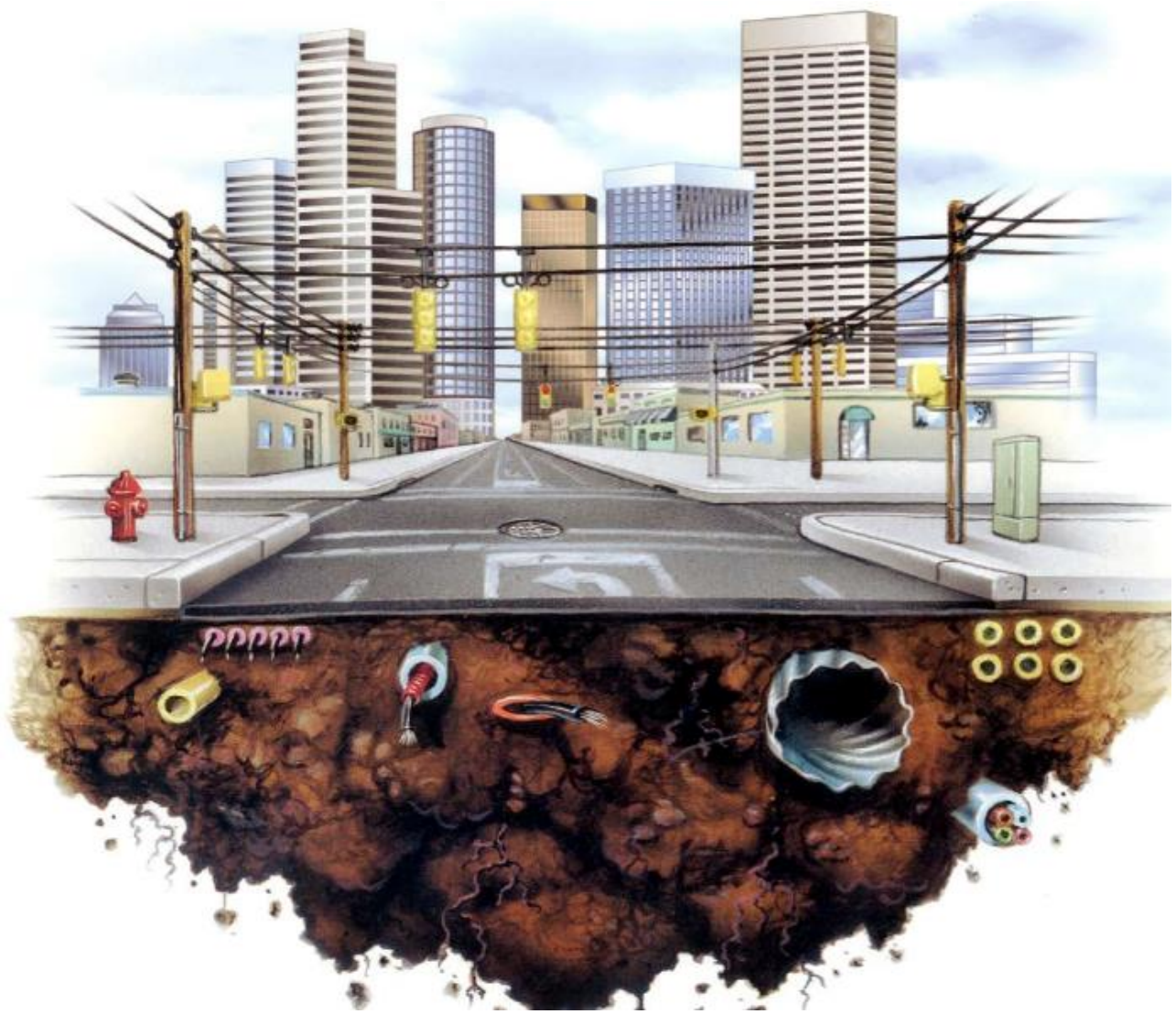
Infrastructure at Risk in a Complex World

Advocacy and Awareness Workshop

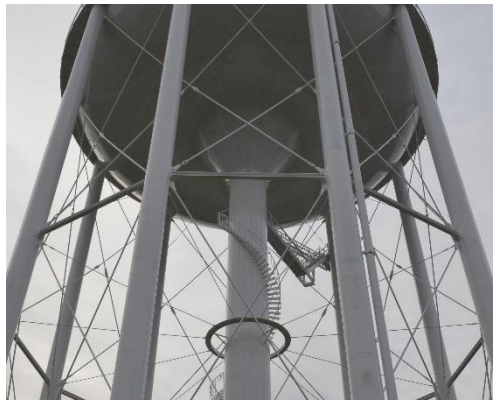
September 29th, 2023



Infrastructure Assets: anything that delivers value to an organization and the stakeholders it serves.

