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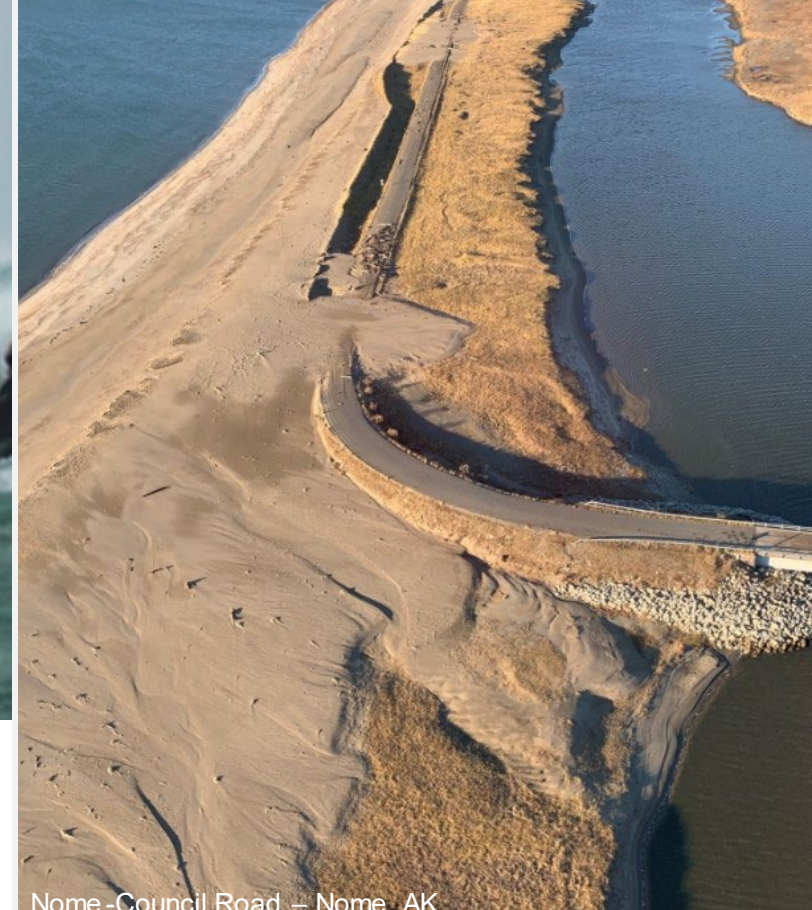
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# Climate Resiliency: Dealing with (un)Certainty

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Disasters are happening with increasing frequency and intensity.

