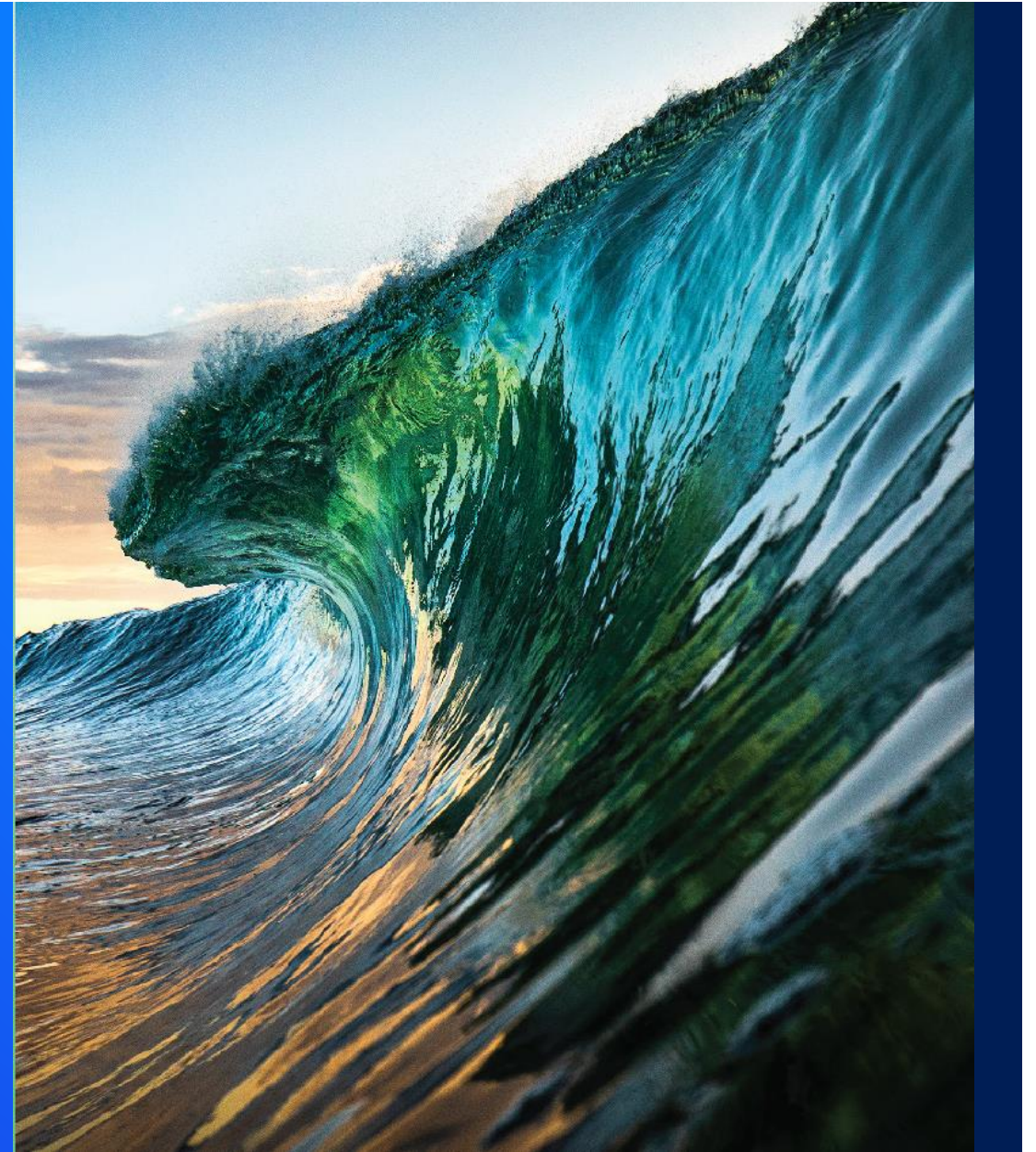


Building Resilient Utilities: Strategies for a Climate-Ready Future

In the kNOW Webinar
November 12, 2024



Agenda

1. Welcome and Overview, 10 min
2. Panelist Introductions, 10 min
3. Panel Discussion, 20 min
4. Q&A from audience, 15 min
5. Closing Remarks, 5 min