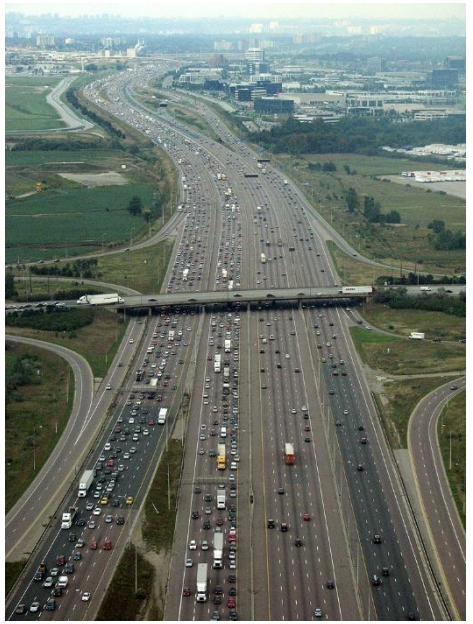
Public Infrastructure Assets: owned and managed by the public sector to deliver services to residents, businesses, institutions, and economies.

Local Government Infrastructure Systems



Regional and National Infrastructure Systems

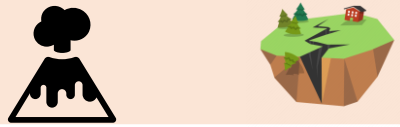
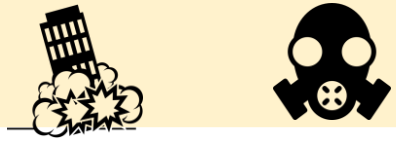






Natural Infrastructure

Many types of hazards threaten infrastructure systems

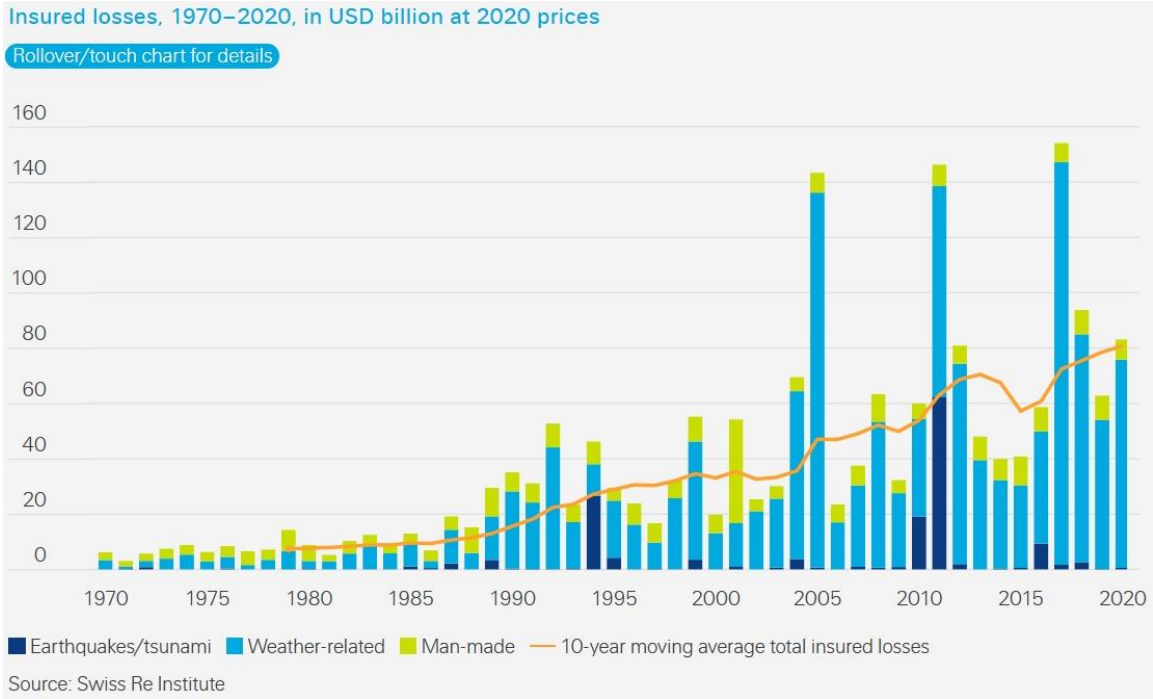
Climate-Related Hazards		Temperature Variabilities, sea level rise, extreme weather events, floods, etc.
Environmental Degradation		Soil erosion, water pollution, deforestation, etc.
Seismic/Geologic Hazards		Earthquakes, volcanoes, landslides etc.
Human-Made Hazards		Industrial accidents, oil or chemical spills etc.
Malicious Hazards		Terrorism, cyberattacks, civil unrest etc.

Many hazards can interact with one another, amplifying their effects

Weather-related hazards are the most frequently impactful and costly

Extreme heat, severe weather, wind, floods, wildfire, etc.

Losses from natural catastrophes are projected to grow significantly, primarily from the impacts of climate change[1].