# Alaska Disasters

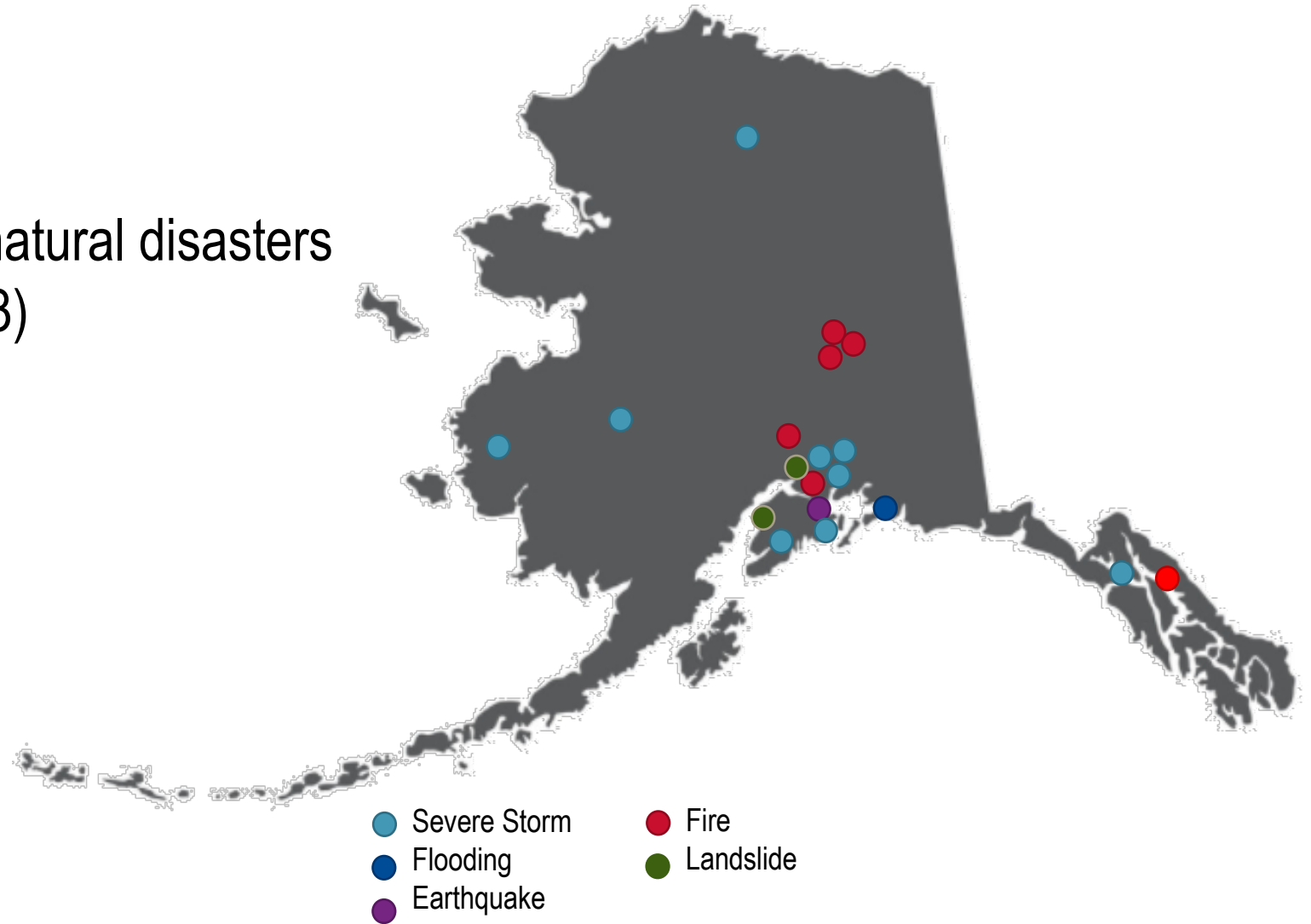
**19** Federally declared natural disasters and fires (2017-2023)

