BUILDING INNOVATION
Conference

THE INNOVATION CROSSROADS:

Risks and Rewards

PRESENTERS

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INNOVATION DEFINED

Innovation:

The introduction of something new.

-Merriam-Webster

RISK FOR EARLY ADOPTERS

Increased Uncertainty

Novelty of the subject matter + inexperience creates uncertainty:

- Capabilities
- Limitations
- Performance variables
- Environmental considerations
- Cultural considerations
- Installation requirements
- Operating/maintenance requirements
- Third party approval requirements
- Additional considerations

This increases the risk of errors and claims.

Case Study #1

Project Name:

The Titanic

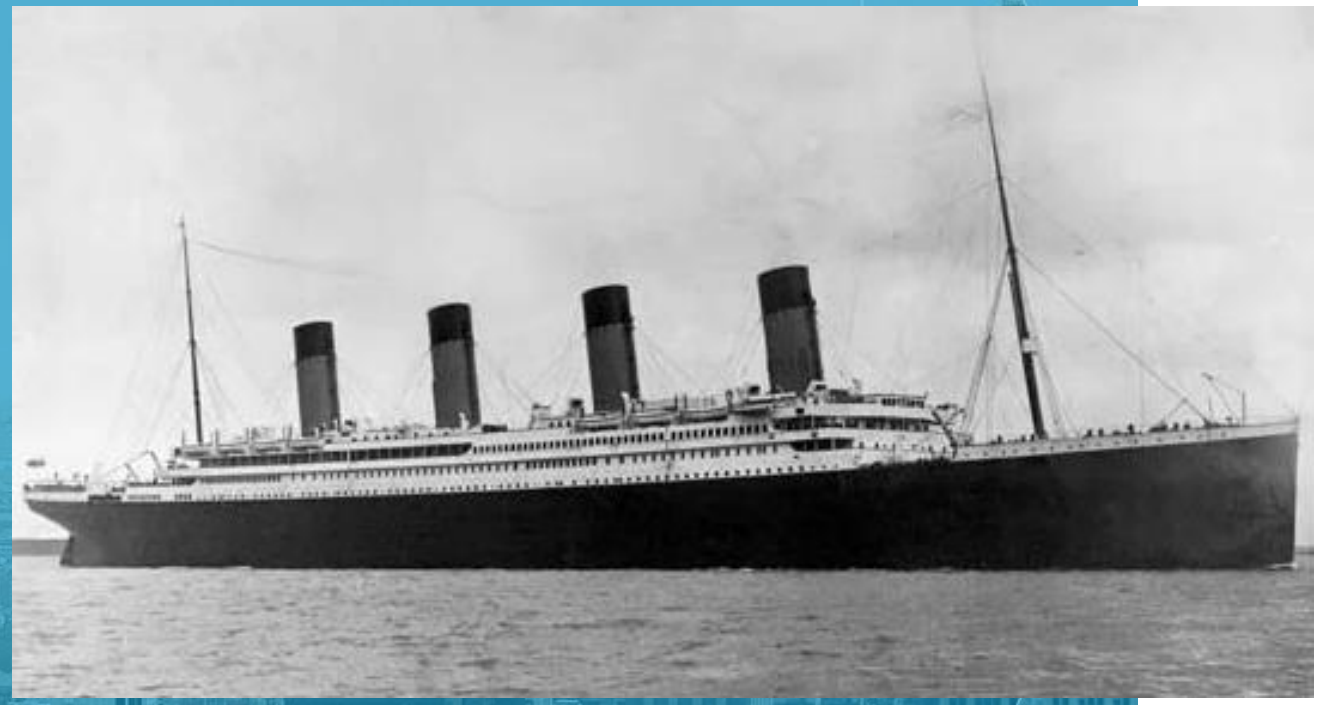


Image Source: Encyclopedia Britannica

Location: North Atlantic Ocean

Scenario: At the time of its creation, the Titanic incorporated the latest, state of the art design and technology including a "wireless communication" system. The novelty of this technology and lack of standards regarding their use made it more difficult to organize a rescue effort.

"It was like trying to organize a rescue on Twitter, with operators trying to make sense of the stream of sometimes contradictory information.

-Sean Coughlan, BBC

Image Source: Encyclopedia Britannica

Case Study #2

Project Name:

Standard Oil Building Chicago/Aon Center

Location: Chicago, Illinois

Scenario: The Standard Oil Building was among the first to be clad with thin sheets of marble. Chicago's extreme weather caused it to bow outward, undermining its structural integrity and causing cracks to form. The building's exterior was eventually replaced with white granite.