System-Wide Vulnerability Assessment

Climate Threats



Temperature



Sea Level Rise



Precipitation



Drought



Wildfire



River Flooding

Systems

Water Supply



Flood Control



Sanitation



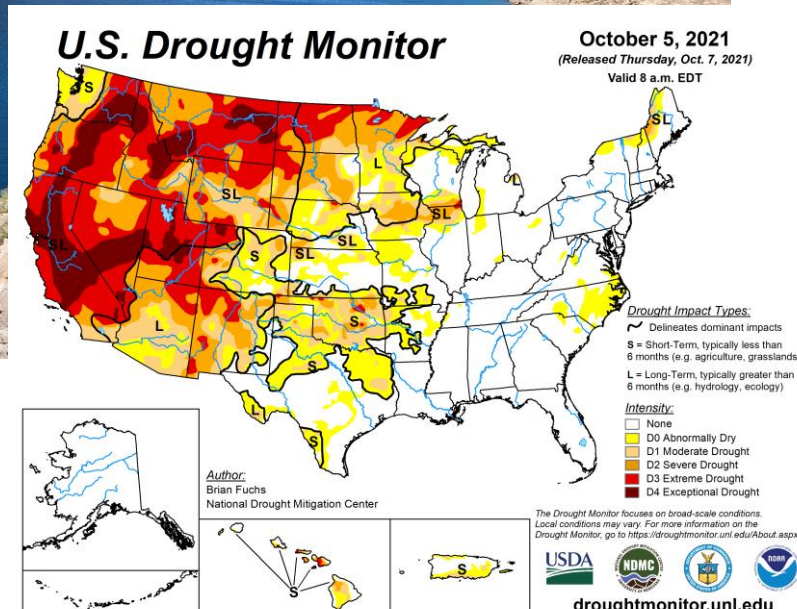
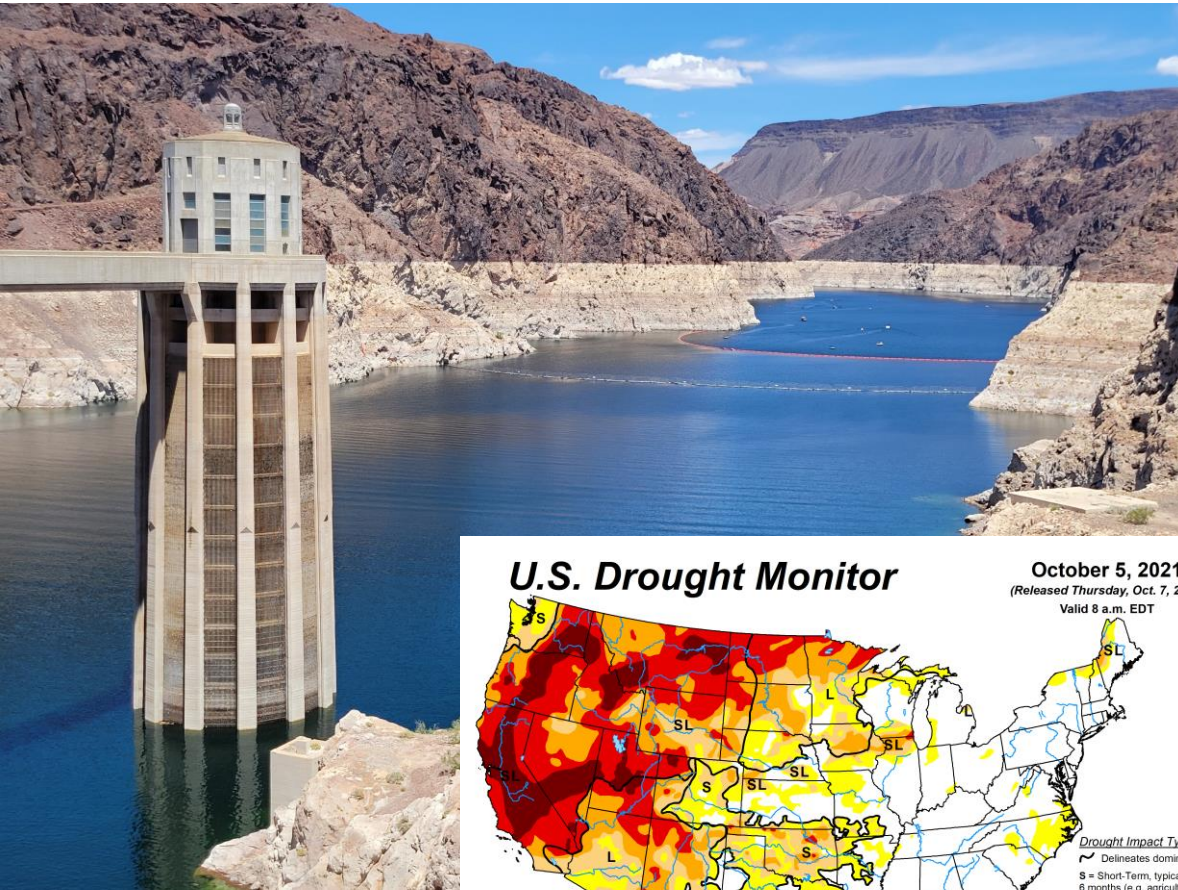
Energy and Power