[1]Swiss Re Institute Source: https://www.insurance-canada.ca/2020/12/23/swiss-re-2020-global-insured-catastrophe-loss-estimates/

Climate-related hazards can cause three main types of infrastructure-related impacts

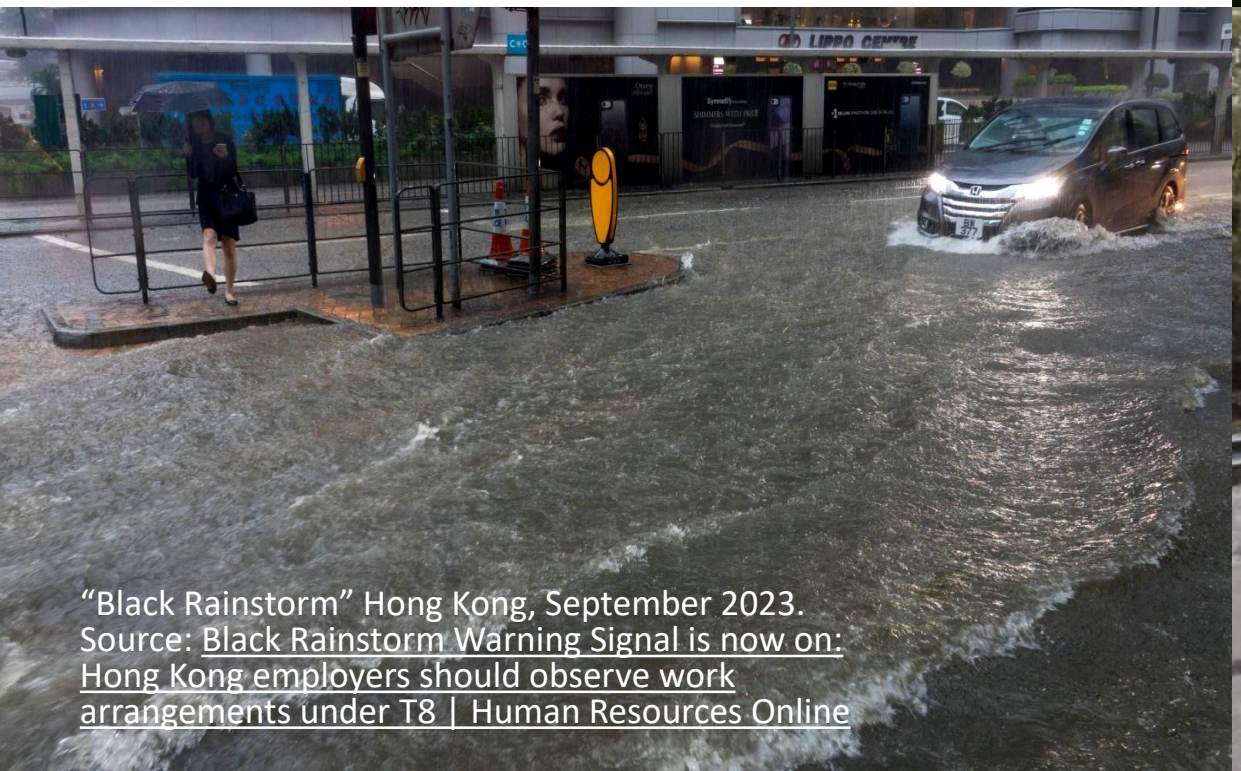
Service Disruption

Infrastructure Damage

Infrastructure Failure

Torrential rainfall, floods and service disruptions

Central India, September 2023. Source: Madhya Pradesh: Mangod-Manawar Road Blocked Due To Heavy Rainfall (freepressjournal.in)



"Black Rainstorm" Hong Kong, September 2023. Source: Black Rainstorm Warning Signal is now on: Hong Kong employers should observe work arrangements under T8 | Human Resources Online

Southland New Zealand, September 2023. Source: More than 100 evacuated, schools closed amid wild weather in South Island (msn.com)