"The stones' inherent faults weren't always apparent. That's because until recently, marble, like other stones, was used in big blocks for building."

-Chicago Tribute, 1988

Image Source: Business Insider

Case Study #3

Project Name:

The Vdara

Location: Las Vegas, Nevada

Scenario: Hotel's curved, glass façade reflected a hot ray onto the pool area below when hit by the sun at a certain angle causing injuries to pool goers and damage to property below.

"I knew this was going to happen but there was a lack of tools or software that could be used to analyze the problem accurately…

-Rafael Viñoly

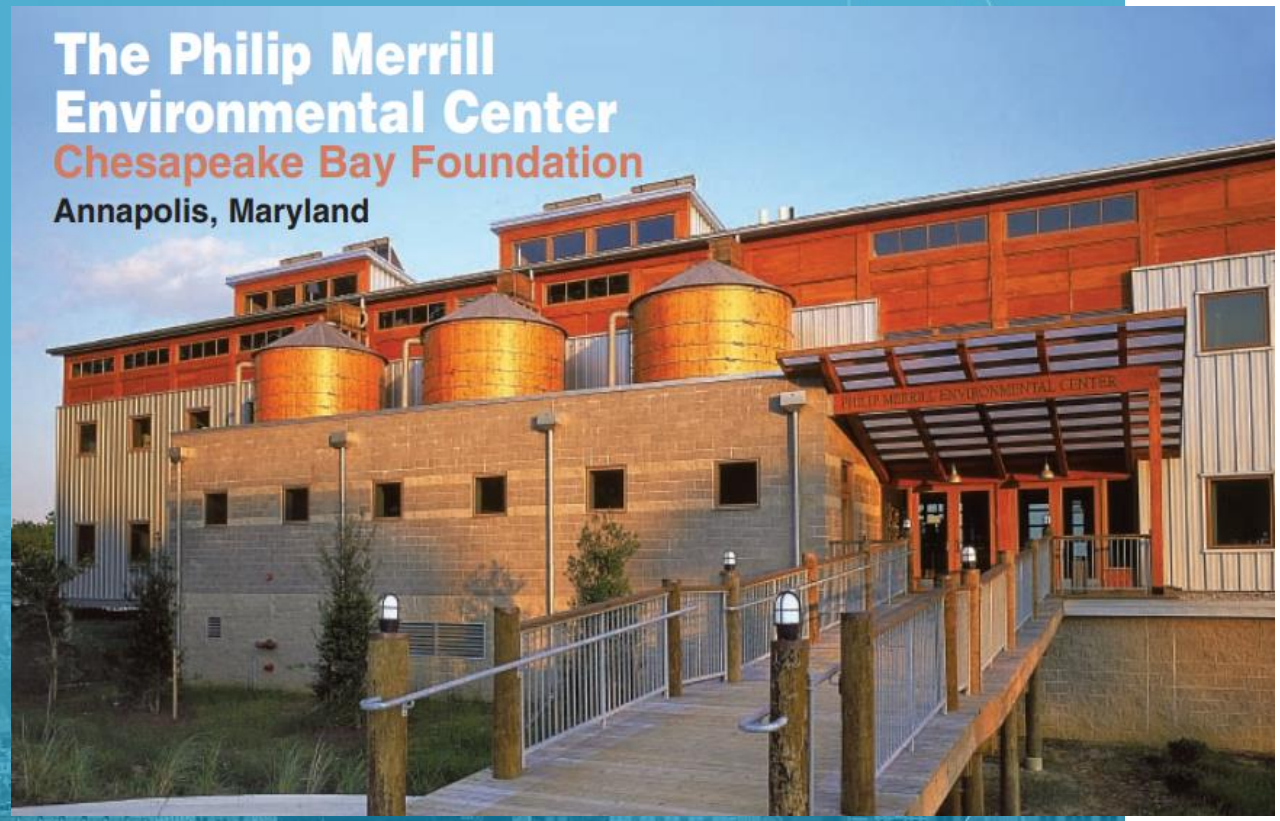


Image Source: Chesapeake Bay Foundation (cbf.org)

Case Study #4

Project Name:

Philip Merrill Environmental Center

Location: Annapolis, Maryland

Scenario: Project Owner alleged over $9.3 million in damages due to water damage caused by rotting and deterioration of green building material represented by manufacturer to be suitable for outdoor use.

