

# Legal Liability for Failing to Adapt: Climate Change and the Evolving Liability of Design/Build Professionals, Developers, Realtors, & Owners



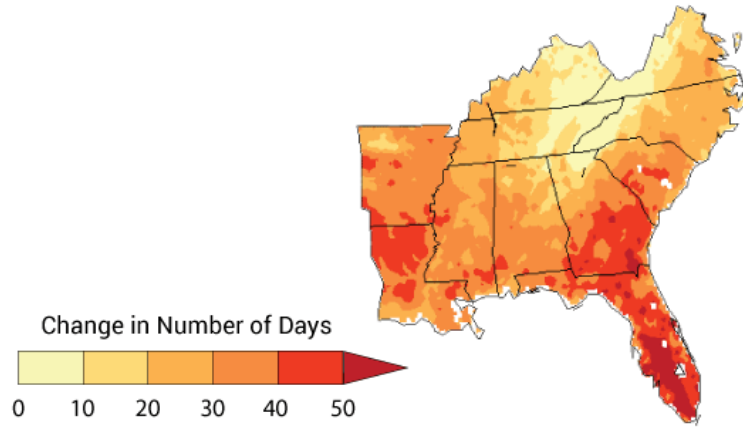
Elena Mihaly, Staff Attorney  
Conservation Law Foundation  
April 27, 2018

# Overview

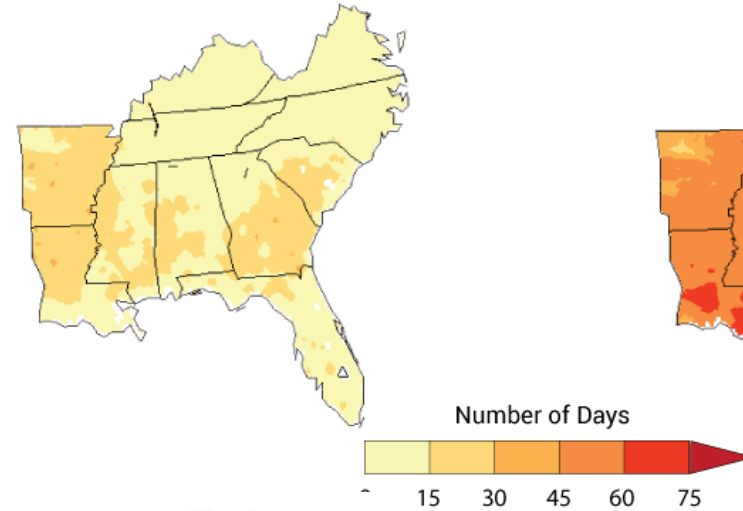
1. Climate change and rising standard of care for design professionals
2. Intro to CLF's new Report, *Climate Adaptation & Liability*
3. *CLF v. Exxon Mobil*
4. Opportunity for collaboration between legal and design community

## Projected Change in Number of Days Over 95°F

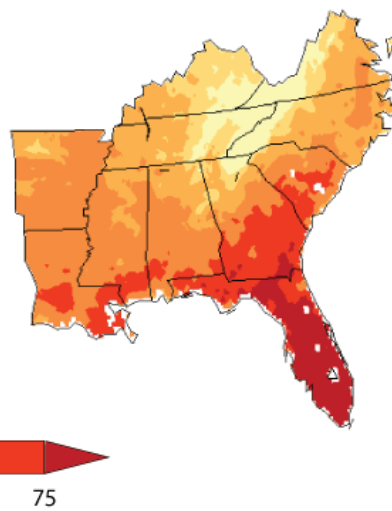
Projected Difference from Historical Climate



Historical Climate (1971-2000)

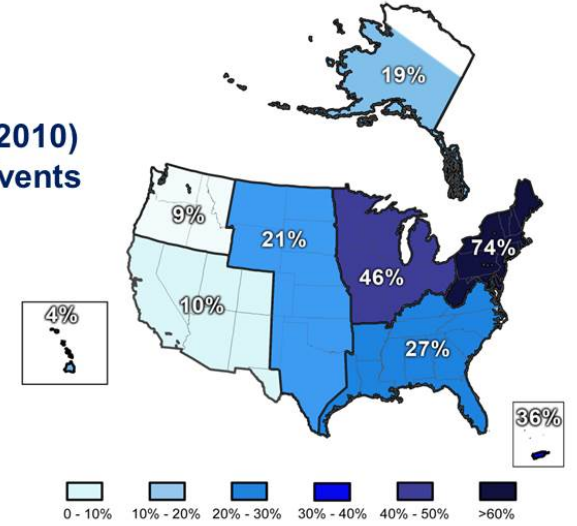


Projection (2041-2070)