**10** Severe Storms and Flooding

**5** Fires

**1** Earthquake

**2** Landslide



**\$300** Project costs for federally declared disasters, 2017-2022  
MILLION

# Climate Economic Impact and Funding for Resilience (2023)



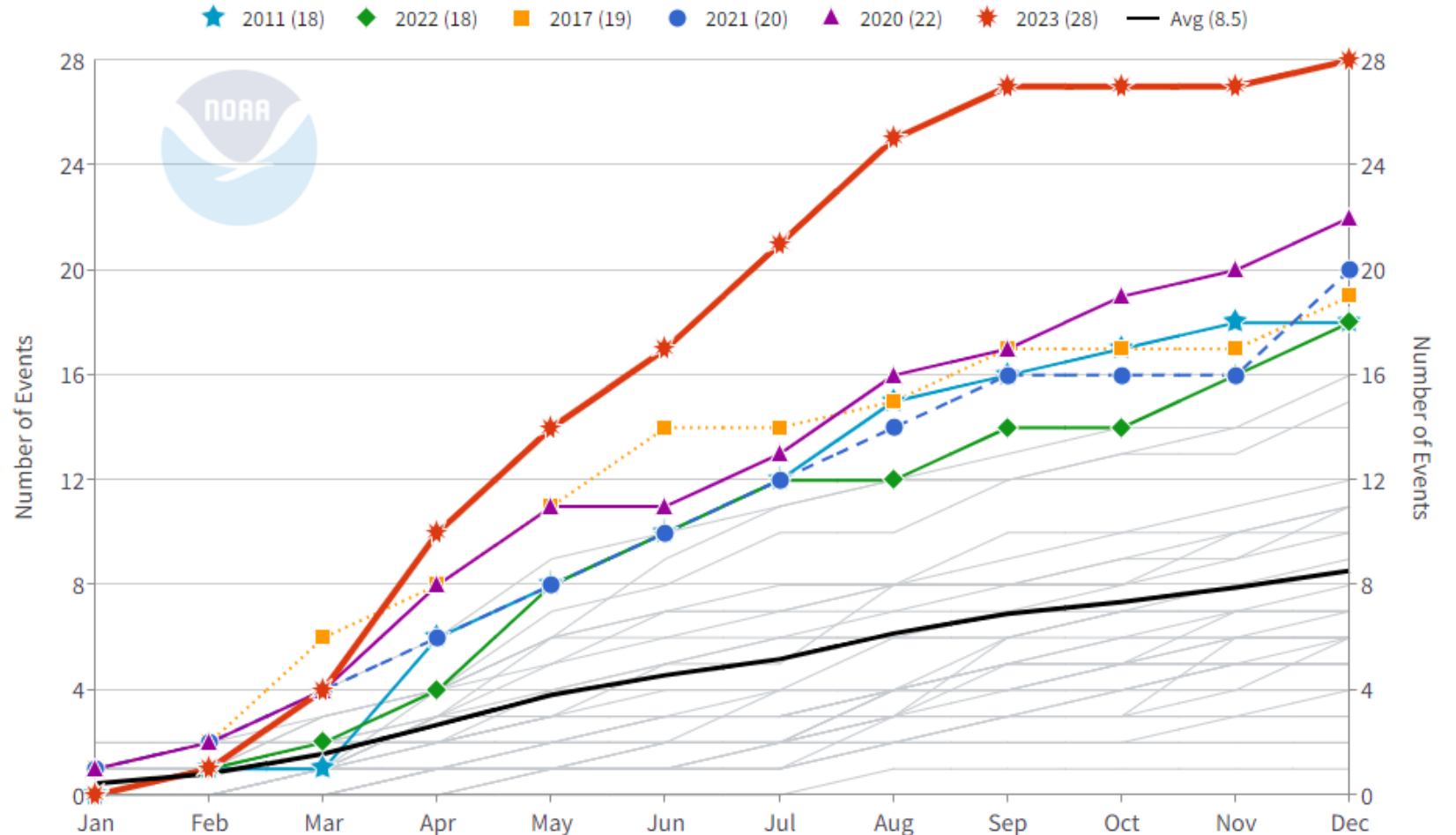
**23** weather and climate disaster events in 2023

LOSSES IN U.S. EXCEEDING \$1 billion each

**More than 3 million adults forced to evacuate homes**

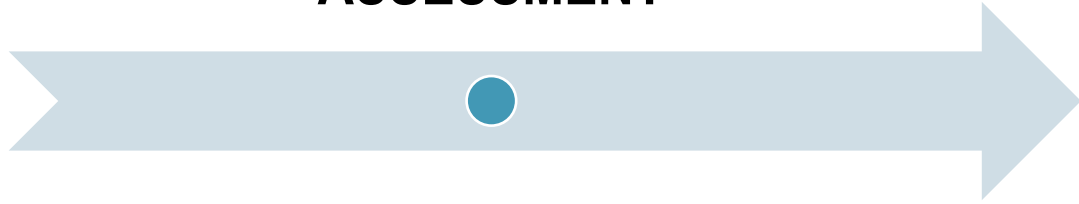
in 2022 because of a natural disaster, according to a Census Bureau tally.