"The World's First LEED Platinum Building…All materials used in building the Philip Merrill Environmental Center are made of recycled products or created through processes that don't damage the environment…"

Image Source: Green Building Law Update

Case Study #5

Project Name:

Captain's Galley Condominiums

Location: Crisfield, Maryland

Scenario: Project Owner alleged damages in the amount of a $635,000 state tax credit that was lost when the completed structure failed to secure LEED Silver Certification.

"Project is designed to comply with a Silver Certification Level according to the US Green Building Council's Leadership in Energy & Design (LEED) Rating System…"

Image Source: KB Homes

Fire-Resilient Certification the new LEED?

"In keeping without tradition of innovation we are pleased to offer today's buyers the ability to choose a wild-fire resilient home and community. We are proud that our new Dixon Trail community with its system of mitigation features is the first in the nation to meet IBHS' wildfire resilience standards at the homesite level and at the neighborhood level."

-Jeffrey Mezger, KB Homes

EMERGING ISSUES:
To Use or Not to Use

Generative AI

Some clients explicitly specify in the Professional Service Agreements that selected design firms will not be permitted to use Generative AI platforms or capabilities in the performance of their services.

Climate Modeling

Use of climate modeling services to identify likely physical vulnerabilities for a structure in a particular locality.

MANAGING RISKS

1 **Communicate clearly**
Communicate and document clearly.

2 **Engage experts**
Seek necessary advice from experts.

3 **Schedule and budget**
Consider the impact to the projects schedule and budget.

4 **Prepare alternatives**
Have a back-up plan in place.

5 **Consider all factors**
Consider all relevant factors, such as the impact of location, geography & micro-climate.

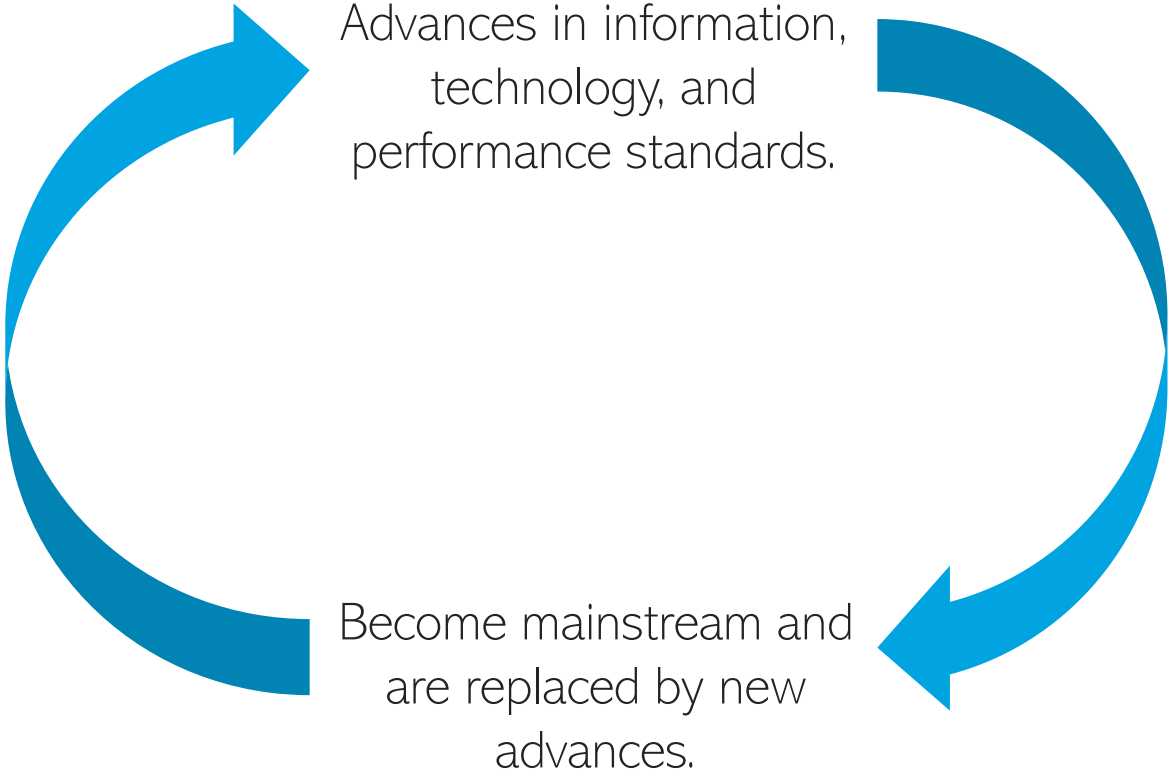
Contract Considerations

Address the following in a written agreement:

- Right to rely on the manufacturer's representations?
- Is independent testing required?
- What are the variables that impact performance?
- Who controls those variable?
- What are the consequences of defects or deficiencies?
- What are your rights and remedies in the event of defects or deficiencies?

