(Japan, 2004)

(Burkina Faso, 2009)

CLIMATE CHANGE ADAPTATION AND RESILIENCE STRATEGIES FOR URBAN MOBILITY

07/10/2022

SUSTAINABLE MOBILITY AND CLIMATE WEEK 2022

RESALLIENCE

RESALLIENCE

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CONSULTING

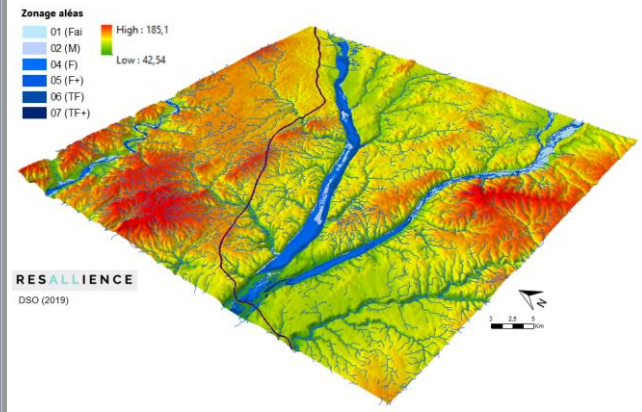
- Vulnerability assessments and impact studies
- Technical and financial evaluation
- Training, audits and compliance

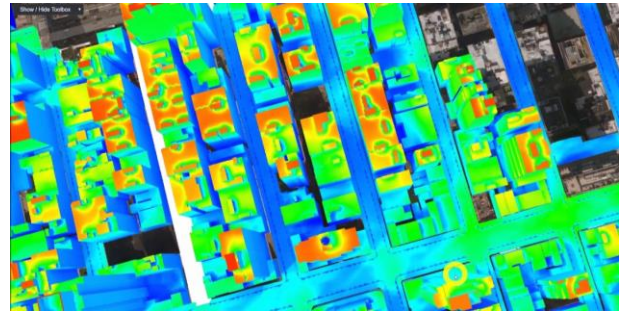
MODELLING

- Predictive maintenance and monitoring
- Weather and climate data services
- Functional engineering through stress tests

PROJECT COORDINATION

- Project management assistance
- Integration of technical solutions
- Coordination and collaborative engineering