Transportation



DROUGHT – Climate Variability is Increasing

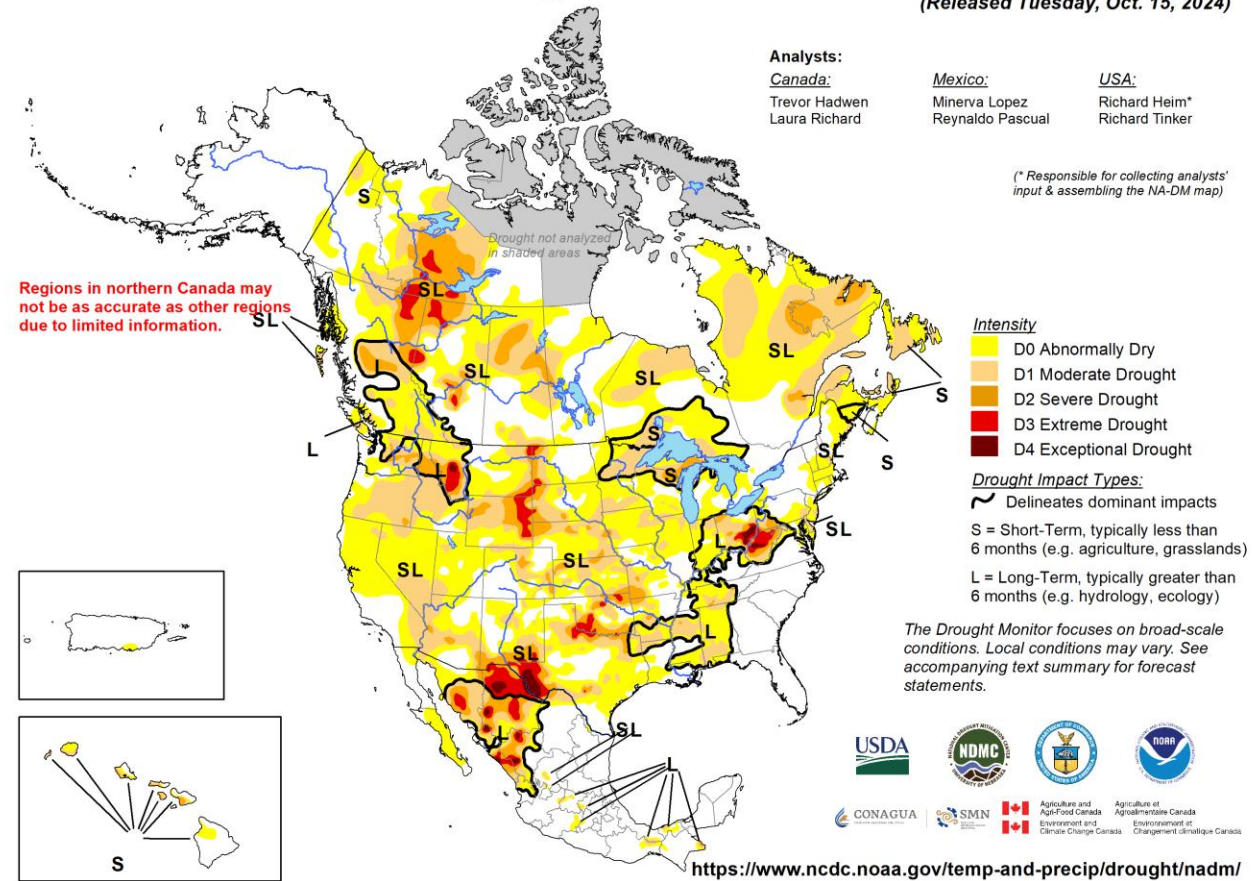


North American Drought Monitor