Extreme heat and infrastructure damage

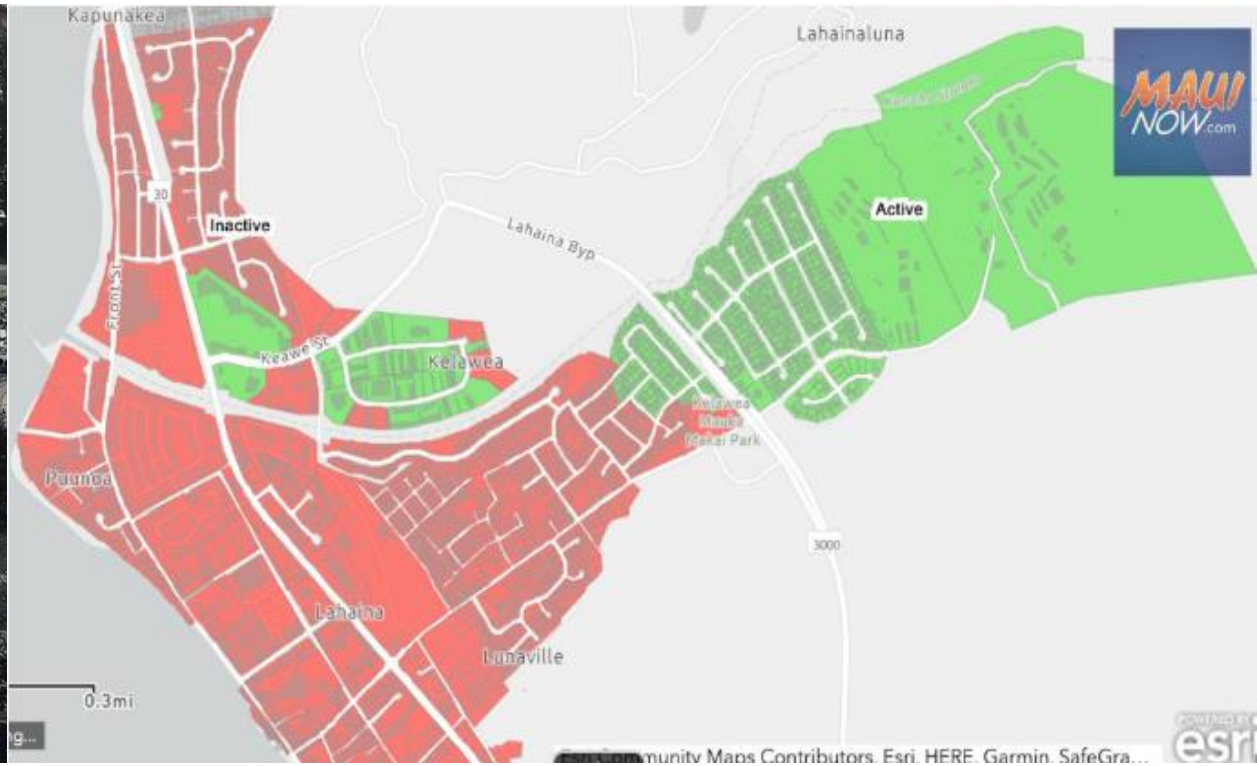
Source: User @wspd7pio on Twitter

Source: U.S Dept of Transportation

Source: SDOT

Wildfires and infrastructure damage and failure in the US

Damage to buildings in Lahaina, Hawaii. Source: Patrick T. Fallon/AFP via Getty Images

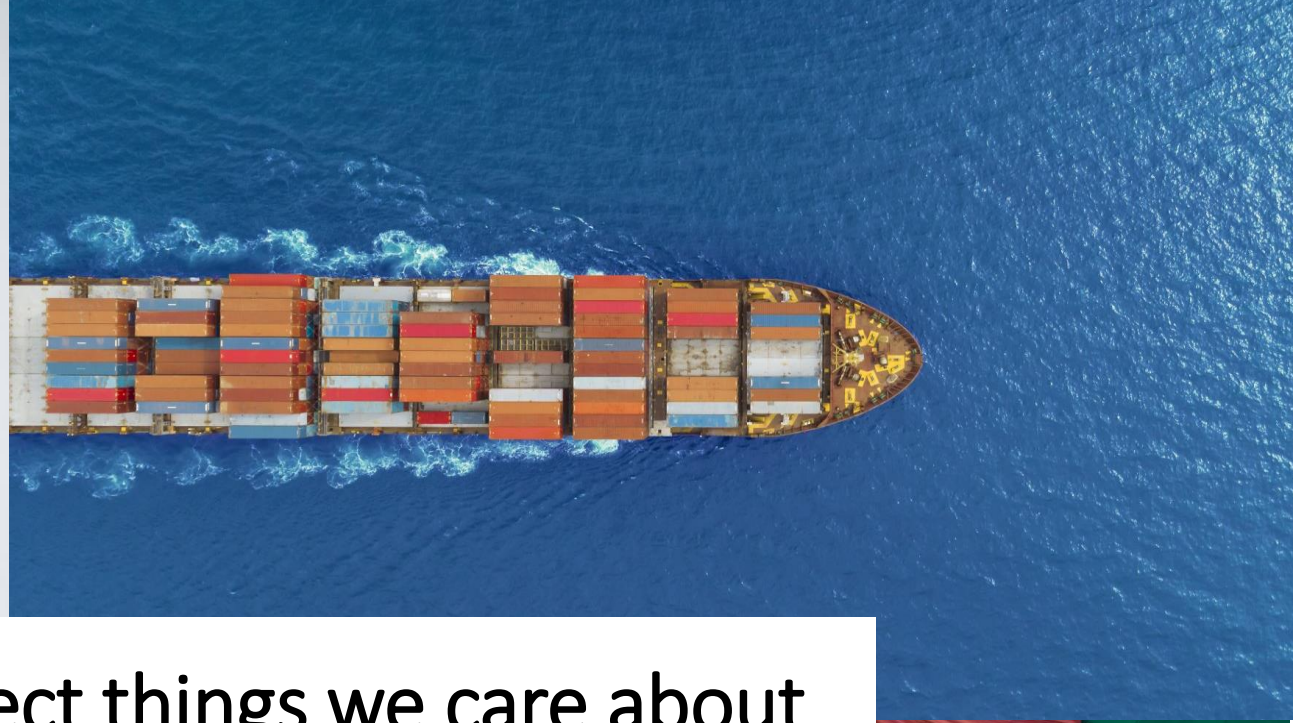


A map that identifies all areas where wastewater service is currently inactive due to fire damage. Source: [Water and Wastewater (mauirecovers.org)]