OUR KEY BUSINESS SEGMENTS

International Funders

Cities & States

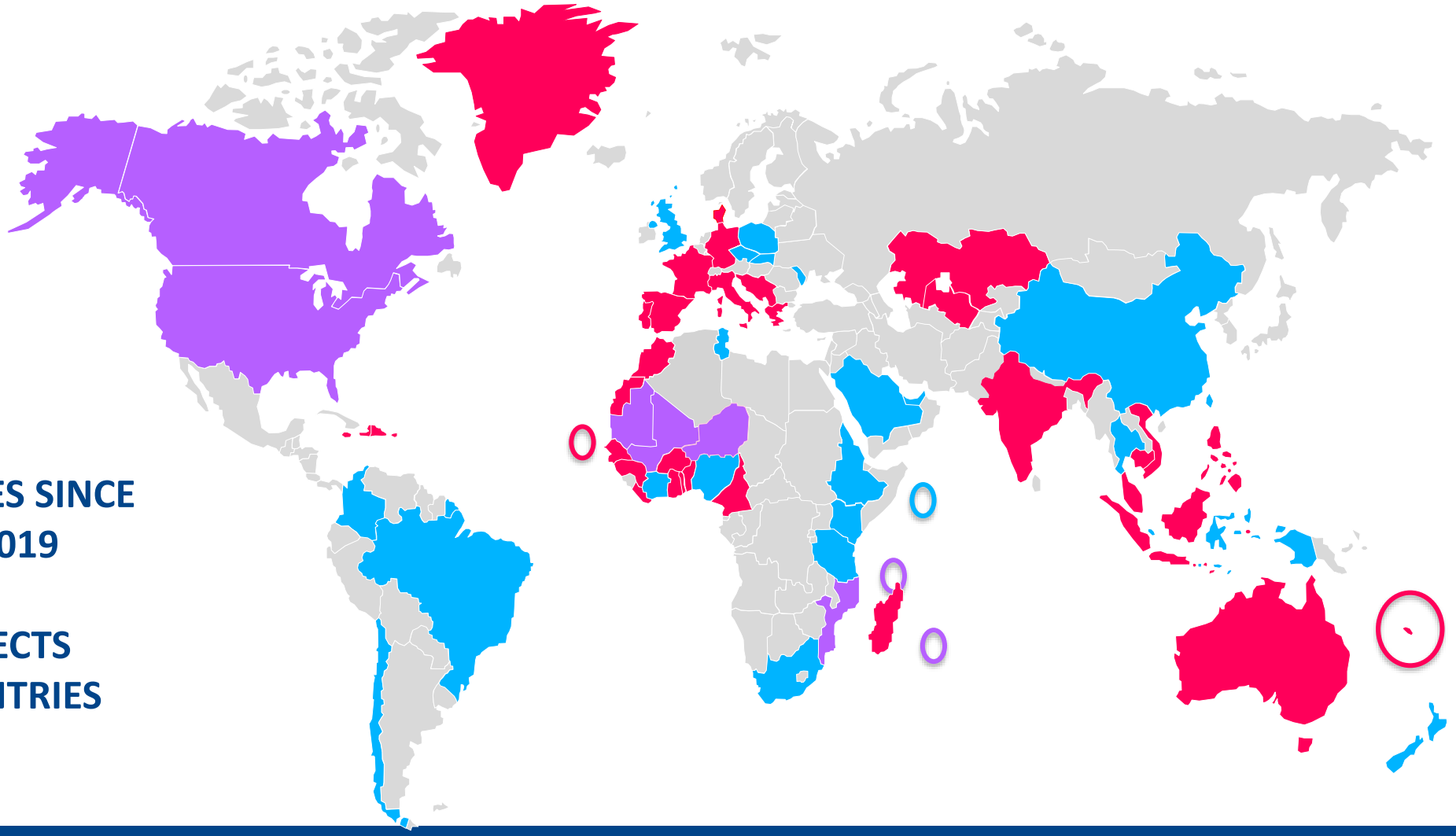
Real Estate

Network Operators

Construction & Industry

LOCATION OF PROJECTS

REALIZED, IN PROGRESS, FUTURE & UNDER DEVELOPMENT



KEY FIGURES SINCE JANUARY 2019

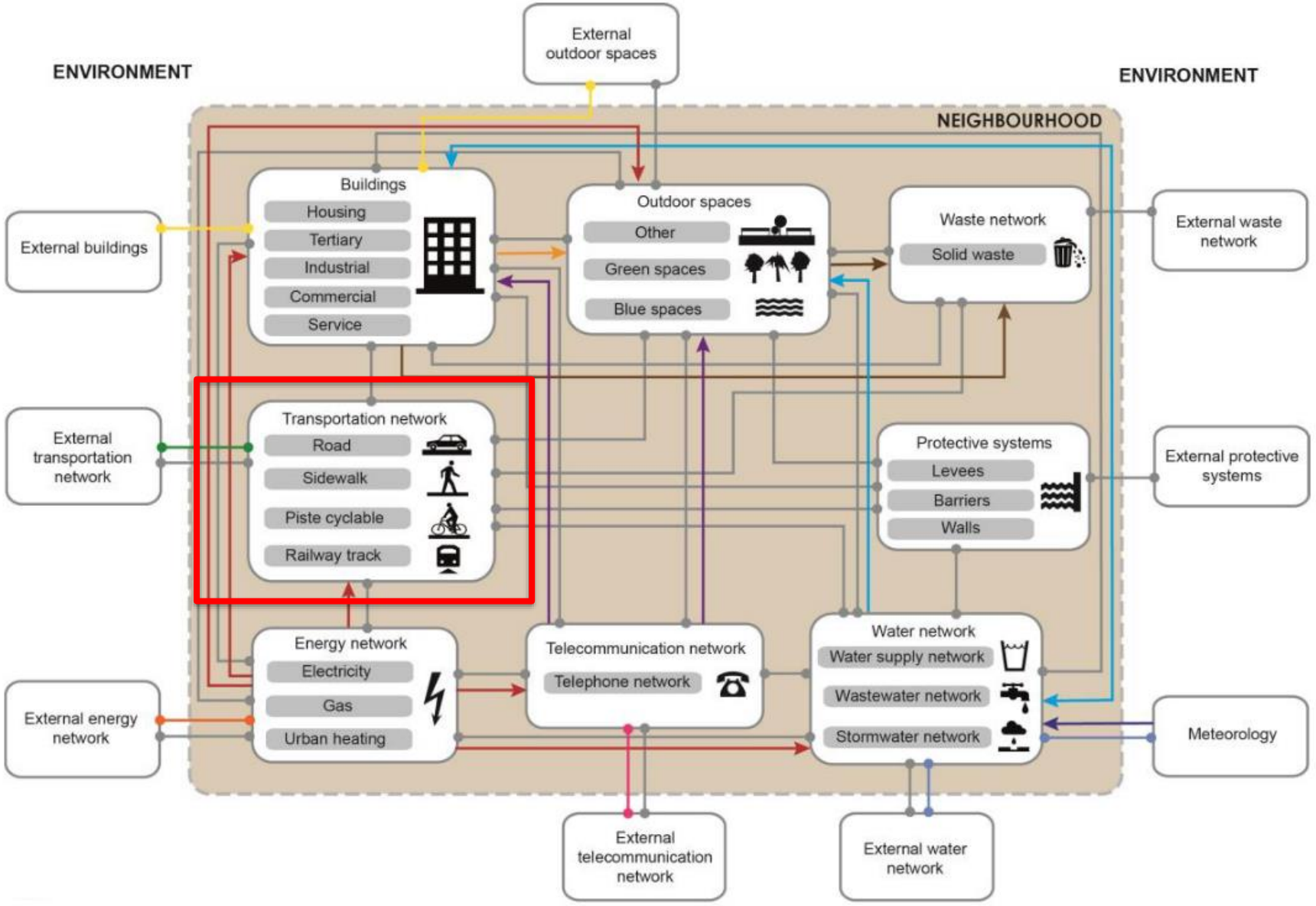
- **80 PROJECTS**
- **60 COUNTRIES**

ADAPTATION TO CLIMATE CHANGE

RISK VS SOCIETY

- ⇨ Cities and territories **face climate risks** (floods, extreme heat, etc.), exacerbated by **climate change**.
- ⇨ Lead to physical damage and disruption of services, which have an un **impact on society and the economy**

CRITICAL INFRASTRUCTURE



TRANSPORT = CRITICAL INFRASTRUCTURE

- **Mobility of people** (car, bus, train, etc.): access to work, education, leisure, health, etc.
- **Mobility of goods** (logistics, rail and air freight): trade, supplies
- **Emergency services:** evacuations, interventions, repair of other critical infrastructure

⇨ **direct impact**: traffic congestion, time loss, fuel consumption, GHG emissions
⇨ **Indirect impact**: restricted access to employment; education, etc.; higher prices, poor air quality,

IMPACT OF MAJOR HAZARDS ON TRANSPORT

Flooding in London, United Kingdom (2007)

- 10,000 people stuck
- repair costs of £40-60 million

Source: UK Department for Transport. (2014). Transport Resilience Review - A review of the resilience of the transport network to extreme weather events. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335115/transport-resilience-review-web.pdf

Flooding in Ouagadougou, Burkina Faso (2009)

- Several neighbourhoods blocked for days
- repair costs of US$ 8.5 million

Source: World Bank Group. (2010). *Inondations du 1er Septembre 2009 au Burkina Faso - Evaluation des dommages, pertes et besoins de construction, de reconstruction et de relèvement* (French).