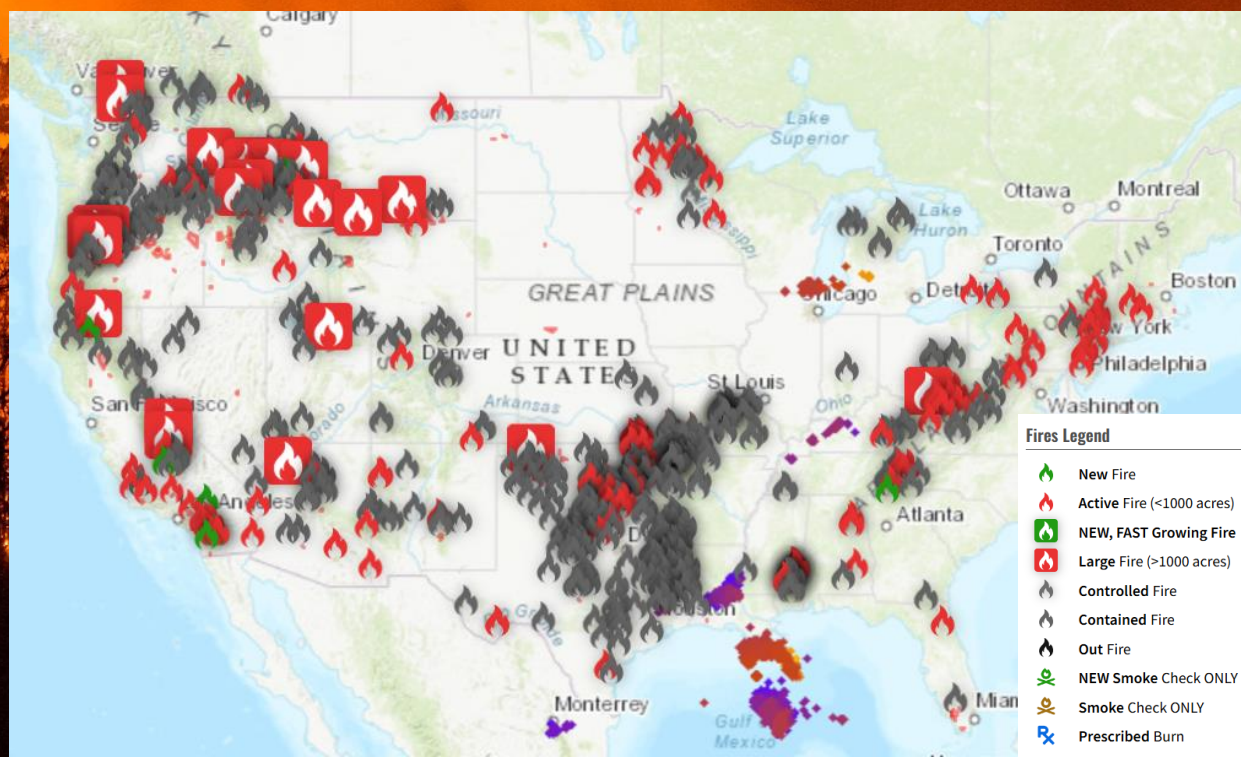
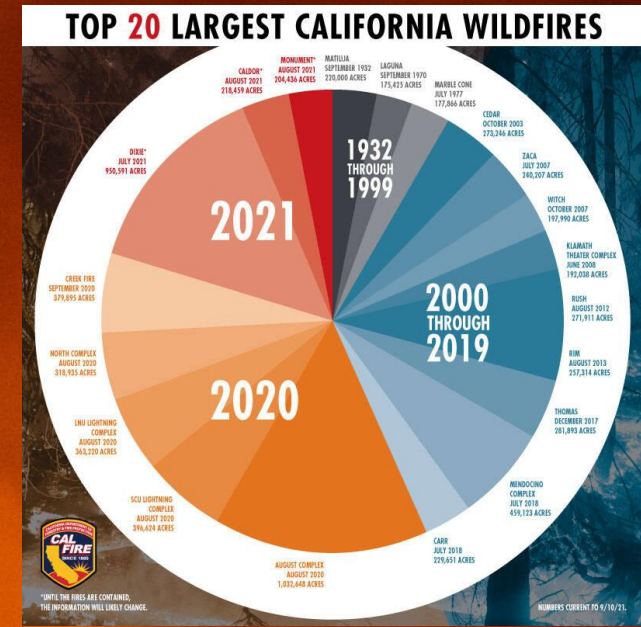
September 30, 2024
(Released Tuesday, Oct. 15, 2024)