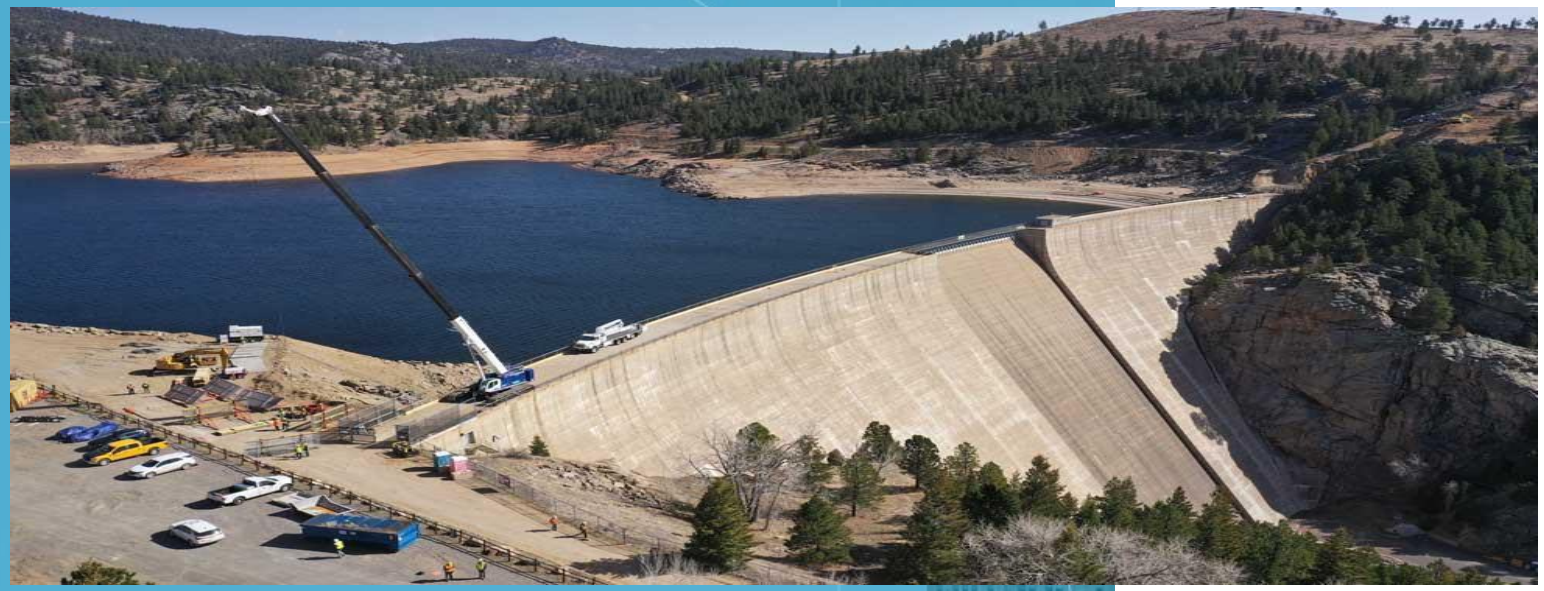
INNOVATION:
An Evolving Metric

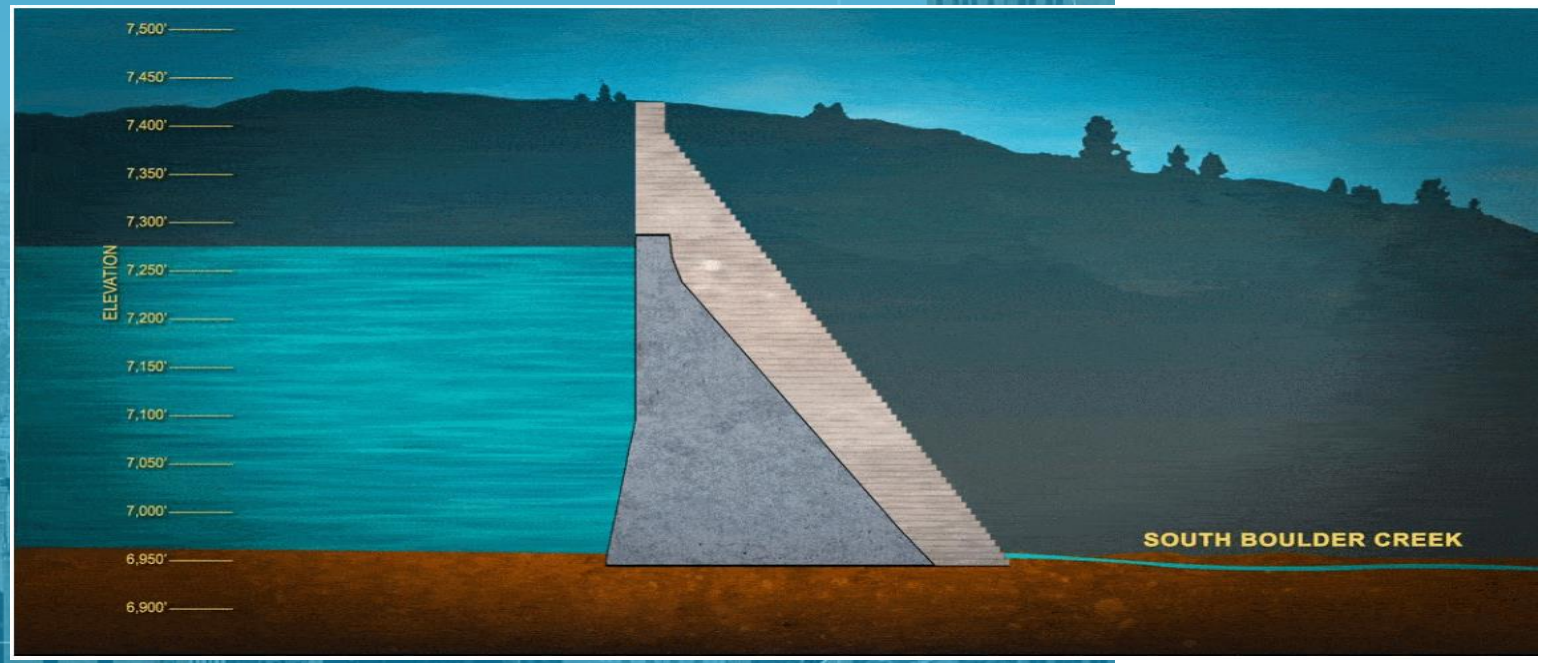
As advances become the norm, the standard evolves.



WHAT COURTS ARE TELLING US: At a Crossroads

May 21, 2025





Case Study #1

Project Name:

Gross Reservoir Expansion

Location: Boulder County, CO

Objective: Increase water storage capacity to meet future demand

Key Features:

- Raise dam height by 125 feet
- Triple reservoir capacity

Timeline of Key Events

Gross Reservoir Dam Expansion (2002 – ongoing)

2002: Denver Water initiates planning for Gross Reservoir Expansion Project

July 2017: Army Corps Issues Clean Water Act Permit

Dec 2018: Environmental Groups file lawsuit challenging permit

Oct 2024: U.S. District Court rules that Corps violated NEPA and CWA by failing to consider climate change impacts and reasonable alternatives

April 2025: Court vacates permit; halts construction after hundreds of millions (~$450M) have been spent.

April 6, 2025:
"Denver Water took a calculated risk when it decided to move forward with construction despite the lawsuit…this Court will not reward [them] for starting construction…despite being aware of the seriousness of the environmental law challenges…"

Problem

Army Corps acknowledged that future climate *conditions (higher temps, more evaporation, less streamflow)* could shrink water supply and reduce purpose of project

Missed Step

Army Corps refused to model, quantify how serious the water loss might be

- No climate modeling and no scenario analysis.

Court Reaction

Without accounting for future water losses, the Corps' conclusion that a dam expansion was the best option rested on guesswork.