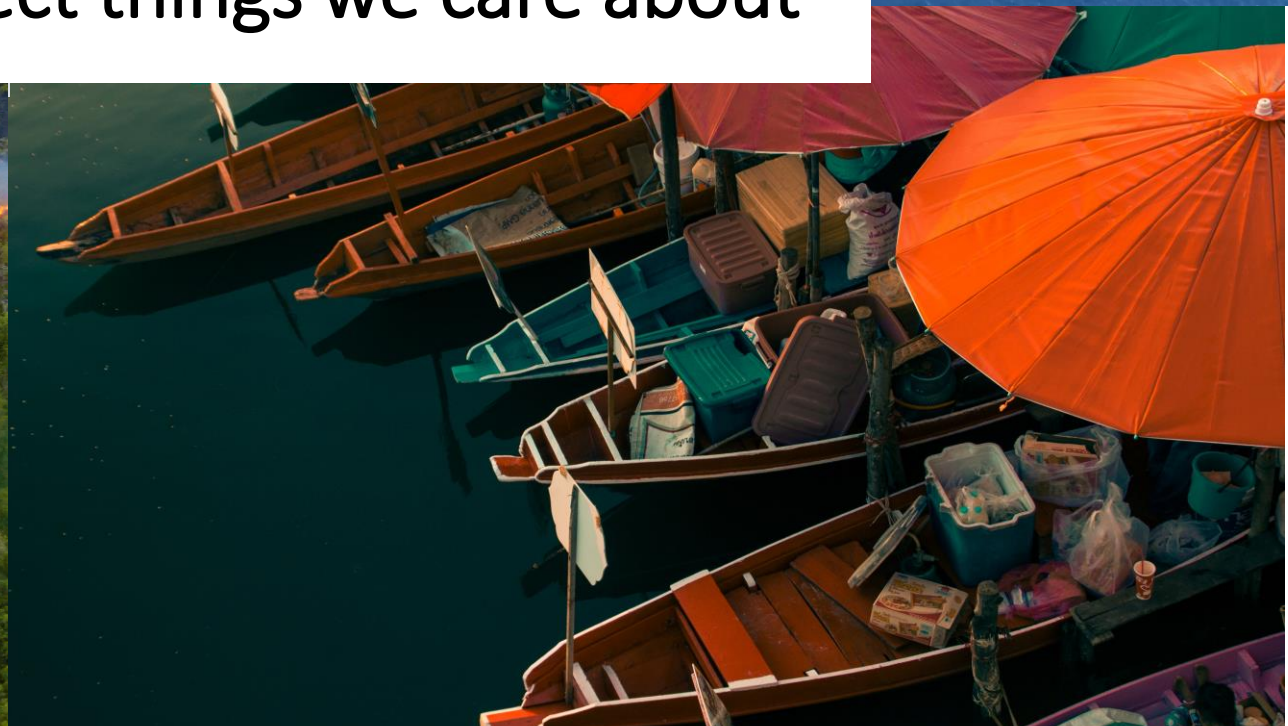
Torrential rain, flooding, and dam failure in Libya

Source: Google (base image), Planet Labs, Tunisia state news agency TAP, International Committee of Red Cross. Graphic: Lou Robinson, CNN

Source: Agence France-Presse — Getty Images



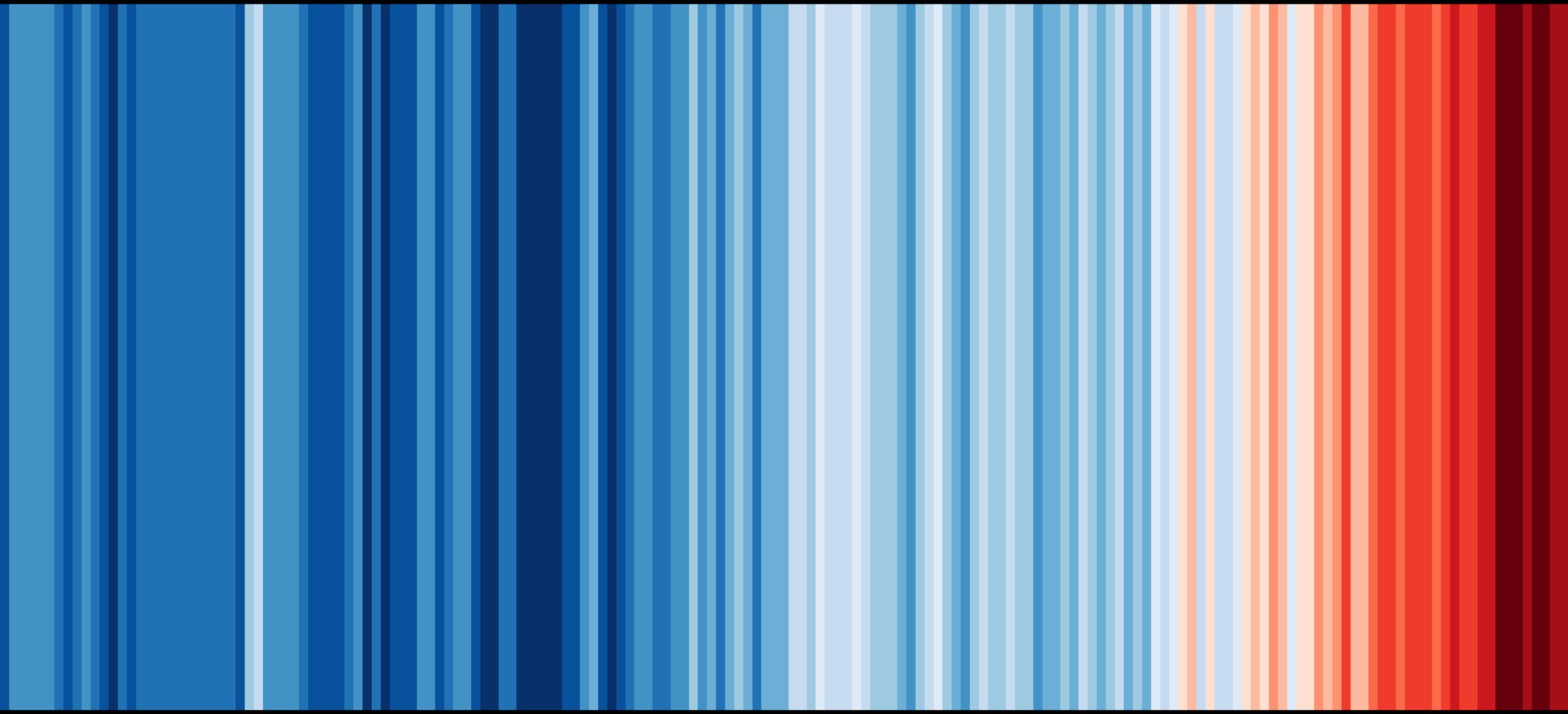
These impacts affect things we care about