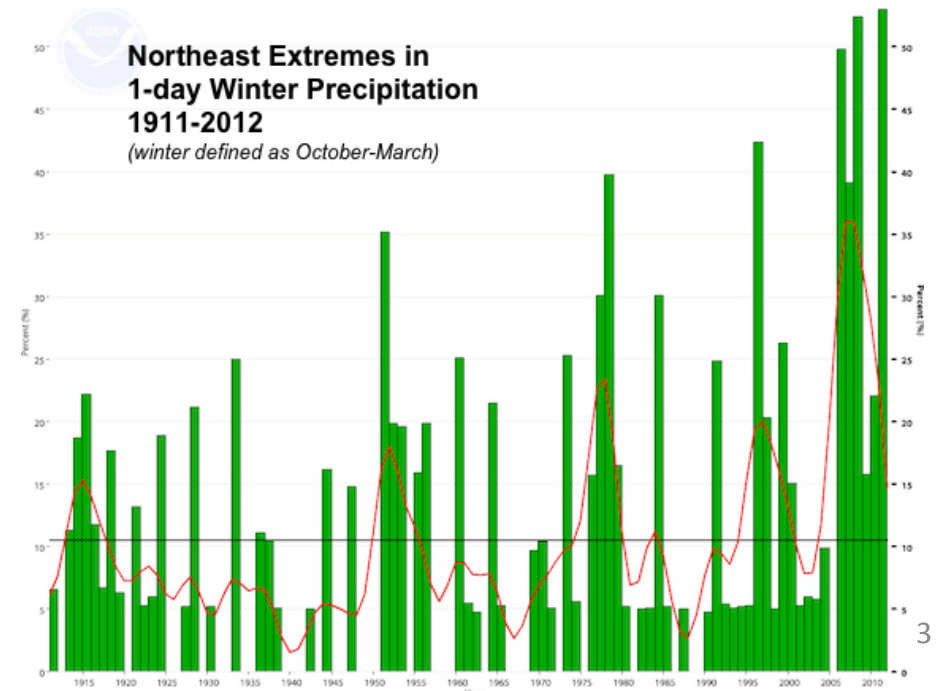


## Regardless of Shifts in Total Annual Rain More of It Is Coming in Heavy Downpours

Percent Increase (1958-2010)  
in Heavy Precipitation Events  
(>2inch/48 hr)



NOAA, provided by A. DeGaetano, NERCC, Cornell



**Kivalina v. ExxonMobil (2008)**

**CLAIM:** Public nuisance; GHG emitters unreasonably interferes with P's right to use and enjoy property in Kivalina.

**OUTCOME:** dismissed; political question and lack of standing.



**AEP v. CT (2011)**

**CLAIM:** The lawsuit alleged that five utility companies, which operate facilities in 21 states, were a public nuisance because their carbon-dioxide emissions contribute to global warming.

**OUTCOME:** "The Clean Air Act and the EPA action the Act authorizes displace any federal common-law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired power plants."

DESIGN → FINANCE → CONSTRUCT → INSURE → SELL → OPERATE → MAINTAIN





Is the “octopus in the parking garage” the new “elephant in the room”?



# When Rising Seas Transform Risk Into Certainty

Along parts of the East Coast, the entire system of insuring coastal property is beginning to break down.

By BROOKE JARVIS APRIL 18, 2017







Beauty

Photo Center

CVS/pharmacy

LAD



# The Adaptive Urban Habitat

With its controlled density and the promotion of progressive urban strategies, Red Hook has become an archetype for environmentally-sustainable urban coastal living. These strategies could be applied to greater NYC, as well as all cities facing the threat of encroaching waters. A comprehensive rethinking of all urban systems, from building technology to transit, local ecology and human behavior represents a new mode of conscious urban development. Breaking down the barriers between human habitation and local ecologies reestablishes a symbiotic relationship between people and their natural environment currently missing from modern discourse and practice.

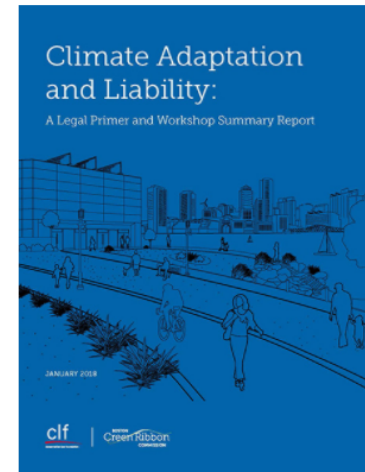




## Climate Adaptation and Liability: A Legal Primer and Workshop Summary

JAN, 2018

Climate change impacts are affecting New England communities now, so CLF set out to determine the liability risks of government entities and other decision makers if they fail to prepare for these impacts. The result is the CLF Climate Adaptation and Liability report, which looks at the theories of legal liability for design professionals (such as engineers and architects) or government entities (like a city or a water reclamation district) when it comes to climate adaptation of buildings, roads, and other critical infrastructure.



[DOWNLOAD](#)

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# Negligence = Duty + Breach + Causation + Harm

- “The law imposes upon persons performing architectural, engineering, and other professional and skilled services the obligation to exercise a **reasonable degree of care**, skill, and ability, which generally is taken and considered to be such a degree of care and skill as, under similar conditions and like surrounding circumstances, is ordinarily employed by their respective professions.” *Bodin v. Gill*, 117 S.E.2d 325 (Ga., 1960).
- Duty (a.k.a. “standard of care”) established through analysis of:
  1. What’s written in contract?
  2. Knowledge of climate change impacts
  3. Applicable regulations
  4. Industry custom
  5. Foreseeability of harm

# 1. Are design standards written into the contract?

- E.g., Use of particular materials such as “hurricane straps” to insure the roof and structural integrity of a structure
- E.g., Bridge will be built to a 25 year design life