Case Study #2

Project Name:

Battery Park City Resiliency – Wagner Park

Location: New York City, NY

Objective: Provide flood and storm surge protection

Key Features:

- Flood walls/resiliency infrastructure
- Elevated parkland
- Demolition/reconstruction of park pavilion
- Incorporation of 2050 sea-level rise projections (30”)

Timeline of Key Events

Battery Park City Resiliency Project: 2015-ongoing

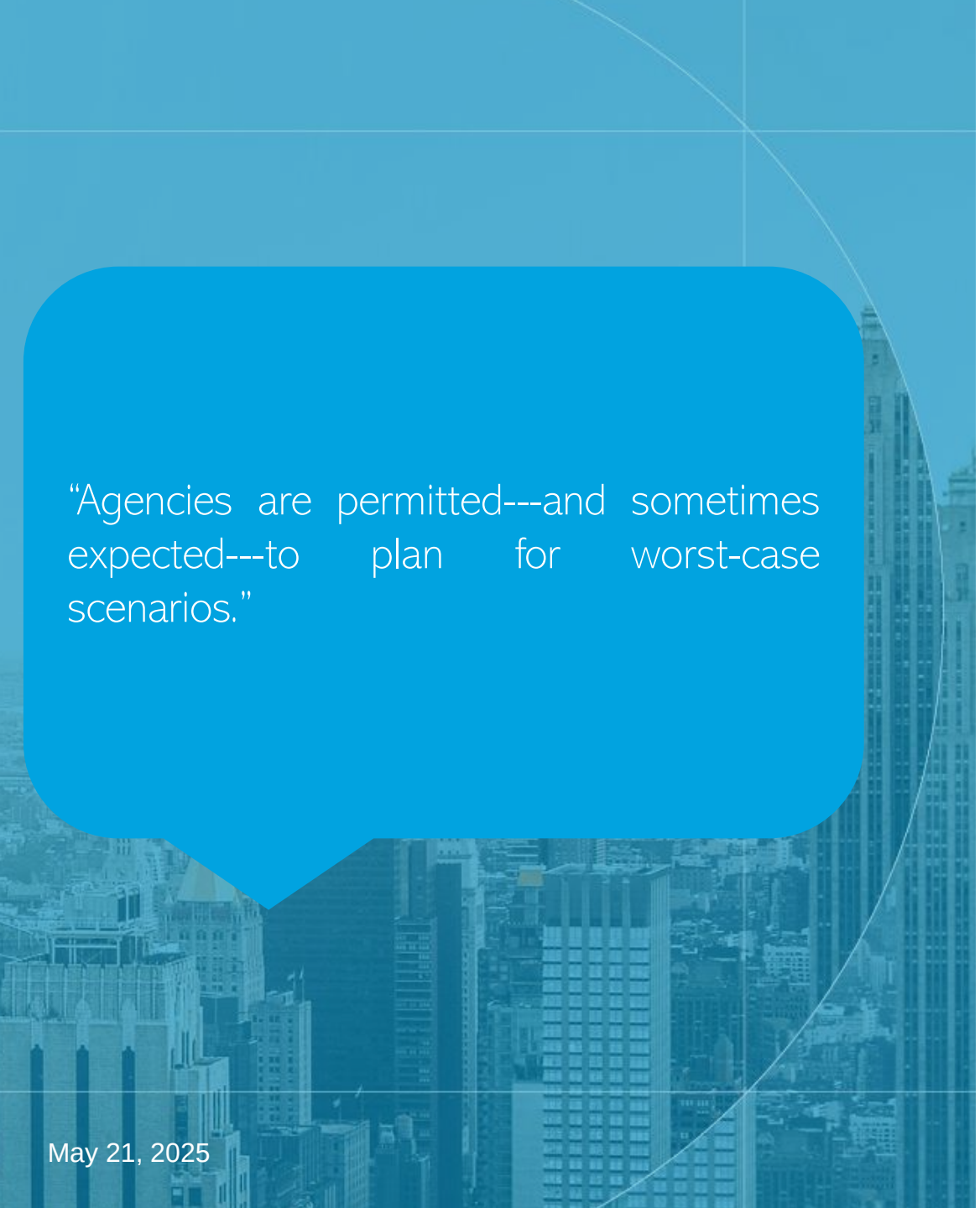
2012: Superstorm Sandy devastates NYC, causing >$10M in damage to BPCA assets

2015: BPCA begins design/planning for South Battery Park City Resiliency Project

2021-22:SEQRA environmental review/public comment

2023: Lawsuit filed to block construction in Wagner Park

Feb 2023: NY trial court denies injunction; project allowed to proceed



"Agencies are permitted---and sometimes expected---to plan for worst-case scenarios."