Analysts:
Canada: Trevor Hadwen, Laura Richard
Mexico: Minerva Lopez, Reynaldo Pascual
USA: Richard Heim*, Richard Tinker

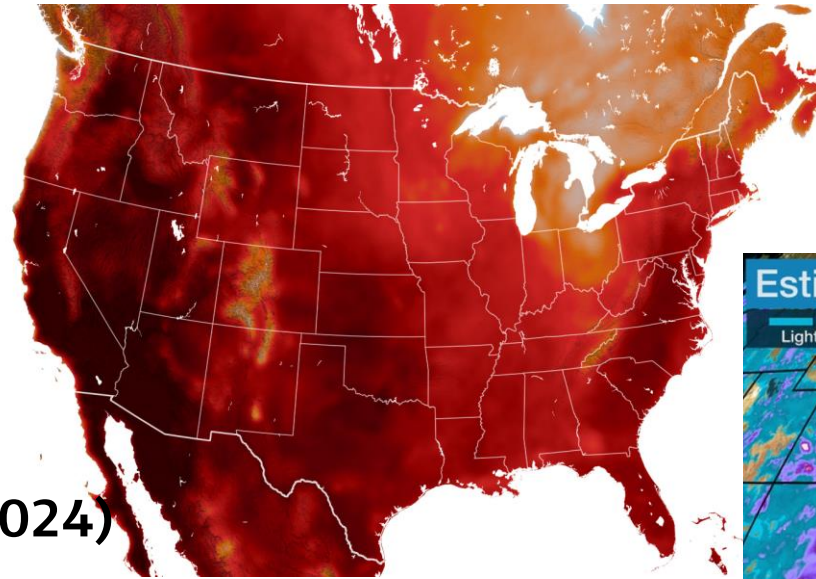
(* Responsible for collecting analysts' input & assembling the NA-DM map)



WILDFIRES – Increasing Wildfires and Intensity

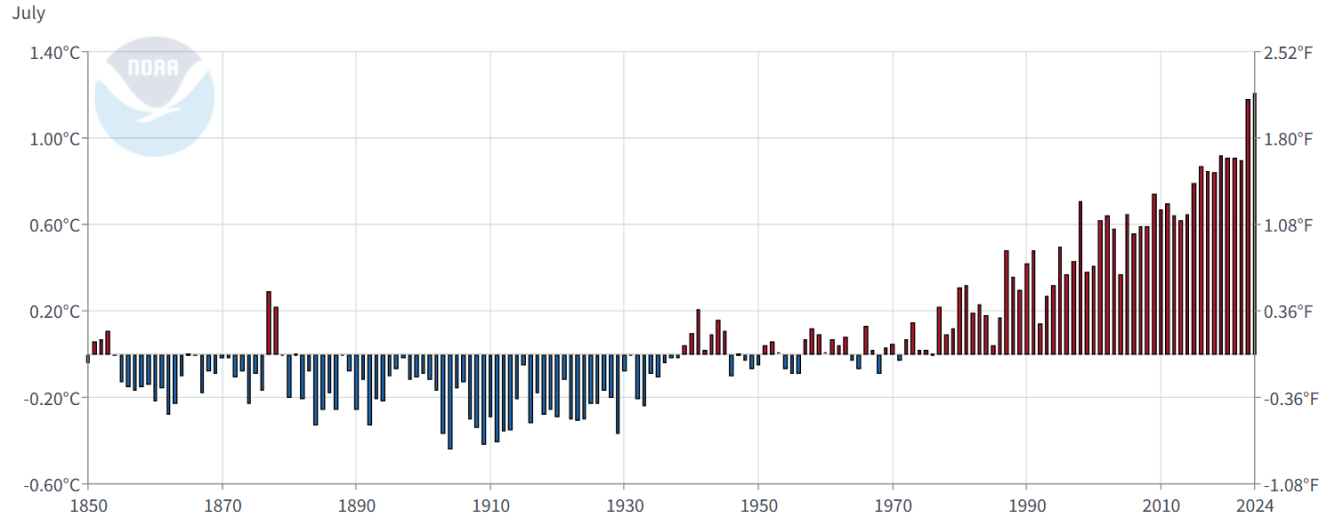


Extreme Heat or Cold



Heat Waves hit US Coasts (July 2024)

