

# MITRE CLIMATE AND ENVIRONMENTAL SCIENCE



Energy. Water availability. Food security. Public health. The national security implications of changes in climate, urbanization, and extreme weather are clear. To combat these threats, the nation must adapt to current and projected future environmental changes. Adaptation requires trusted solutions and strong partnerships among government, industry, and academia.

## **MITRE works in the public interest to bring independent, data-driven, science-based solutions to complex environmental problems.**

Our success comes from applying deep expertise in systems analysis across research fields and operational sectors to solve key challenges with approaches such as:



### **INTEGRATING SENSORS, INDICATORS, & WARNING SYSTEMS**

Applying sensing and analytics expertise to measure and evaluate signals of environmental and energy changes to inform decision-making



### **ENHANCING ENVIRONMENTAL RESILIENCE**

Developing innovative and equitable adaptation and mitigation engineering solutions to strengthen water and energy security in the context of social equity-based environmental policy and technologies

MITRE's reputation as a trusted, non-profit advisor, coupled with our investment in climate and environmental science research and applications, enables us to identify, evaluate, develop and transition economically viable solutions to the most difficult global challenges.



The effects of climate change are a national security issue, impacting DOD's missions and operational plans, readiness, our installations, and the Department's budget."

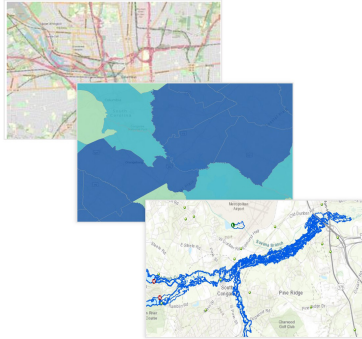
Dr. Kathleen Hicks,  
Deputy Secretary of Defense

## LEARN MORE

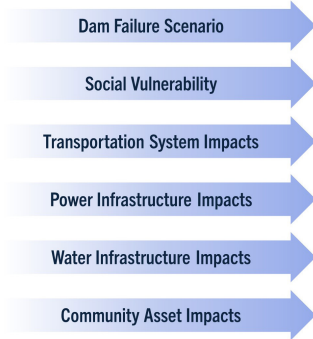
### Dam System Resilience

Modeling the potential impacts of dam safety events on critical functions and communities outside the inundation area; Prioritizing impact to different infrastructure services to provide informed decision support

#### Geospatial & Inundation Area Data



#### Example Analyses



#### Decision Support Tool

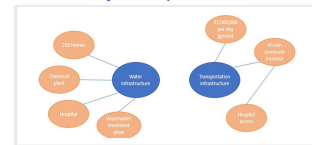
##### Prioritization

Dam Name	Risk Level
Dam A	.98
Dam B	.97
Dam C	.86
Dam D	.39
Dam E	.33

##### Multi-Criteria Decision Analysis

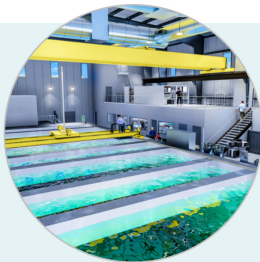
Criterion	Value	Weight	Criterion	Value	Weight
Age	X	X	Dam Material	X	X
Dam Condition	X	X	Transportation System	X	X
Inundation Area	X	X	Community Impact	X	X
Operational Issues	X	X	Power Capacity Affected	X	X
Extreme Loading Risk	X	X	Emergency Response	X	X
Surface Runoff	X	X	Emergency Response	X	X
Seismic Risk	X	X	Emergency Response	X	X
			Social Vulnerability	X	X

##### Critical Function and Community System Dependencies



### BlueTech Consortium

Creating partnerships to develop a world class maritime testing facility; promote cross-sector collaboration; accelerate development of technology; and develop the BlueTech workforce of the future.



**Build  
BlueTech Lab**



**Connect  
Ecosystem**



**Accelerate  
Technology**



**Grow  
Workforce**

Outcomes

For information about MITRE's Climate and Environment expertise and capabilities, contact [climate@mitre.org](mailto:climate@mitre.org), Jeffrey Arnold, Chief Scientist, at [jarnold@mitre.org](mailto:jarnold@mitre.org) or Jenn Richkus, Climate Strategist, at [jasrichkus@mitre.org](mailto:jasrichkus@mitre.org), MITRE Climate and Environmental Sciences Office



*MITRE's mission-driven teams are dedicated to solving problems for a safer world. Through our public-private partnerships and federally funded R&D centers, we work across government to tackle challenges to the safety, stability, and well-being of our nation.*

**MITRE** | SOLVING PROBLEMS  
FOR A SAFER WORLD®