1980-2023 United States Billion-Dollar Disaster Year-to-Date Event Count (CPI-Adjusted)

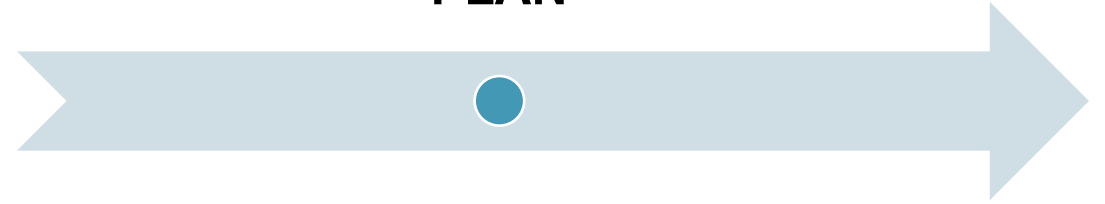


# Resiliency Planning, Design, and Delivery

**RISK & VULNERABILITY  
ASSESSMENT**



**RESILIENCY PLAN AND / OR ACTION  
PLAN**





# SUSTAINABILITY

The act of balancing the environmental, social and economic needs of the built and natural environments for present and future generations.



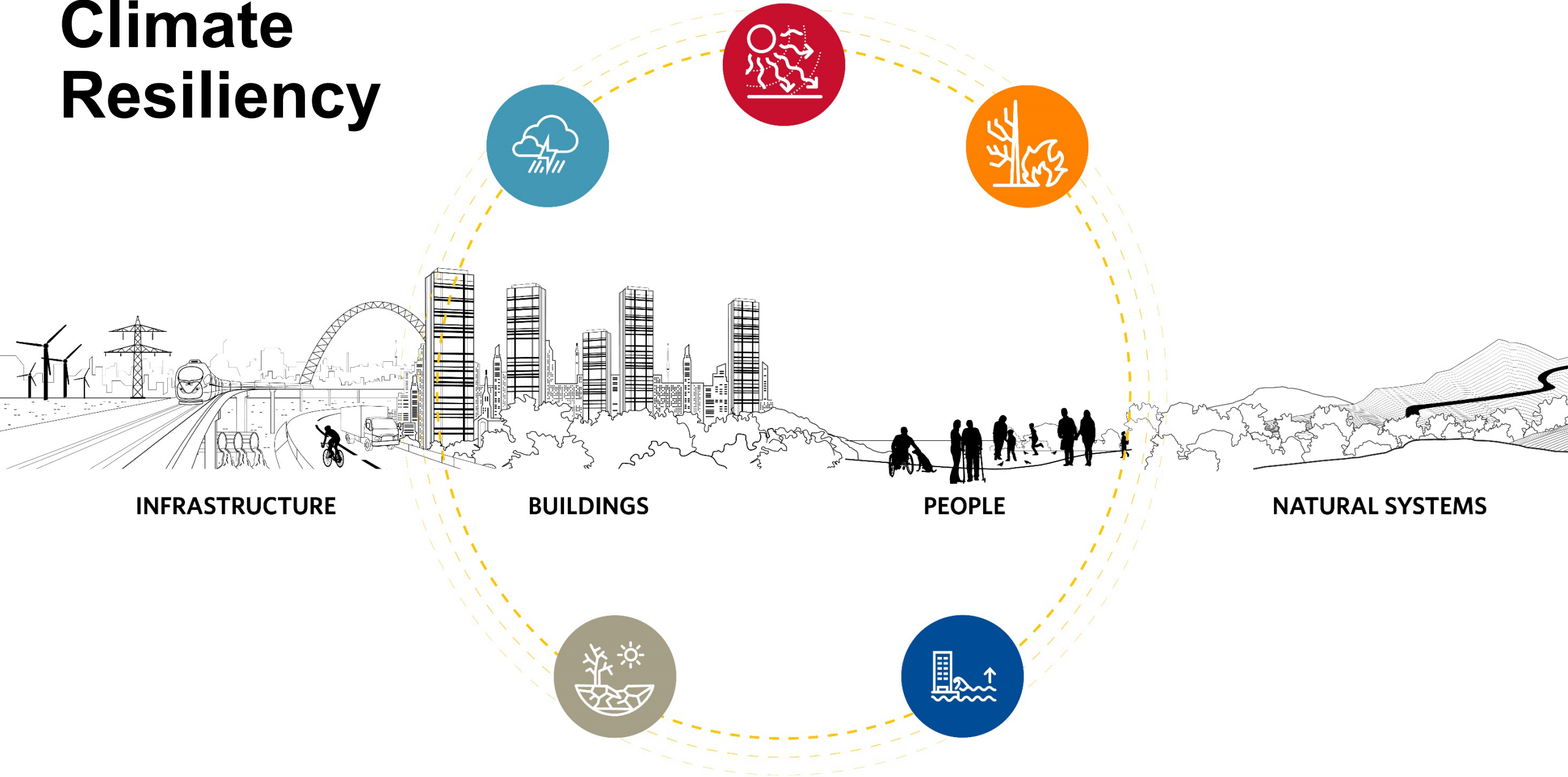
# RESILIENCY

The capacity for people, communities, buildings and infrastructure to endure, rapidly respond to and prosper despite impacts from shocks and stress.



# Climate Resiliency

Climate Change



INFRASTRUCTURE

BUILDINGS

PEOPLE

NATURAL SYSTEMS

Extreme Events & New Normal



**Safety & Security**



**Food, Water, Shelter**



**Health & Medical**



**Energy (Power & Fuel)**



**Communications**



**Transportation**



**Hazardous Material**



Law Enforcement/  
Security



Food



Medical Care



Power (Grid)