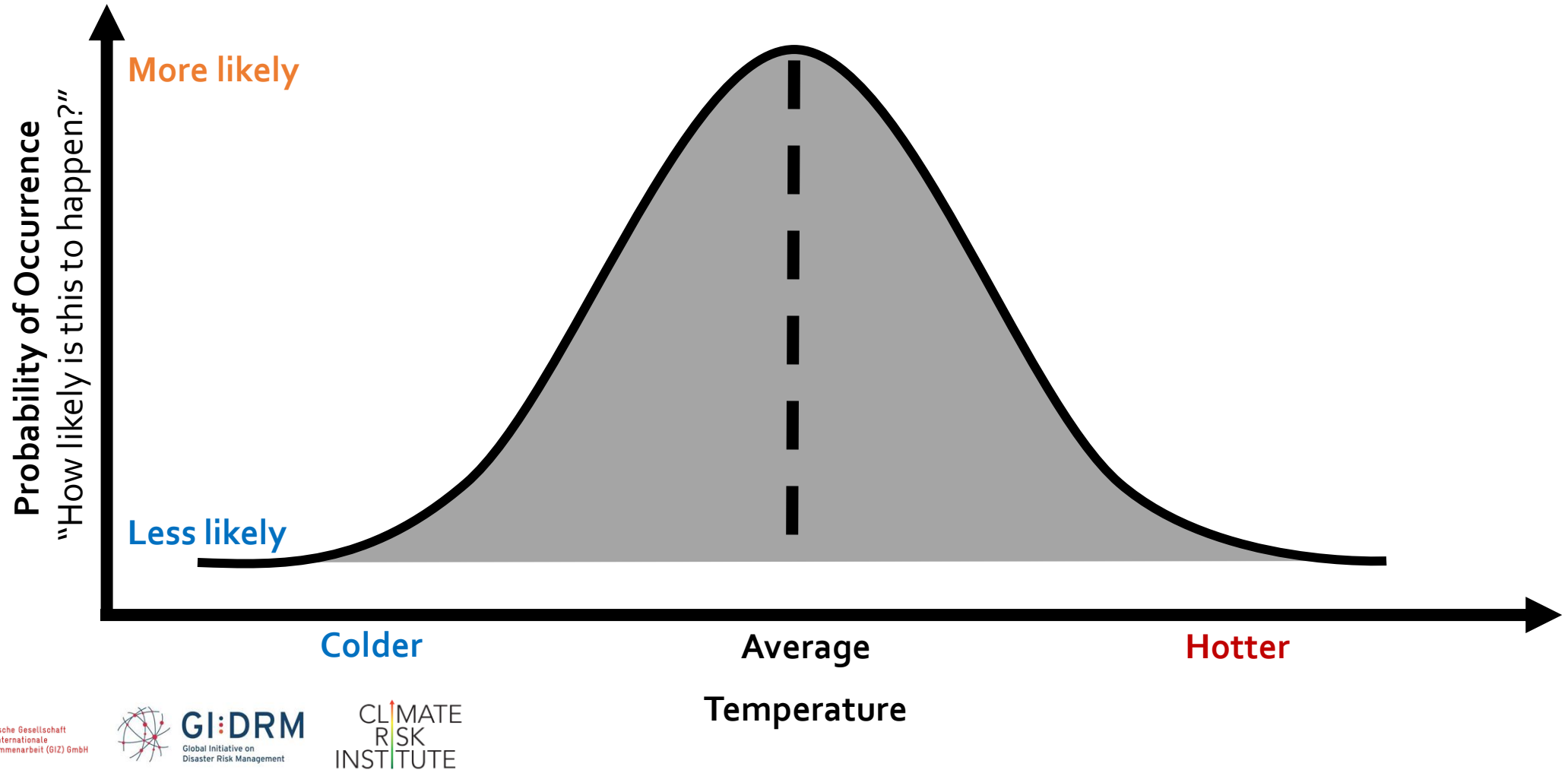
Climate change will make these impacts worse

Global temperature change (1850-2022)

Source: Show your Stripes - Globe



What are the impacts of a small change in average conditions?



