IOWA™
CIVIL & ENVIRONMENTAL ENGINEERING

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

May 14, 2025

Ethics in Professional Practice

IOWA DEPARTMENT OF NATURAL RESOURCES

Environmental Engineer, 2 years

CITY OF IOWA CITY
UNESCO CITY OF LITERATURE

Design Engineer, Special Projects Manager, City Engineer, Public Works Director, 31 years

IOWA™
CIVIL & ENVIRONMENTAL ENGINEERING

Professor of Practice, 10th year


TRI-STATE TRAVEL
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axiom
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Ethics continuing education booster shot.

CHAPTER 8
PROFESSIONAL CONDUCT OF LICENSEES

[Prior to 11/14/01, see 193C—Chapter 4]

193C—8.1(542B) General statement. In order to establish and maintain a high standard of integrity, skills and practice in the professions of engineering and land surveying, and to safeguard the life, health, property and welfare of the public, the following code of professional conduct shall be binding upon every person holding a certificate of licensure as a professional engineer or professional land surveyor in this state. The code of professional conduct is an exercise of the police power vested in the board by the Acts of the legislature.

[**ARC 0362C**, IAB 10/3/12, effective 11/7/12]

193C—8.2(542B) Code of professional conduct. All persons licensed under Iowa Code chapter 542B are charged with having knowledge of the existence of this code of professional conduct and shall be expected to be familiar with its provisions, to understand them, and to abide by them. Such knowledge includes the understanding that the practices of engineering and land surveying are a privilege, as opposed to a right, and the licensee shall be forthright and candid in statements or written response to the board or its representatives on matters pertaining to professional conduct.

8.2(5) *Ethics.* Licensees shall conduct their business and professional practices of engineering and land surveying in an ethical manner. In addition to the provisions of this chapter, the board will consider, although not necessarily be bound by, the ethical standards that address public protection issues adopted by a recognized state or national engineering or land surveying organization such as the National Society of Professional Engineers and the National Society of Professional Surveyors.

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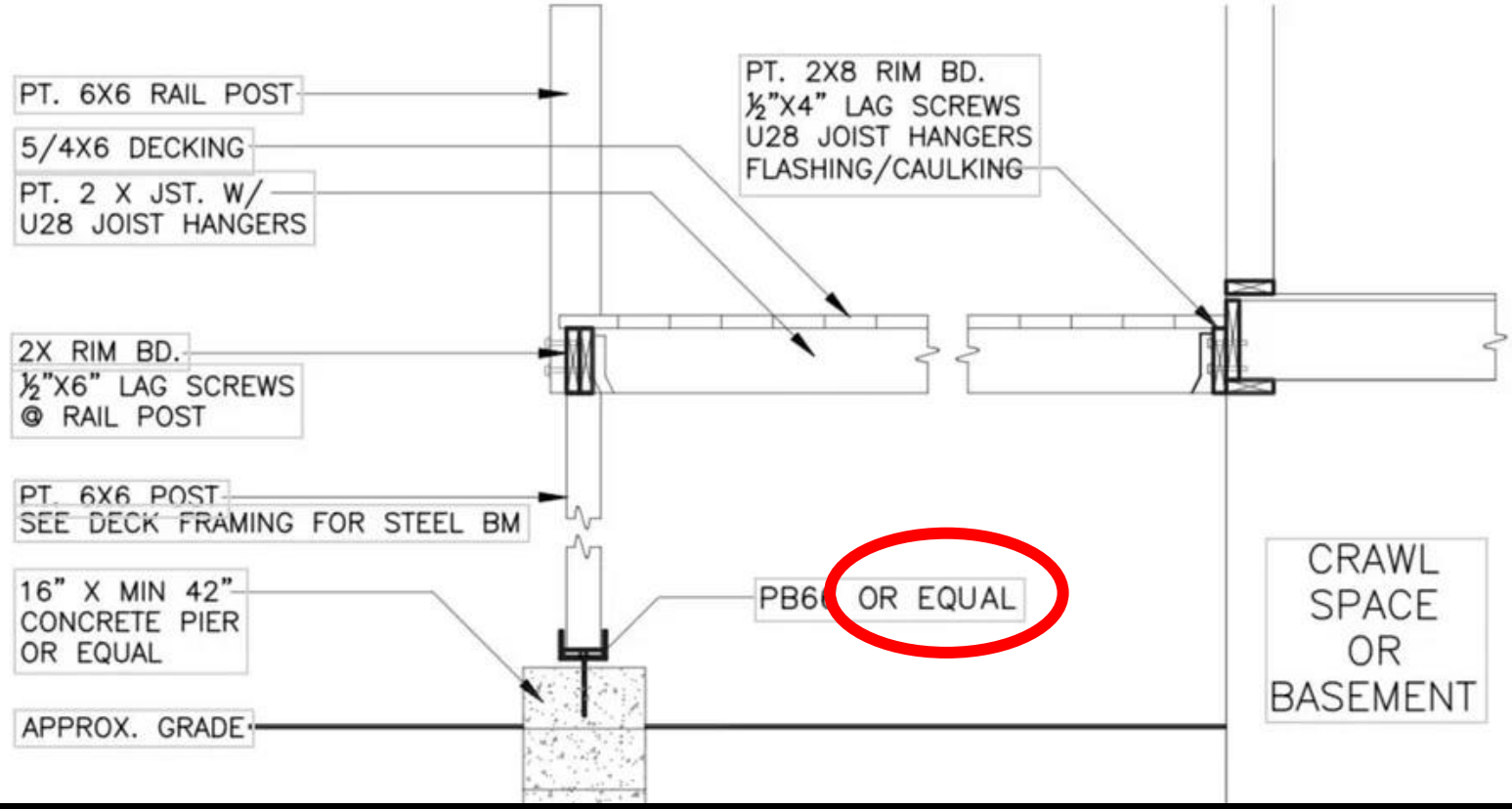