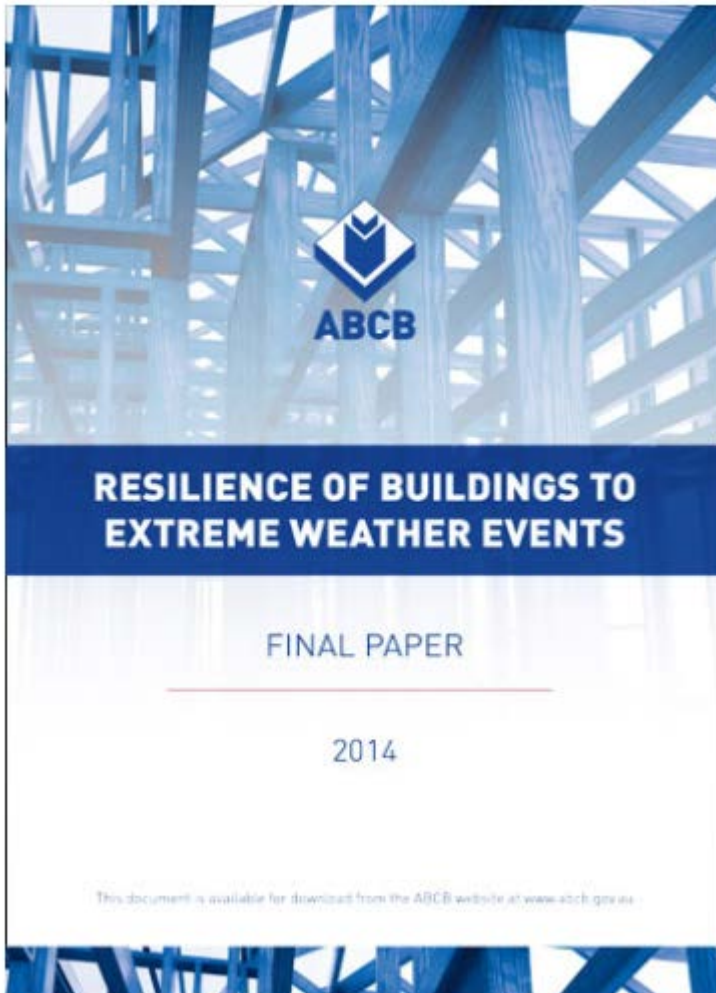
## 2. Knowledge of Climate Change Impacts

- Was there publicly available flood or storm surge maps for the area or other indications of possible climate related hazards?
- Was there a recent climate vulnerability study for the area?
- Did design professional engage a “climate expert” to provide site-specific advice?



## 3. Applicable Codes & Regulations

- Applicable industry codes (zoning, subdivision, or building codes) may function as evidence when courts are determining the proper standard of care to be applied.
- BUT compliance is not necessarily a liability shield: do the relevant codes/standards contemplate future climate change?



The Australian Building Codes Board, the body responsible for administering the Building Code of Australia (BCA), published a report finding that “[i]f the climate changes in accordance with high emissions scenarios ..., the current BCA is likely to be deficient in some areas.” The same paper noted that the National Construction Code does not currently address “hail, storm tide, or have specific requirements relating to heat stress.”

## Structural design actions

### Part 2: Wind actions

Superseding AS/NZS 1170.2:2002

AS/NZS 1170.2:2011

## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee, BD-006, General Design Requirements and Loading on Structures, to supersede AS/NZS 1170.2:2002.

*This Standard incorporates Amendment No. 1 (September 2012), Amendment No. 2 (December 2012), Amendment No. 3 (July 2013) and Amendment No. 4 (August 2016). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

The objective of this Standard is to provide wind actions for use in the design of structures subject to wind action. It provides a detailed procedure for the determination of wind actions on structures, varying from those less sensitive to wind action to those for which dynamic response must be taken into consideration.

The objectives of this revision are to remove ambiguities, to incorporate recent research and experiences from recent severe wind events in Australia and New Zealand.

This Standard is Part 2 of the AS/NZS 1170 series *Structural design actions*, which comprises the following parts:

AS/NZS 1170, Structural design actions

Part 0: General principles

Part 1: Permanent, imposed and other actions

Part 2: Wind actions

Part 3: Snow and ice actions

AS 1170, Structural design actions

Part 4: Earthquake actions in Australia

NZS 1170, Structural design actions

Part 5: Earthquake actions—New Zealand

**The wind speeds provided are based on analysis of existing data. No account has been taken of any possible future trend in wind speeds due to climatic change.**

This edition differs from the previous edition as follows:

- (a) A torsional loading requirement in the form of an eccentricity of loading is prescribed for tall buildings greater than 70 m in height (see Clause 2.5.4).
- (b) Addition of windborne debris impact loading criteria (Clause 2.5.8).
- (c) Regional wind speeds  $V_1$ ,  $V_{250}$ ,  $V_{2500}$ ,  $V_{5000}$  and  $V_{10000}$  have been added for serviceability design requirements, and for compatibility with AS/NZS 1170.0 (see Clause 2.5.2).