Global Land and Ocean Average Temperature Anomalies



Winter storm Uri sparks energy crisis: Cold blast freezes natural gas pipelines and wind turbines, 5 MILLION are left without power and electricity and oil prices surge to record highs (Daily Mail)

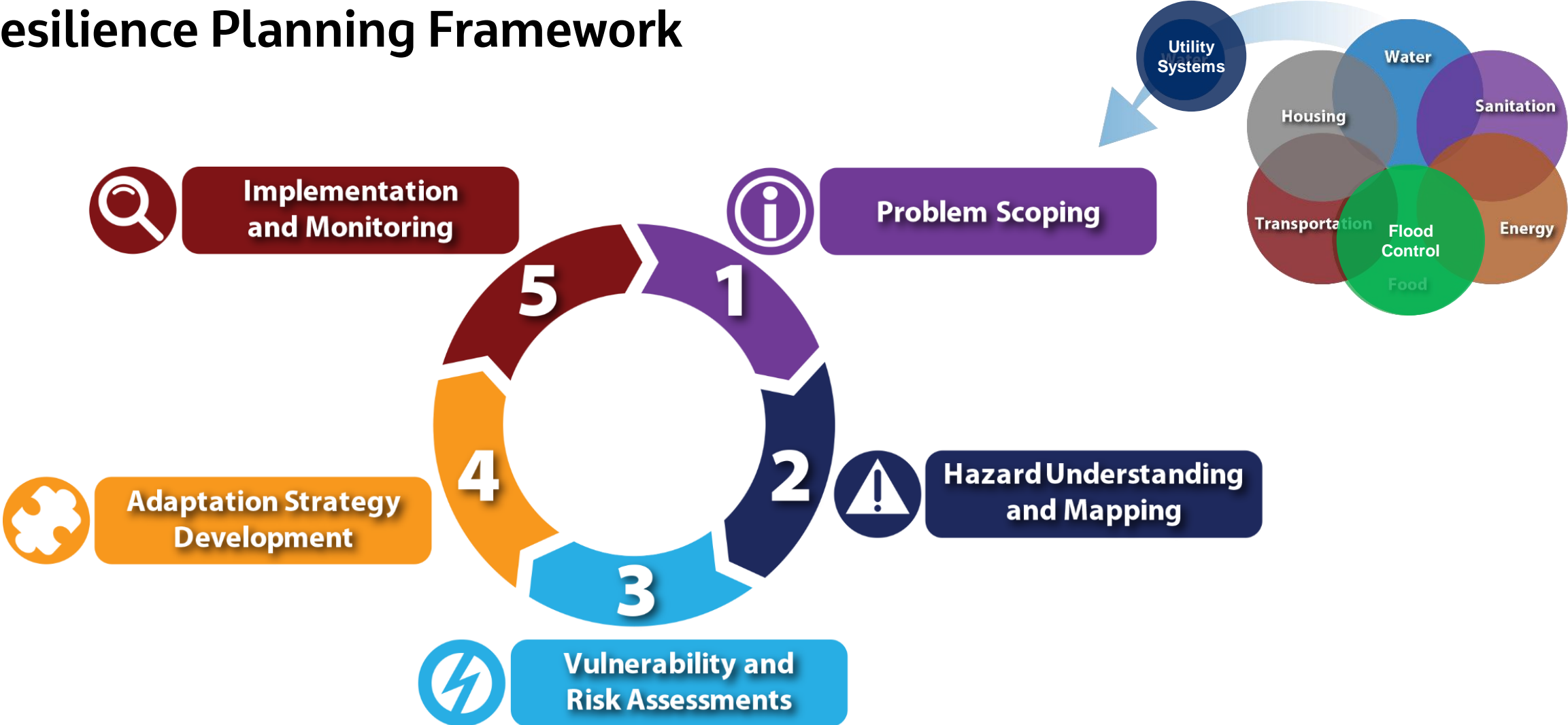
FLOODING – Atmospheric Rivers Drive Flood Major Damages in the US West, Hurricanes and Tropical Storms in the US Gulf and East, and Pluvial Flooding from Local Cloudburst Flood Events Everywhere



Accelerating Sea Level Rise, Coupled with Storm Surge Leads to Both Nuisance and Catastrophic Coastal Flooding



Resilience Planning Framework



CH2M Best Practice for Incorporating Climate Change in Infrastructure Planning, 2015

Building Resilient Utilities Panel Discussion



Challenging today.
Reinventing tomorrow.