IOWA

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Code of Ethics for Engineers

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

I. Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

II. Rules of Practice

1. Engineers shall hold paramount the safety, health, and welfare of the public.

a. If engineers' judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.
b. Engineers shall approve only those engineering documents that are in conformity with applicable standards.
c. Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except as authorized or required by law or this Code.
d. Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise.
e. Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
f. Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.

2. Engineers shall perform services only in the areas of their competence.

a. Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.
b. Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.
c. Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.

3. Engineers shall issue public statements only in an objective and truthful manner.

a. Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current.
b. Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
c. Engineers shall issue no statements, criticisms, or arguments on technical matters that are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineers may have in the matters.

4. Engineers shall act for each employer or client as faithful agents or trustees.

a. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
b. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.
c. Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.
d. Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.
e. Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.

5. Engineers shall avoid deceptive acts.

a. Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint venturers, or past accomplishments.
b. Engineers shall not offer, give, solicit, or receive, either directly or indirectly, any contribution to influence the award of a contract by public authority, or which may be reasonably construed by the public as having the effect or intent of influencing the awarding of a contract. They shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage, or brokerage fee in order to secure work, except to a bona fide employee or bona fide established commercial or marketing agencies retained by them.

III. Professional Obligations

1. Engineers shall be guided in all their relations by the highest standards of honesty and integrity.

a. Engineers shall acknowledge their errors and shall not distort or alter the facts.
b. Engineers shall advise their clients or employers when they believe a project will not be successful.
c. Engineers shall not accept outside employment to the detriment of their regular work or interest. Before accepting any outside engineering employment, they will notify their employers.
d. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.
f. Engineers shall treat all persons with dignity, respect, fairness, and without discrimination.

2. Engineers shall at all times strive to serve the public interest.

a. Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.
b. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.
c. Engineers are encouraged to extend public knowledge and appreciation of engineering and its achievements.
d. Engineers are encouraged to adhere to the principles of sustainable development[1] in order to protect the environment for future generations.
e. Engineers shall continue their professional development throughout their careers and should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminar.

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

3. Engineers shall avoid all conduct or practice that deceives the public.

a. Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.
b. Consistent with the foregoing, engineers may advertise for recruitment of personnel.
c. Consistent with the foregoing, engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.

4. Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve.

a. Engineers shall not, without the consent of all interested parties, promote or arrange for new employment or practice in connection with a specific project for which the engineer has gained particular and specialized knowledge.
b. Engineers shall not, without the consent of all interested parties, participate in or represent an adversary interest in connection with a specific project or proceeding in which the engineer has gained particular specialized knowledge on behalf of a former client or employer.

5. Engineers shall not be influenced in their professional duties by conflicting interests.

a. Engineers shall not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product.
b. Engineers shall not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with clients or employers of the engineer in connection with work for which the engineer is responsible.

6. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.

a. Engineers shall not request, propose, or accept a commission on a contingent basis under circumstances in which their judgment may be compromised.
b. Engineers in salaried positions shall accept part-time engineering work only to the extent consistent with policies of the employer and in accordance with ethical considerations.
c. Engineers shall not, without consent, use equipment, supplies, laboratory, or office facilities of an employer to carry on outside private practice.

7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.

a. Engineers in private practice shall not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.
b. Engineers in governmental, industrial, or educational employ are entitled to review and evaluate the work of other engineers when so required by their employment duties.
c. Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.

8. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the engineer's interests cannot otherwise be protected.

a. Engineers shall conform with state registration laws in the practice of engineering.
b. Engineers shall not use association with a nonengineer, a corporation, or partnership as a "cloak" for unethical acts.

9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.

a. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.
b. Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the engineer for others without express permission.
c. Engineers, before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights or patents, should enter into a positive agreement regarding ownership.
d. Engineers' designs, data, records, and notes referring exclusively to an employer's work are the employer's property. The employer should indemnify the engineer for use of the information for any purpose other than the original purpose.

Footnote 1 "Sustainable development" is the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste management while conserving and protecting environmental quality and the natural resource base essential for future development.

CODE of ETHICS

THE AMERICAN SOCIETY OF CIVIL ENGINEERS

As amended on October 26, 2020

PREAMBLE

Members of The American Society of Civil Engineers conduct themselves with integrity and professionalism, and above all else protect and advance the health, safety, and welfare of the public through the practice of Civil Engineering.

Engineers govern their professional careers on the following fundamental principles:

- create safe, resilient, and sustainable infrastructure;
- treat all persons with respect, dignity, and fairness in a manner that fosters equitable participation without regard to personal identity;
- consider the current and anticipated needs of society; and
- utilize their knowledge and skills to enhance the quality of life for humanity.

All members of The American Society of Civil Engineers, regardless of their membership grade or job description, commit to all of the following ethical responsibilities. In the case of a conflict between ethical responsibilities, the five stakeholders are listed in the order of priority. There is no priority of responsibilities within a given stakeholder group with the exception that 1a. takes precedence over all other responsibilities. [1]

CODE OF ETHICS

1. SOCIETY

Engineers:

a. first and foremost, protect the health, safety, and welfare of the public;

b. enhance the quality of life for humanity;

c. express professional opinions truthfully and only when founded on adequate knowledge and honest conviction;

d. have zero tolerance for bribery, fraud, and corruption in all forms, and report violations to the proper authorities;

e. endeavor to be of service in civic affairs;

f. treat all persons with respect, dignity, and fairness, and reject all forms of discrimination and harassment;

g. acknowledge the diverse historical, social, and cultural needs of the community, and incorporate these considerations in their work;

h. consider the capabilities, limitations, and implications of current and emerging technologies when part of their work; and

i. report misconduct to the appropriate authorities where necessary to protect the health, safety, and welfare of the public.

2. NATURAL AND BUILT ENVIRONMENT

Engineers:

a. adhere to the principles of sustainable development;

b. consider and balance societal, environmental, and economic impacts, along with opportunities for improvement, in their work;

c. mitigate adverse societal, environmental, and economic effects; and

d. use resources wisely while minimizing resource depletion.

3. PROFESSION

Engineers:

a. uphold the honor, integrity, and dignity of the profession;

b. practice engineering in compliance with all legal requirements in the jurisdiction of practice;

c. represent their professional qualifications and experience truthfully;

d. reject practices of unfair competition;

e. promote mentorship and knowledge-sharing equitably with current and future engineers;

f. educate the public on the role of civil engineering in society; and

g. continue professional development to enhance their technical and non-technical competencies.

4. CLIENTS AND EMPLOYERS

Engineers:

a. act as faithful agents of their clients and employers with integrity and professionalism;

b. make clear to clients and employers any real, potential, or perceived conflicts of interest;

c. communicate in a timely manner to clients and employers any risks and limitations related to their work;

d. present clearly and promptly the consequences to clients and employers if their engineering judgment is overruled where health, safety, and welfare of the public may be endangered;

e. keep clients' and employers' identified proprietary information confidential;

f. perform services only in areas of their competence; and

g. approve, sign, or seal only work products that have been prepared or reviewed by them or under their responsible charge.