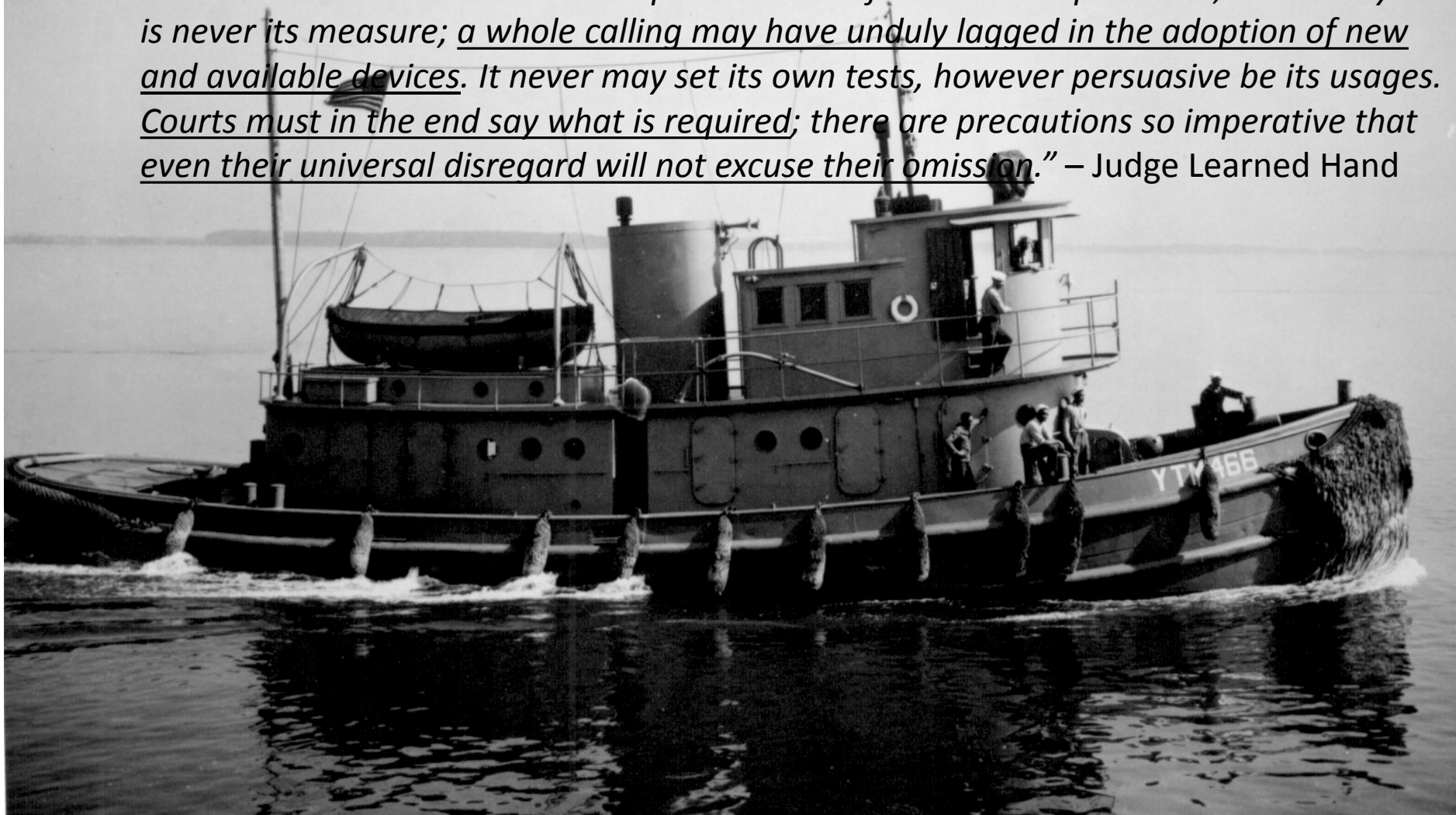
A3

## 4. Industry Custom

- Industry custom may serve as useful guide to establish standard of care, but court ultimately makes the call.
- Underlying theory: just because many people engage in unreasonable behavior does not make the behavior reasonable.

## **T.J. Hooper v. Northern Barge Corp, 60 F.2d 737, 740 (2d Cir.) (1932)**

- **CLAIM:** petition by tug-boat owner to limit liability for loss of barges during big storm
- **OUTCOME:** petition denied; tug boat owner liable because it failed to equip its tug boats with radios (which would have provided timely warnings of the approaching storm) although such radios were not in 1928 a common practice on tugs.
  - *“Indeed in most cases reasonable prudence is in fact common prudence; but strictly it is never its measure; a whole calling may have unduly lagged in the adoption of new and available devices. It never may set its own tests, however persuasive be its usages. Courts must in the end say what is required; there are precautions so imperative that even their universal disregard will not excuse their omission.” – Judge Learned Hand*