RESILIENCE?

To reduce the impact of hazards on cities and territories, resilient transport systems are needed

= Able to cope with a trend, or disruptive event, by reacting or reorganising in such a way as **to retain its essential function, mobility.**

PROJET EXEMPLES

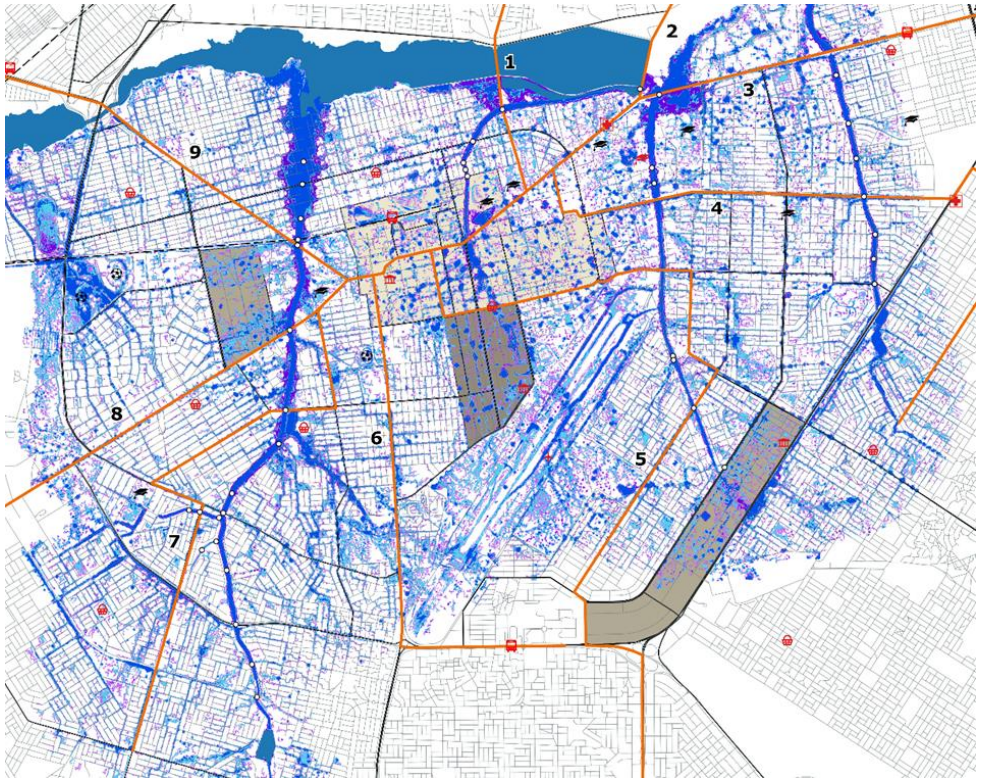
BRT OF OUAGADOUGOU

Context: Upstream design and financing studies for a transport system (BRT and bus) in Ouagadougou (Burkina Faso)

Team and budget: Louis berger/RESALLIENCE/AGEIM

Mission (March - June 2021): Proposal of measures to improve the resilience and adaptation of the future transport system to floods

- International case studies -> innovative and context-specific solutions
- Proposed solutions (grey, green and institutional)
- Multi-criteria analysis (investment cost, maintenance cost, efficiency and co-benefits) to prioritise solutions