5. PEERS

Engineers:

a. only take credit for professional work they have personally completed;

b. provide attribution for the work of others;

c. foster health and safety in the workplace;

d. promote and exhibit inclusive, equitable, and ethical behavior in all engagements with colleagues;

e. act with honesty and fairness on collaborative work efforts;

f. encourage and enable the education and development of other engineers and prospective members of the profession;

g. supervise equitably and respectfully;

h. comment only in a professional manner on the work, professional reputation, and personal character of other engineers; and

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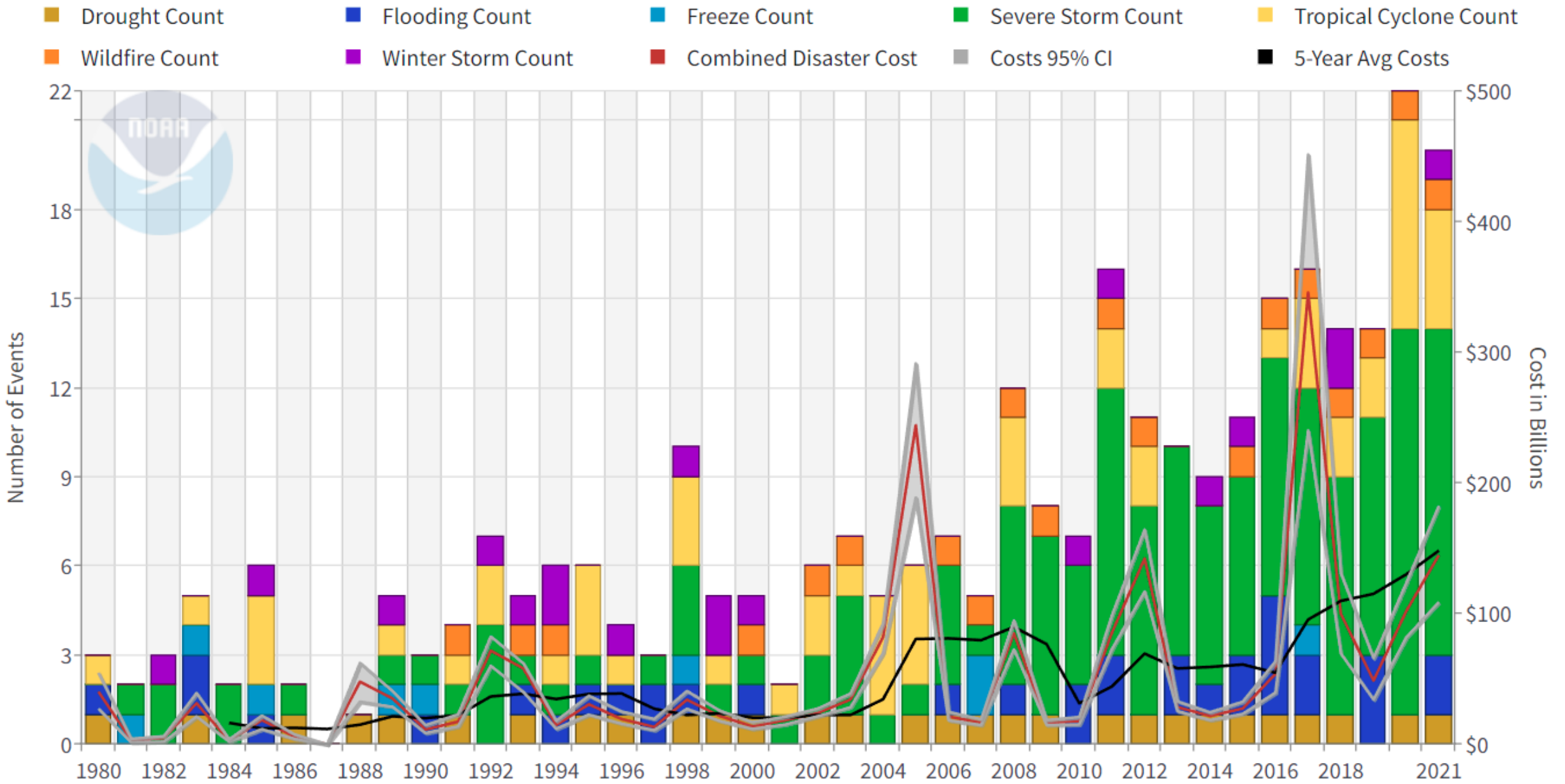
United States Billion-Dollar Disaster Events 1980-2021 (CPI-Adjusted)



Updated: January 10, 2022

Powered by **ZingChart**

THE TERM "RESILIENCE" IS EVERYWHERE – BUT WHAT DOES IT REALLY MEAN?