# Key Takeaways re: Industry Custom

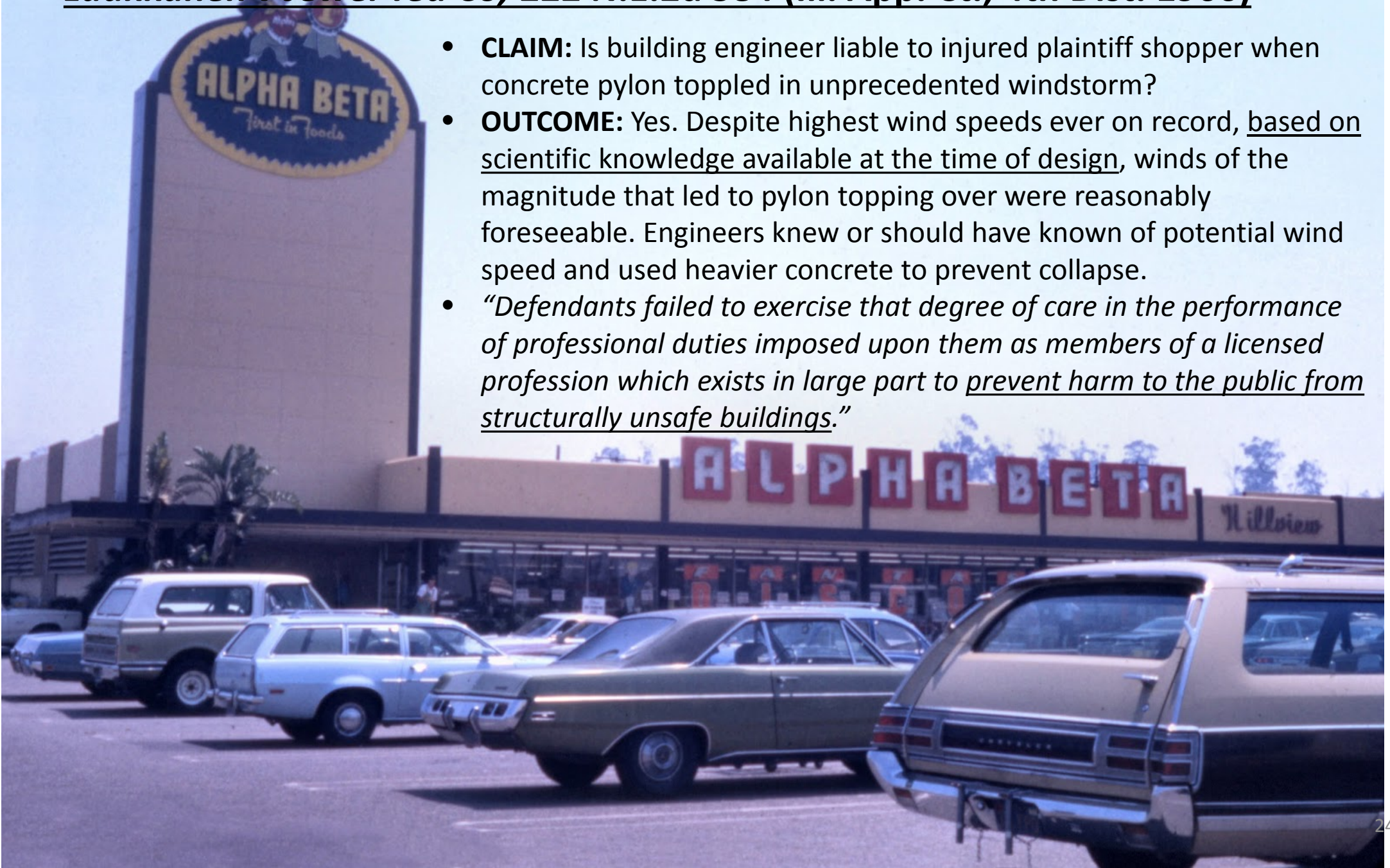
If determining whether going beyond industry custom is required, ask the following:

- Is use of the technology (thicker window glass) or practice (climate modeling) imperative to guard against serious risk?
- What is the cost/benefit ratio of adopting the enhanced standard?
- Have some others in the industry (even if not the majority) adopted this approach?

## 5. Foreseeability of Harm

- A reasonable design professional is ordinarily only responsible for injuries or damages which are known or could be reasonably foreseen.
- The test is not only whether he or she did in fact foresee the harm but whether he or she should have foreseen it, given all the circumstances including the expertise of the design professional.
- Even unprecedented events can be determined “foreseeable.”

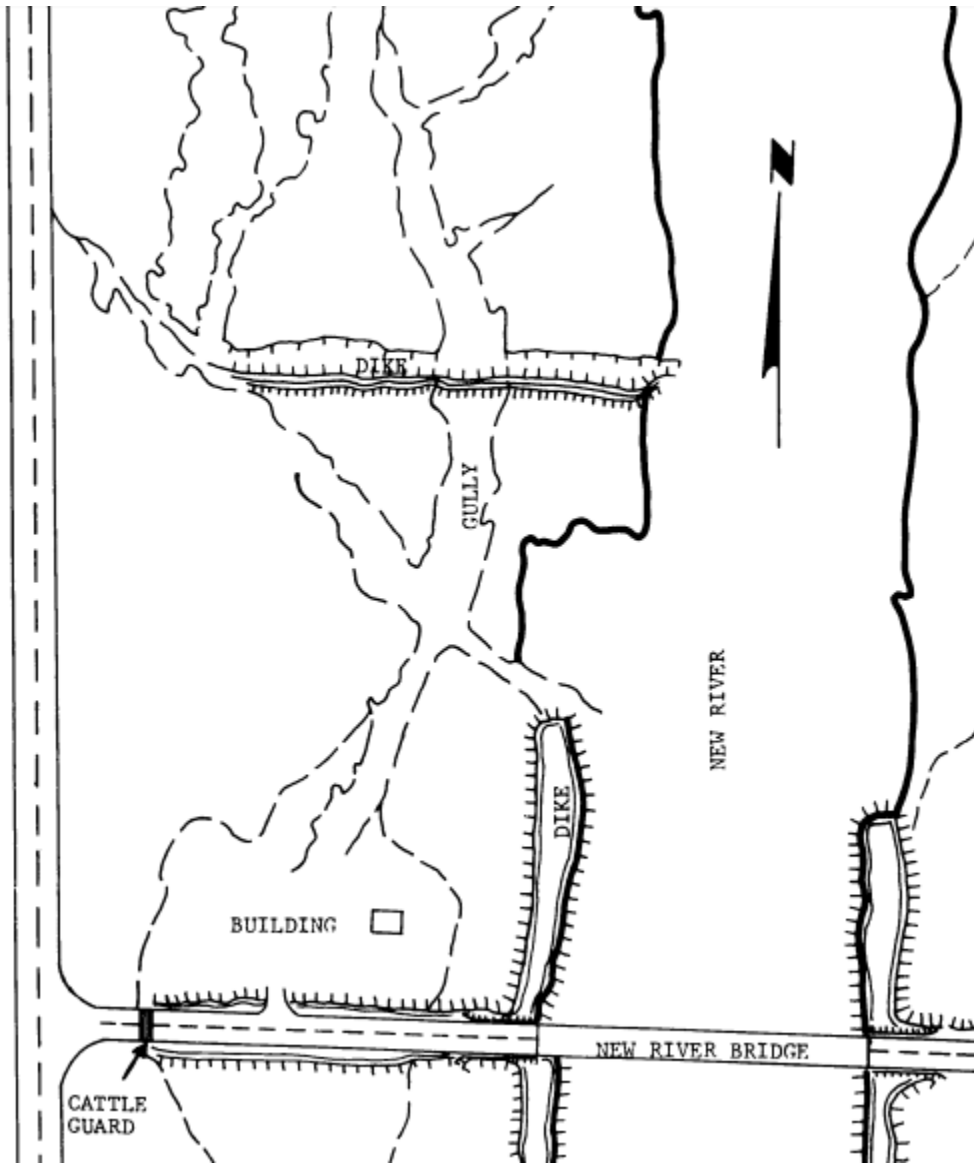
## Laukkanen v Jewel Tea Co, 222 N.E.2d 584 (Ill. App. Ct., 4th Dist. 1966)



