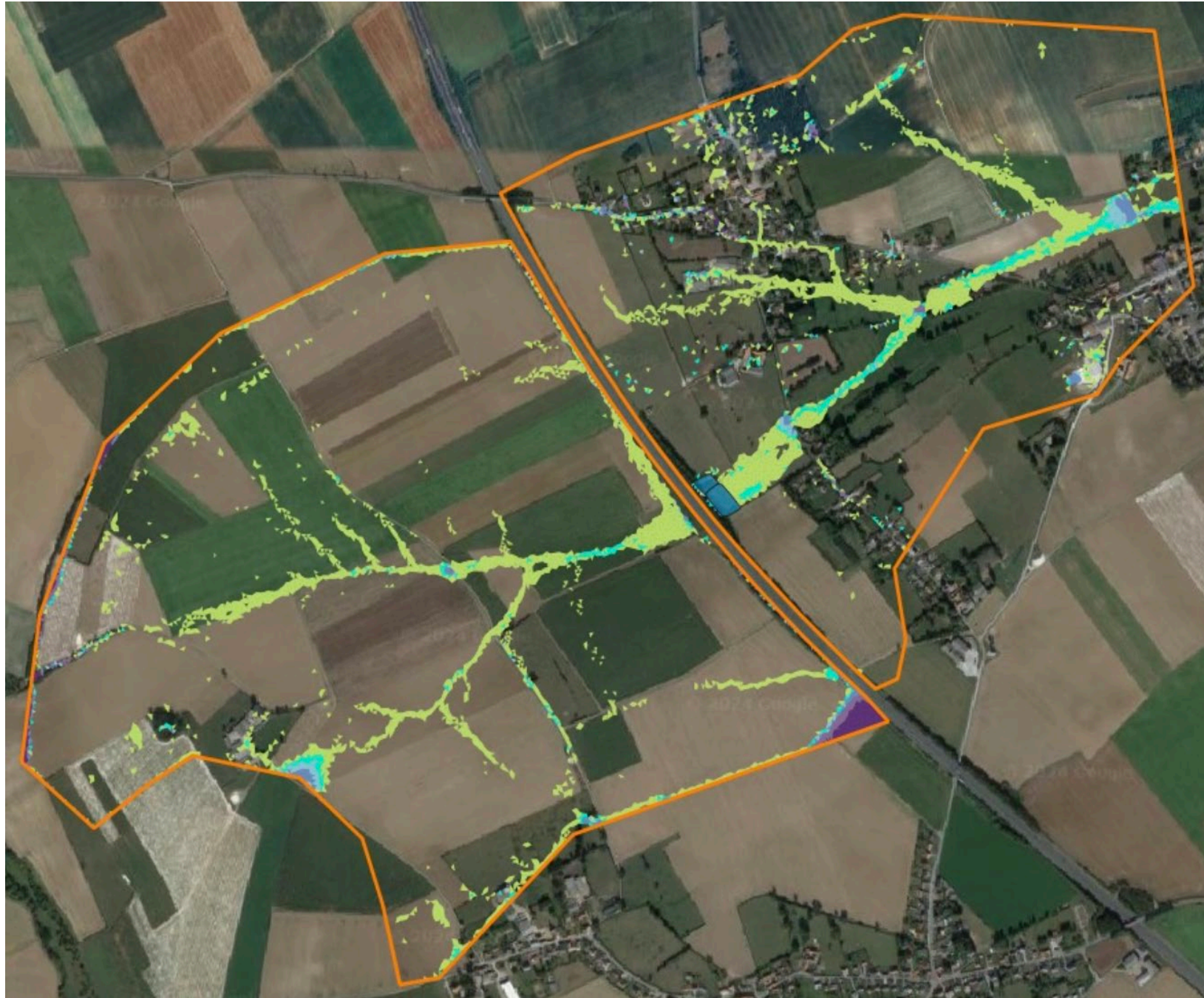
- Daily patrols,
- Availability of traffic management systems,
- Crisis management procedures

Maintenance is key to all the above, and preventive actions are taken.

- Design improvement to mitigate future risks,
- Specific actions to reduce exposure.



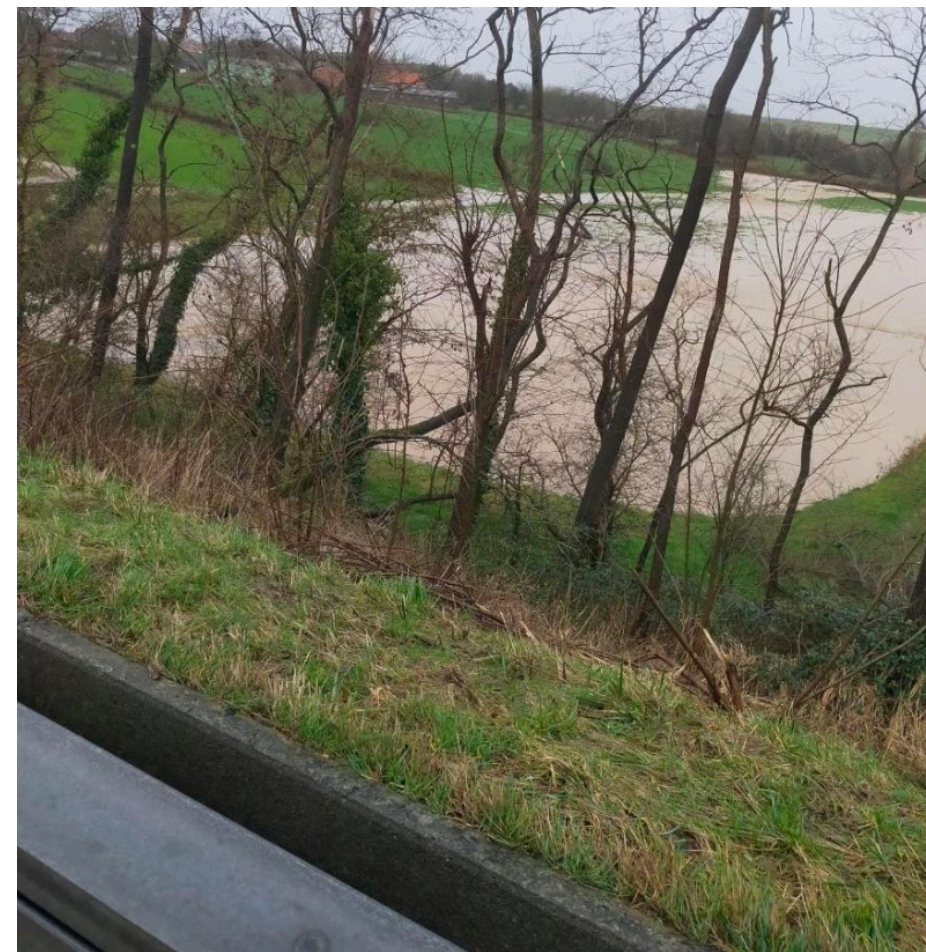
Infrastructure adaptation



Adaptation projects are complex :

- Need for new design standards.
- Include environmental changes- external stakeholders
- Find a financial rationale

Projects should be thought to protect the infrastructure, and also make the surrounding territory more resilient



THANK YOU

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