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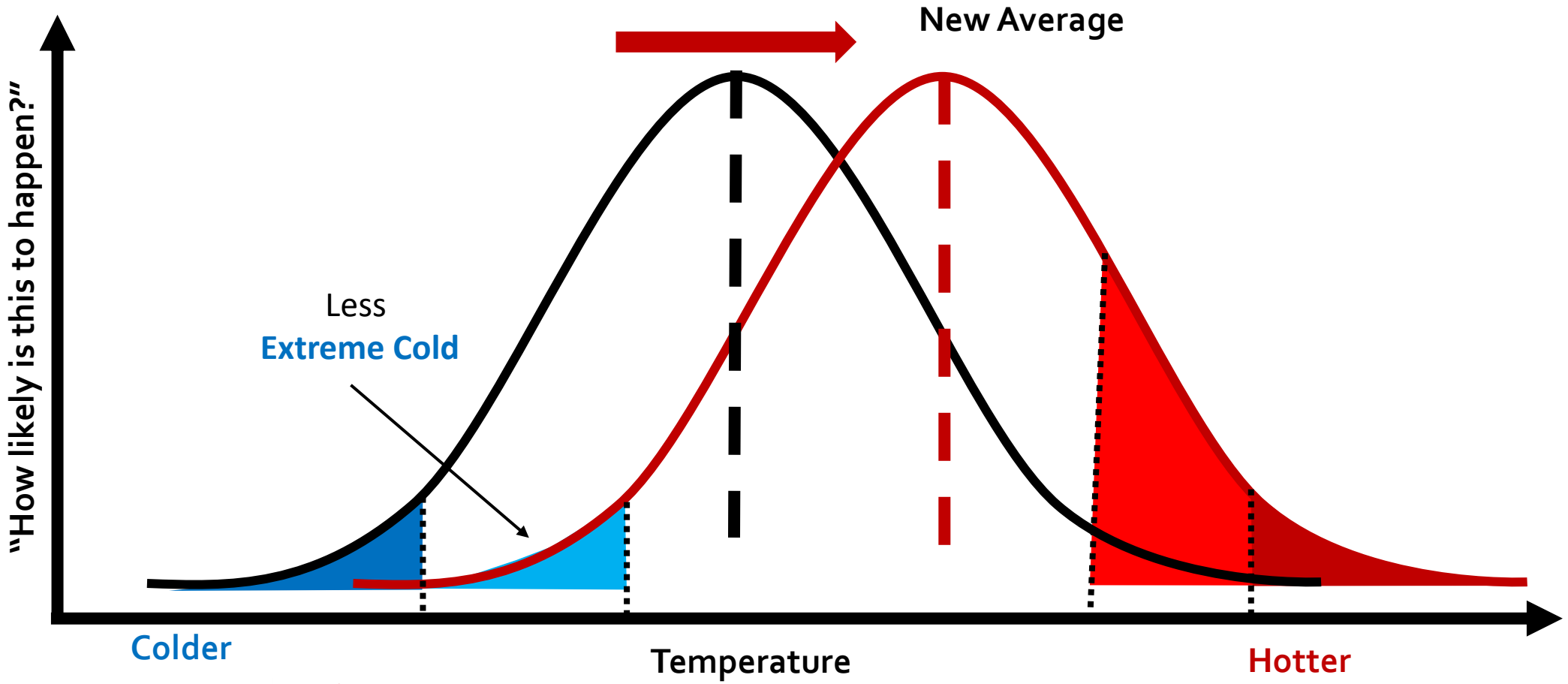
GI:DRM Global Initiative on Disaster Risk Management
CLIMATE RISK INSTITUTE

More frequent and severe extremes



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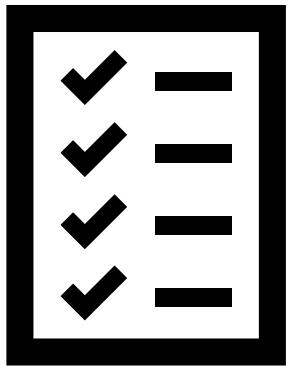
A climate change risk assessment helps identify and understand potential risks