- **CLAIM:** Is building engineer liable to injured plaintiff shopper when concrete pylon toppled in unprecedented windstorm?
- **OUTCOME:** Yes. Despite highest wind speeds ever on record, based on scientific knowledge available at the time of design, winds of the magnitude that led to pylon topping over were reasonably foreseeable. Engineers knew or should have known of potential wind speed and used heavier concrete to prevent collapse.
- *“Defendants failed to exercise that degree of care in the performance of professional duties imposed upon them as members of a licensed profession which exists in large part to prevent harm to the public from structurally unsafe buildings.”*



# Foreseeability of Damages to Third Parties



- ***Laukkanen*** makes clear that privity of contract is not a prerequisite to claiming liability. Customers entering the mall were foreseeable parties to the engineer.
- ***LH Bell & Assoc Inc v Granger, 112 Ariz 440 (Ariz 1975)***. Negligent design of bridge because—even though design met contractual flood standard of 25-yr-flood—it failed to consider and protect against foreseeable flooding of adjacent properties.

# Key Takeaways re: foreseeability

- Has the climate event (e.g., extreme rainstorm, hurricane, storm surge) occurred before?
- If not, was there scientific knowledge that such an event could occur?
- Adapting/preparing a structure for climate change may still leave design professional open to liability from damages to foreseeable third parties

# Other Theories of Liability against Design Professionals

- **Nuisance**

- Requires evidence of physical injury to land, or a substantial interference with its enjoyment. Damage must be realized in some way. Injunctive relief (as opposed to compensatory) available for possible future harm.

- **Trespass**

- An actual interference with the right of exclusive possession (called the "entry element"), and intent or negligence. Notably, there is no damage requirement, though pollution and neighbor trespass cases are an exception to this rule (they require a showing of damages). Injunctive relief (as opposed to compensatory) available for possible future harm.

- **Contract**

- Does not require harm to have occurred; just breach of contract.
- Defenses: defects liability period, unenforceable contract, force majeure clause, no implied term of fitness for purpose, privity of contract.

- **General duties contained in Statutes/Regulations**

- E.g., regulations requires engineering plans to be “in accordance with good engineering practice.”

# Lawsuit Alleges Exxon Neglects Climate Risks at Mass. Oil Terminal

Conservation Law Foundation says company endangers communities along the Mystic River by leaving facility vulnerable to storms and rising seas.



BY DAVID HASEMYER

[Follow @DavidHasemyer](#)