Problem

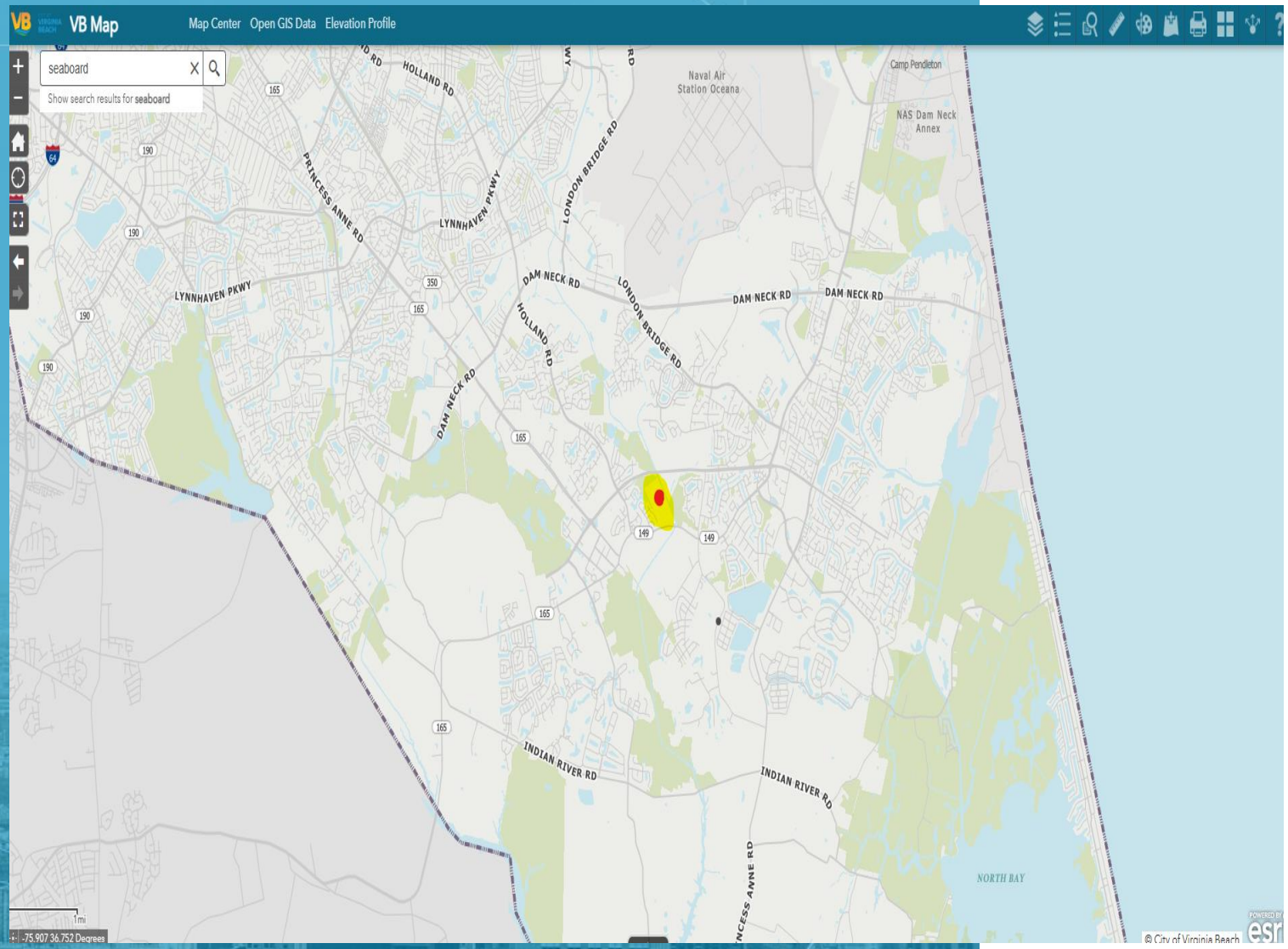
Superstorm Sandy exposed flood risks and future model showed rising sea levels and stronger storms threatening the park.

Missed Step

Opponents to the project alleged that the Authority "failed to consider reasonable alternatives" and was destroying too much of the existing park

Court Reaction

Authority properly exercised discretion to prioritize long-term resilience and public safety even if it means "substantial alterations" to the park



Case Study #3

Project Name:

"Holland Swamp"

Location: Virginia Beach, VA

Objective: To build a 32-home subdivision in Virginia Beach

Key Features:

- Rezoning of land from agricultural use
- Project was located in a low-lying area near existing wetlands and flood-prone neighborhoods
- City had adopted forward-looking policies requiring review of future flood risk, 1.5 feet sea level rise, and updated rainfall patterns.

UNPACKING THE COURT REACTION

Problem

Proposed neighborhood would have been built on flood-prone land and climate projections showed worsening conditions.

Missed Step

Single ingress/egress to development currently flooded, even without integrating future sea level rise and increased rainfall. Developer refused to submit additional analysis/solutions that could convince City Council.