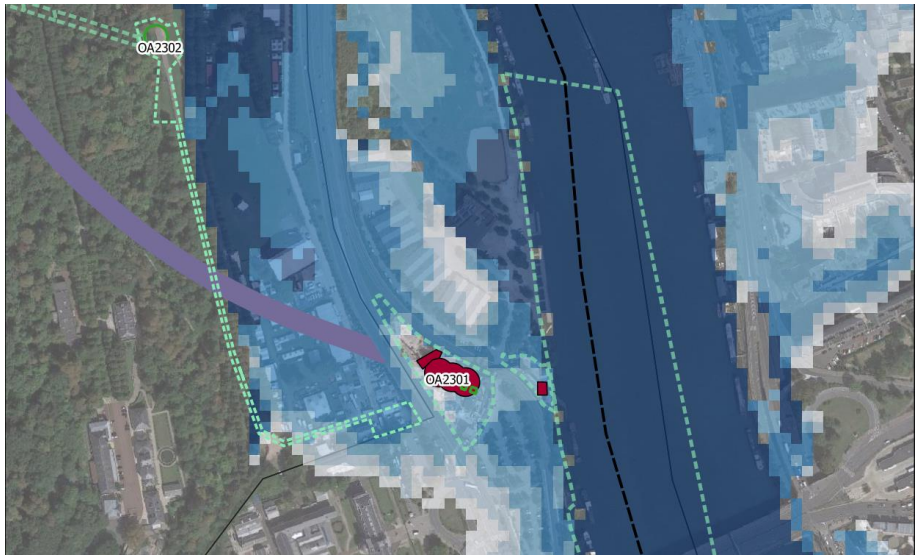


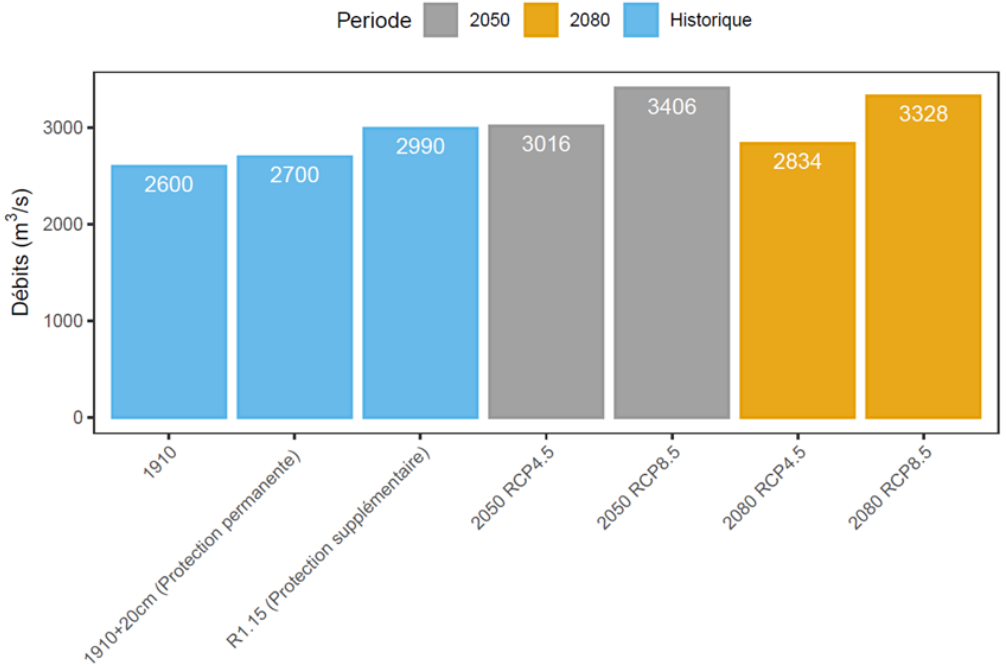
METRO OF GRAND PARIS L15

Context: Design and build contract for line 15 West, Southern part of the Grand Paris Express

- Pt de Sèvres to La Défense
- Competitive dialogue

Mission: Elaboration of the Flood and Health Crisis Strategy - predictive modelling of rainfall evolution and flood risks





DISCUSSION

DISCUSSION

Hazards taken into account?

- Trends: temperatures, sea level rise
- Extreme events: flooding, drought, etc.
- Climate scenarios: RCP, SSP, medium (2030-2050), long term (2080-2100).

Issues and impacts?

- Human
- Economic
- Environmental

Solutions?

- Gray
- Green
- Institutional