SEP 30, 2016

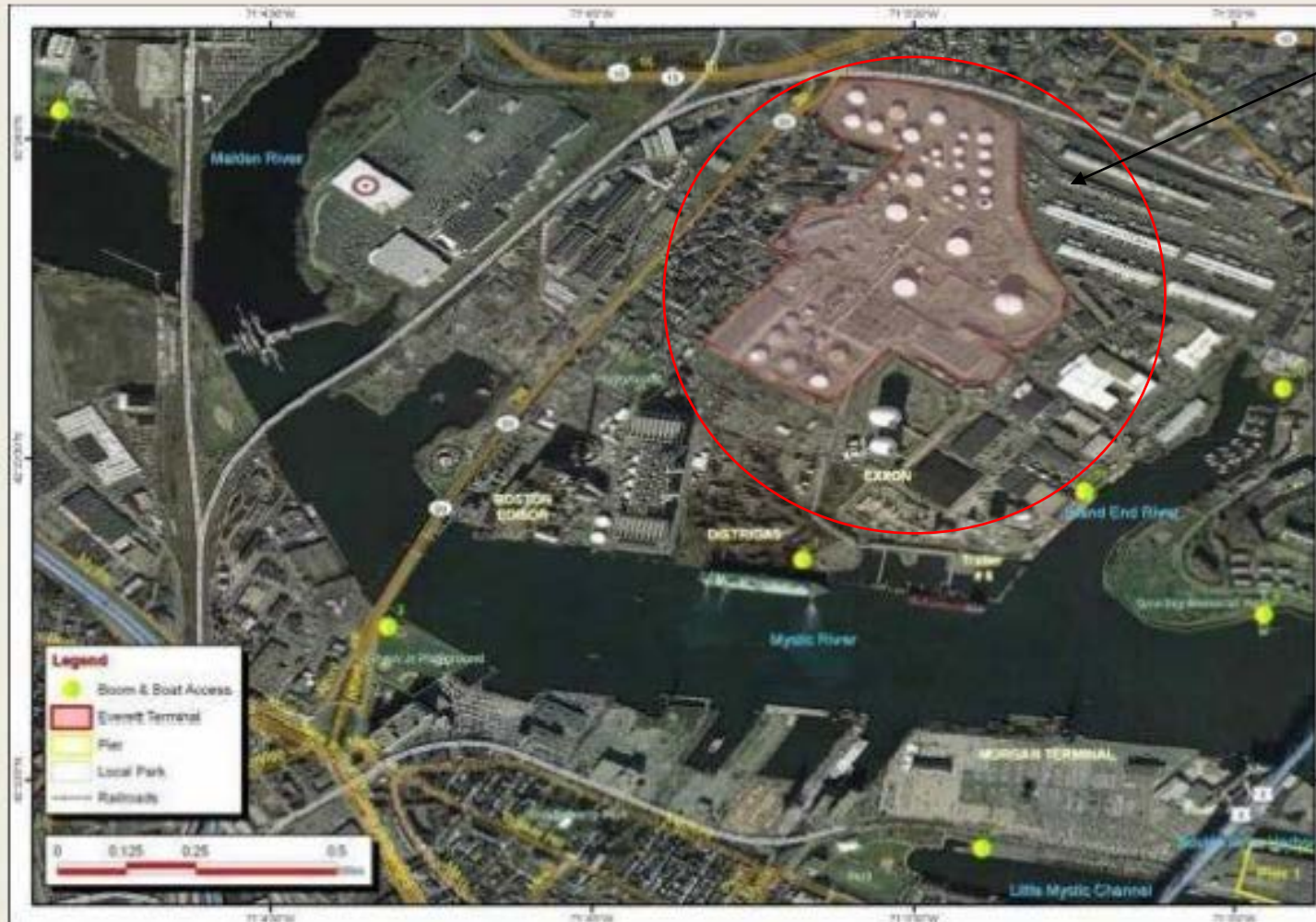


# Clean Water Act (CWA)

- Requires facilities that discharge pollutants into navigable waters to get NPDES permit
- CWA regulations require all NPDES permits to include prevention measures in line with available knowledge and industry standards to guard against illegal discharges, one of which is having a Spill Prevention Control and Countermeasure Plan
- Must be reviewed and certified by licensed professional engineer who attests that plan is “in accordance with good engineering practice.” 40 C.F.R. 112.3(d).

# EVERETT TERMINAL, EVERETT, MA

Generates, stores, handles, and disposes of **toxic and hazardous chemicals**, metals, and compounds including but not limited to: Ignitable Waste, Petroleum Hydrocarbons, Benzene, Toluene, Ethylbenzene, (m,p,o), Xylenes, tert-Butyl Alcohol, Naphthalene, Phenols, Phthalates, Polycyclic Aromatic, and more ...



ExxonMobil petroleum products distribution and bulk storage terminal.

80. As indicated in the “SLOSH” model (Sea, Lake, and Overland Surges from Hurricanes), the majority of the Everett Terminal is included within a “Category 1” Hurricane Surge Inundation Zone, which is indicated by the color light green as shown in the legend below the map on this page:



Census 2010 Municipalities Labels

Legend for Hurricane Surge Inundation Zones

- Category 1
- Category 2
- Category 3
- Category 4

Hurricane Surge Inundation Zones

2013-2014 Color Orthos (USGS)

81. The threat of a rise in sea level at the Terminal is imminent, as indicated by the following map, which shows that a four-foot or greater rise in sea level will inundate much of the Terminal:



2010 U.S. Census Municipalities Labels

Legend for Coastal Inundation Scenarios

- Current Mean Higher High Water
- 1 ft Sea Level Rise
- 2 ft Sea Level Rise
- 3 ft Sea Level Rise
- 4 ft Sea Level Rise
- 5 ft Sea Level Rise
- 6 ft Sea Level Rise