Infrastructure



Highway/Roadway



Facilities



Fire Services



Water



Patient Movement



Fuel



Alerts, Warnings,  
& Messages



Mass Transit



HAZMAT, Pollutants,  
Contaminants



Search & Rescue



Shelter



Public Health



911 and Dispatch



Railway



Government Services



Agriculture



Fatality Management



Responder  
Communications



Aviation



Community Safety



Medical Supply Chain



Finance



Maritime

*Image courtesy of FEMA*



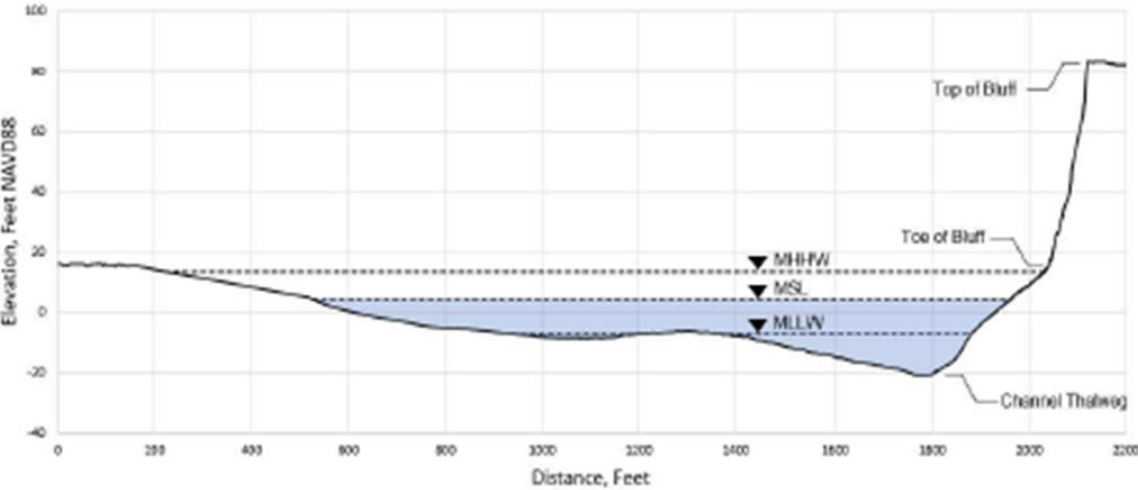


# Resiliency Strategies and Design

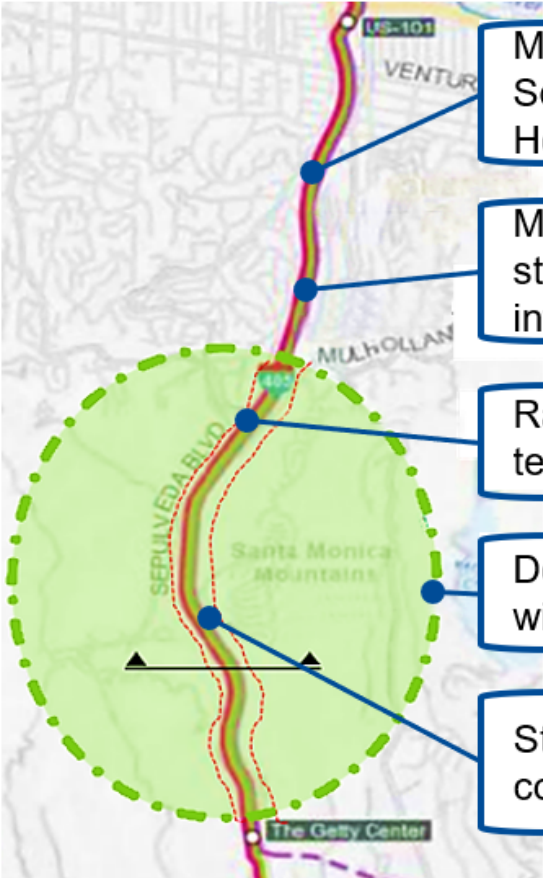


**STRUCTURE GAP**

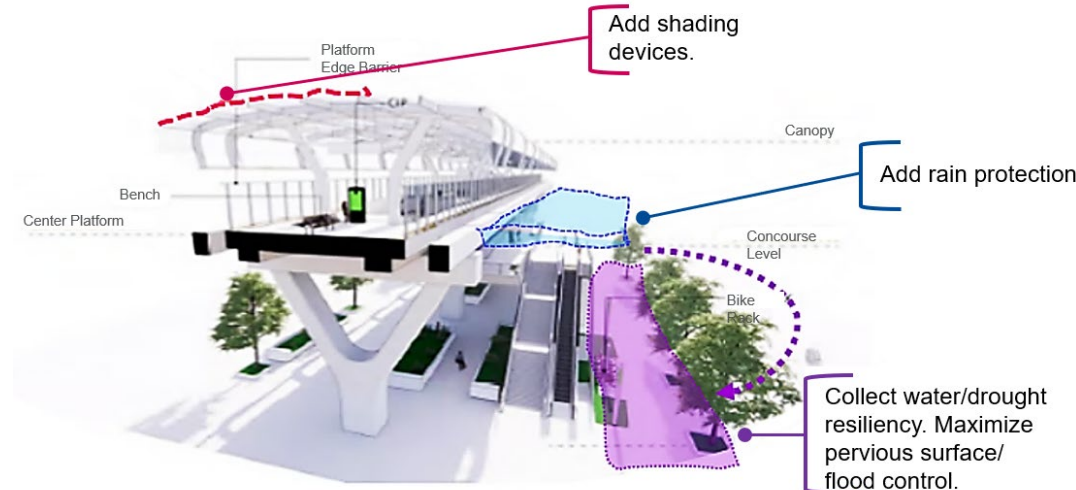
Kenai River Typical Cross-Section



# Resiliency Strategies and Design



- Maximize planting opportunities and minimum Solar Reflective Index (SRI) for reducing Urban Heat Island effect.
- Maintain accessibility adjusted to flooding risk. Maximize stormwater management strategies, including grey and green infrastructure strategies.
- Rail design to minimize fire risk and sustain high temperature.
- Develop regional partnership for forest management to reduce wildfire risk.
- Study the option of having low retaining walls for mudslide control (unless already in place).



# Contact



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## Coastal Resilience Funding Opportunities

In recent years, federal and state agencies have steadily increased the volume of grant opportunities for actions that enhance

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