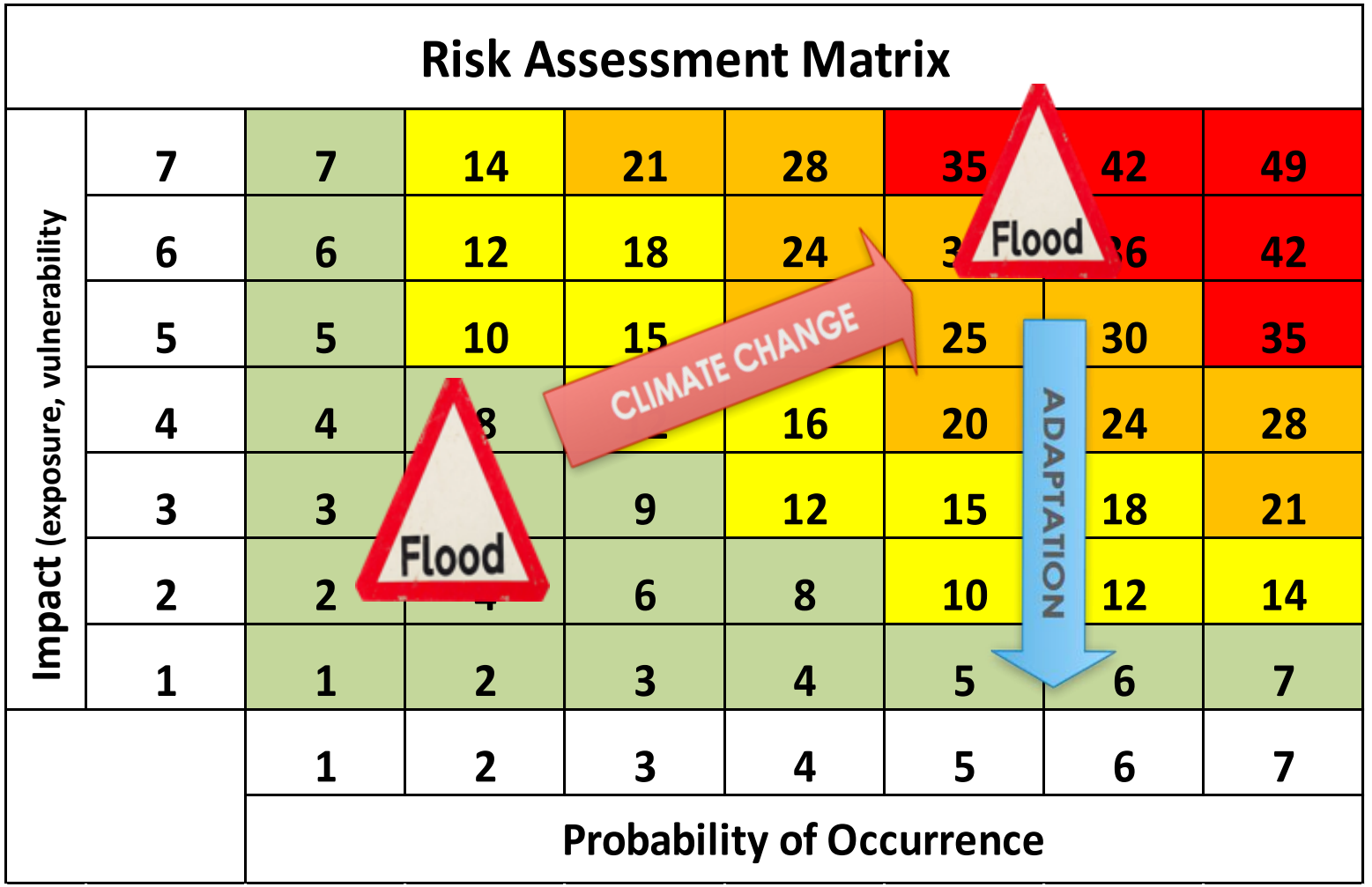


Which hazards result in the greatest risks?

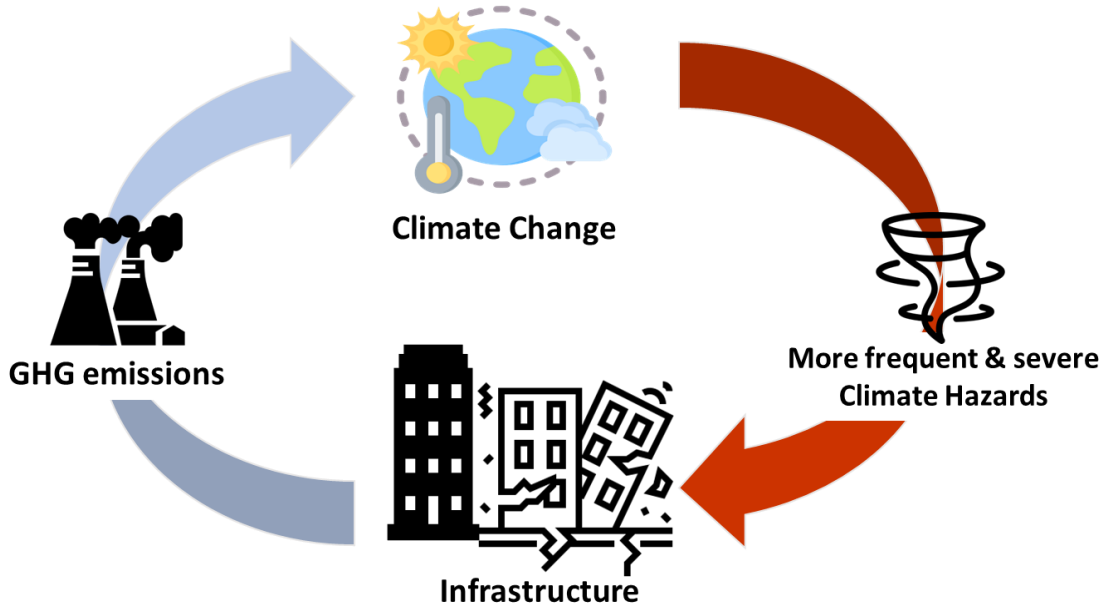
What are the risks that exist now and in the future?

What are the highest priority risks to address?

...and inform Adaptation



Adaptation actions can provide both significant benefits & co-benefits...



Cost savings

Public safety and community resilience

Conserve natural resources

Protect long-term investments

Investment in Climate Resilience Infrastructure

Benefit-cost ratio of approx. 6 to 1

$1 invested, $6 can be saved[1]

[1](UN,2019) https://press.un.org/en/2019/sgsm19807.doc.htm

Q&A