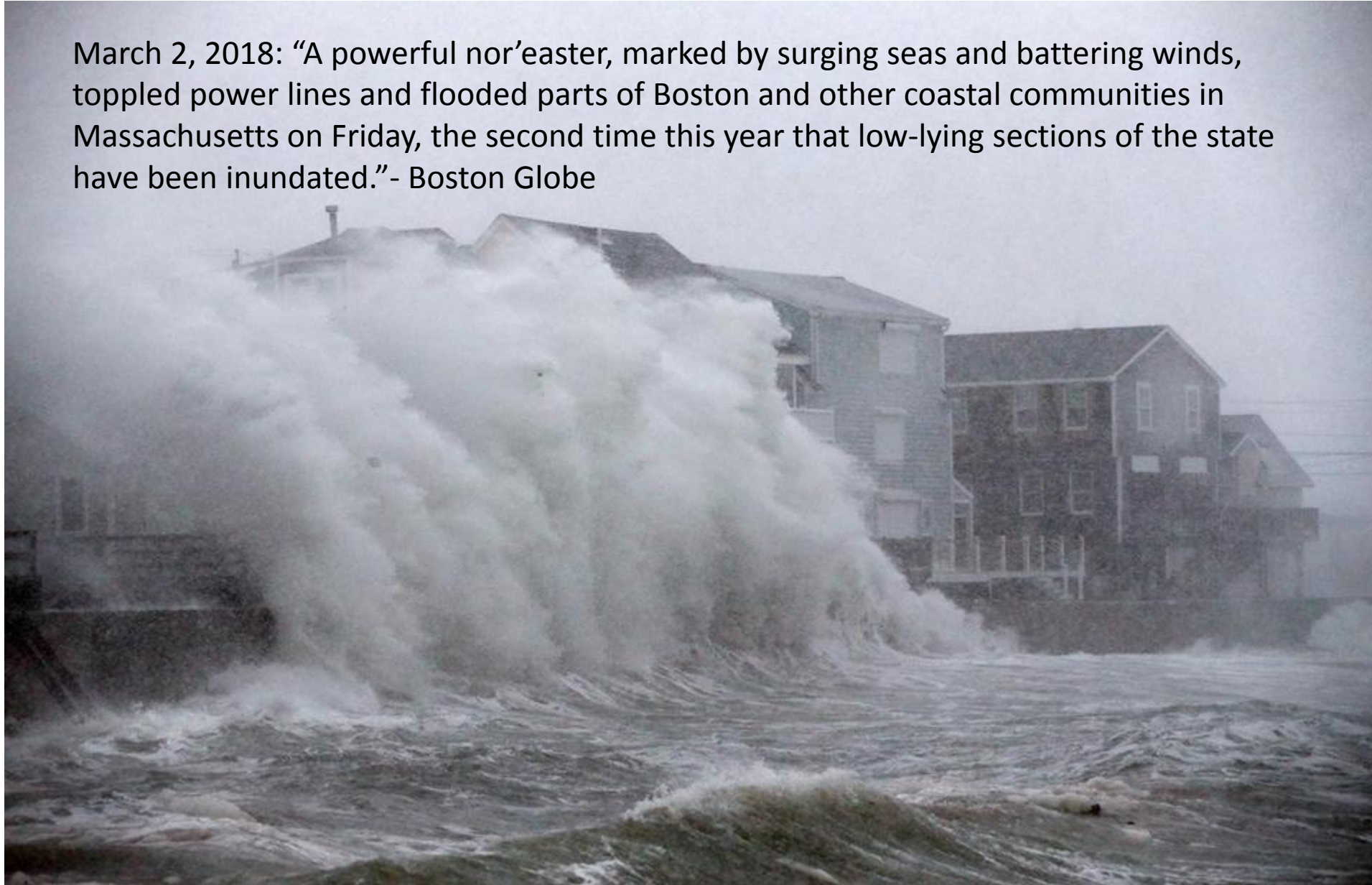
Coastal Inundation Scenarios



rise is already underway and will continue to grow more severe. *Id.* at ¶ 93. Because Exxon has not prepared its Terminal for these impacts, the risk of catastrophic effects on human health and the environment is immediate. Doc. 1 at ¶¶ 70–77. Exxon admitted as much in a recent publicly available letter to the EPA regarding a FOIA request submitted by CLF. Ex. F at 4 (“**Given the Terminal’s location, a security incident leading to a release at the Terminal would likely have catastrophic effects on both human life and the environment.**”) (emphasis added).

CLF members’ fears of discharges and endangerment from climate change impacts at the Terminal are much more than “sheer speculation.” Doc. 17 at 13. “[P]ast wrongs are evidence

March 2, 2018: “A powerful nor’easter, marked by surging seas and battering winds, toppled power lines and flooded parts of Boston and other coastal communities in Massachusetts on Friday, the second time this year that low-lying sections of the state have been inundated.”- Boston Globe





## Climate Adaptation & Liability Workshop I: Design Professionals

### Workshop Agenda – Friday, May 19

Purpose of the workshop: To explore the legal implications of “failing to adapt” to known climate risks and potential obstacles to implementing proactive climate adaptation strategies. We do not expect to come up with solutions over these four hours. Rather, the purpose of these discussions is to determine what the current hurdles to adaptation are and articulate what roles law and policy can play in incentivizing or disincentivizing adoption of climate resilient strategies.

<b>9:00 – 9:10</b>	Welcome/logistics of the day
<b>9:10 – 9:20</b>	Background and Goals of Workshop
<b>9:20 – 9:35</b>	Climate Ready Boston presentation
<b>9:35 – 10:15</b>	<i>Liability for Failure to Adapt: Climate Change and the Evolving Liability of Design/Build Professionals, Developers, Realtors, and Insurance Agents</i>
<b>10:15 – 10:30</b>	Break
<b>10:30 – 11:30</b>	Small group discussion 1: Barriers to Climate Adaptation in Practice

# Survey Responses from CLF Workshop with Design Professionals

- 45% of respondents\* said they had felt pressured at one time or another to ignore climate-related issues with a project for fear that there would be negative consequences to them as a professional
- 36% of respondents said they routinely employ a climate expert to guide decision-making — More engineers do than architects
- 70% of respondents said they believe both regulation and design are needed to move the needle on climate adaptation — 23% of respondents said regulation alone will move the needle — 6% of respondents said design alone will move the needle

\*60 total survey respondents

# CLF's Ongoing Work in this Area

- **Facilitate** a dialogue between design community and regulators
- **Convene** a stakeholder group to explore standards and codes for climate-resilient construction
- **Explore** current disclosure requirements and consider changes to the existing system
- **Conduct** research on incentives and funding mechanisms for climate adaptation
- **Develop** a climate adaptation playbook of policy and legal tools

# Conclusions

- The **standard of care** expected of design professionals and others is **rising** due to climate change and improvements in climate science
- Threat of liability is real, and **there is already litigation in this space**
  - CLF's *Exxon* case: general duties of CWA in that case, but same theory could be presented in tort context, so best practices have to evolve to deal with this
- **Positive opportunity** for the design community and legal community to work together.
  - **Threat of liability can turn 'the possible' into 'the standard'**
  - More and more owners are seeing an upside to **branding for resilience**

# Thank you. Questions?

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