**Robert Taylor,
P.E., C.E.M.**

Energy Manager



**Debbie Griner,
ENV SP**

Chief Resilience and
Sustainability Officer



**Armin Munévar,
P.E.**

Global Technologist for
Water and Climate
Resilience



Yari Escobar

Moderator



Q&A

We want to hear from you!

Delivering Resilience



Keeping cities, businesses and whole communities safe, resilient and adaptable to change is one of our core competencies

In the face of evolving natural hazards and climate threats, Jacobs offers robust solutions to provide tailored resilience services that fortify critical infrastructure, ensuring uninterrupted service delivery and safeguarding community well-being.

By partnering with us, you can confidently navigate climate challenges, overcome short-term shocks, enhance long-term service reliability and uphold your commitment to resilient governance.

We provide:

- Vulnerability Assessments and Risk Analysis
- Resilience/Adaptation Strategies and Climate Action Plans, including Policies, Funding Plans and Implementation Roadmaps
- Emergency Response Plans and Post-Disaster Recovery Plans
- Sustainable and Resilient Infrastructure (Horizontal and Vertical)
- Resilience Integration Through Design Criteria and Operational Policy
- Organizational Governance and Financial Resilience
- Stakeholder and Public Engagement
- Financial Solutions (Grants, Govt. Affairs, Strategies, Business Case Analysis)

Jacobs Challenging today. Reinventing tomorrow.



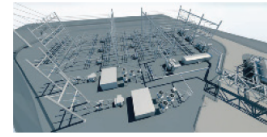
System Resilience Plan for JEA's Water, Wastewater Systems, Florida

JEA serves more than 1.5 million people across a 900-square-mile area spanning four counties. The utility retained Jacobs to develop a comprehensive Resilience Plan that serves as an action-oriented guide to position JEA for long-term reliability and resilience for its more than 1,400 water systems through identification of flood risk, development and prioritization of mitigation strategies, and the development of updated design standards to account for climate change for future capital projects.



Miami-Dade County Ocean Outfall Legislation Program, Florida

Miami-Dade Water and Sewer Department (WASD) selected Jacobs to deliver its ocean outfall legislation (OOL) Program, including a significant climate resiliency component. The program involves wastewater system master planning and design, procurement, construction and commissioning of more than 60 major capital projects to significantly reduce wastewater discharges to the ocean by 2025. To design facilities for longevity and low operations and maintenance costs, Jacobs evaluated the impacts of extreme weather and sea level rise on WASD's wastewater assets and developed a climate resiliency framework.



NJ Transit Microgrid, New Jersey

The primary objective of the New Jersey TransitGrid project is to improve the resiliency of electric supply to support transportation of passengers generally between the major transportation hubs of Hoboken Station, Secaucus Junction, Newark Penn Station and Penn Station New York and other stations in New Jersey. The TransitGrid system is being designed to run electrified trains in the event of partial or full grid outage lasting long enough to cause significant transportation system disruption. Jacobs is providing design services, procurement, and construction assistance for the design-build implementation and engineering support for permitting.



Port of San Francisco Waterfront Resilience, California

Providing a proactive and innovative strategy for managing vulnerabilities to address present and future natural hazards, this program will improve safety and resilience, including the design and engineering of seismic and flood risk reduction measures for this busy, iconic waterfront.



Let Us Help

Ready to get started on your resilience plan? Reach out to our regional expert.

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About Jacobs

At Jacobs, we're challenging today to reinvent tomorrow by solving the world's most critical problems for thriving cities, resilient environments, mission-critical outcomes, operational advancement, scientific discovery and cutting-edge manufacturing, turning abstract ideas into realities that transform the world for good. With approximately \$14 billion in revenue and a talent force of more than 55,000, Jacobs provides a full spectrum of professional services including consulting, technical, scientific and project delivery for the government and private sector.

Jacobs

Thanks for joining!

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Challenging today.
Reinventing tomorrow.



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