Court Reaction

Court ruled that it was reasonable and necessary for the City to factor in future climate conditions when deciding whether new housing was safe.

Risk Management Takeaways

Future climate risks weren't in the budget. Then they WERE the budget.

For Design Firms

Educate yourself on climate projection data sources.

For Owners/Contractors

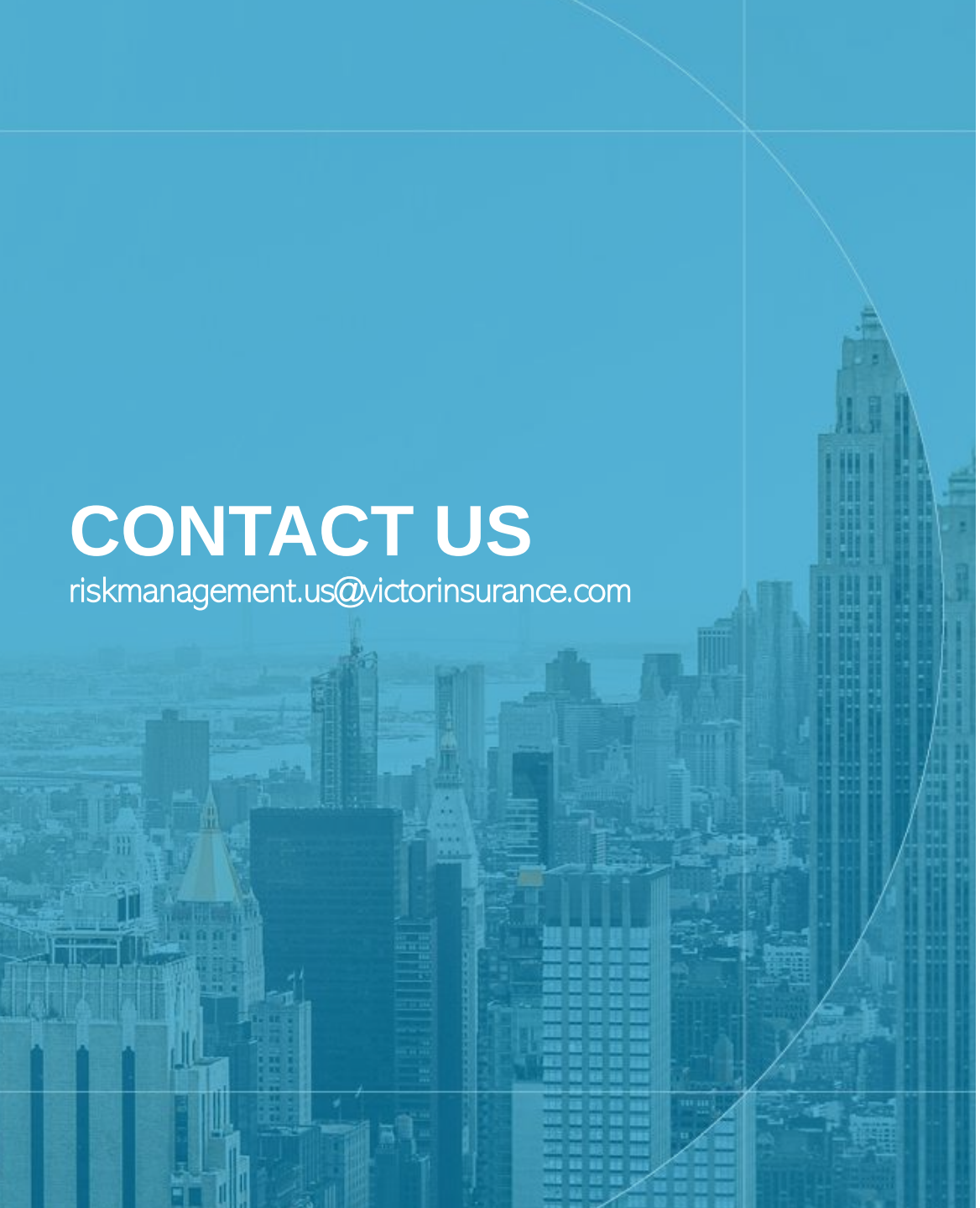
Ask proactively about future climate projections.

For All Project Stakeholders

Make sure contract defines response to climate risks.

Relying on historic weather alone is a risk.

Integrate takeaways into project analysis for protection.



CONTACT US

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THANK YOU

For Your Time