As resilience moves from technical term to buzzword, there's value to be had in clarifying exactly what it is we're talking about

Photo © iStockphoto.com/simonbradfield

Iowa's Kirk Ferentz thankful for resilient win vs. Michigan State

The head coach's opening remarks after a 26-16 victory in a hard-fought game at Kinnick Stadium.

Climate Change

A Tale of Two Buzzwords: Trying to Sustain Our Resilience

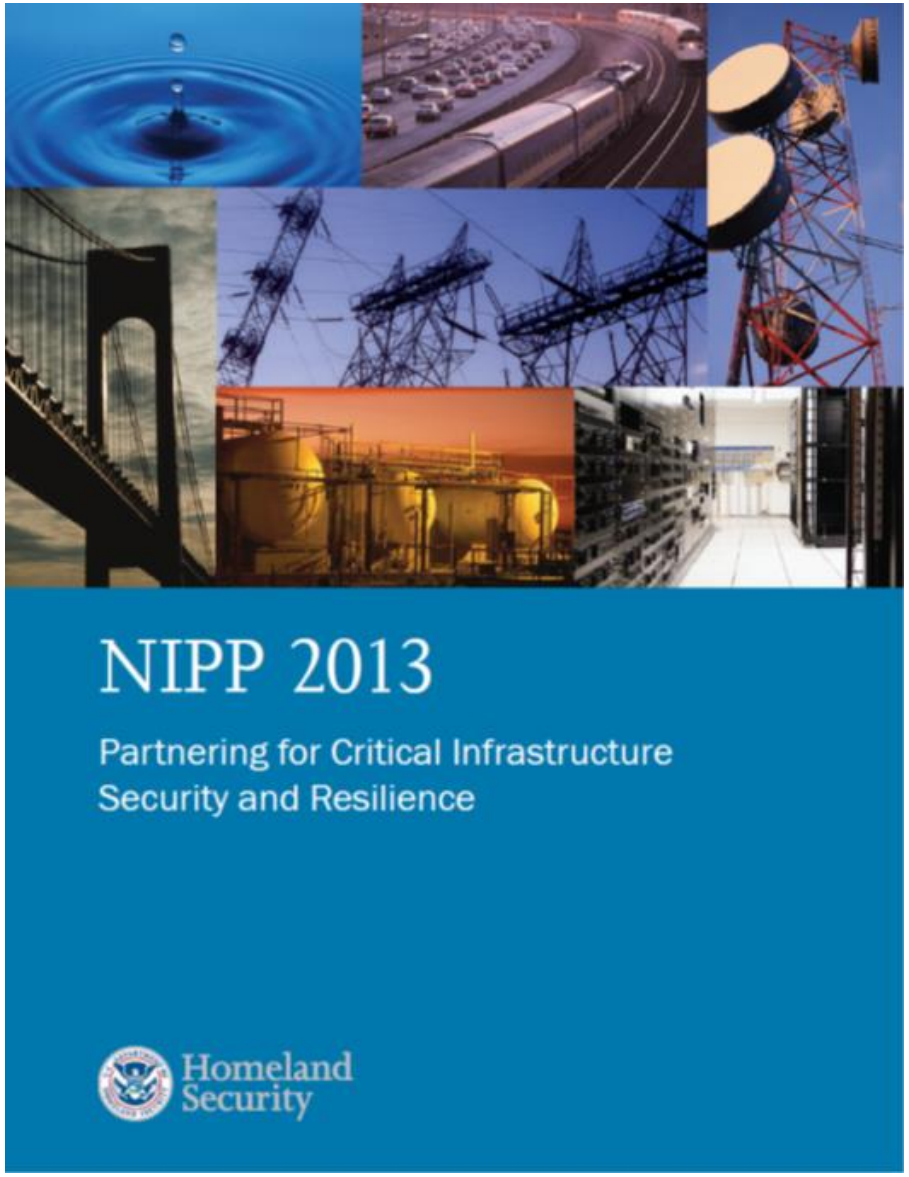
by Brendan Buhler

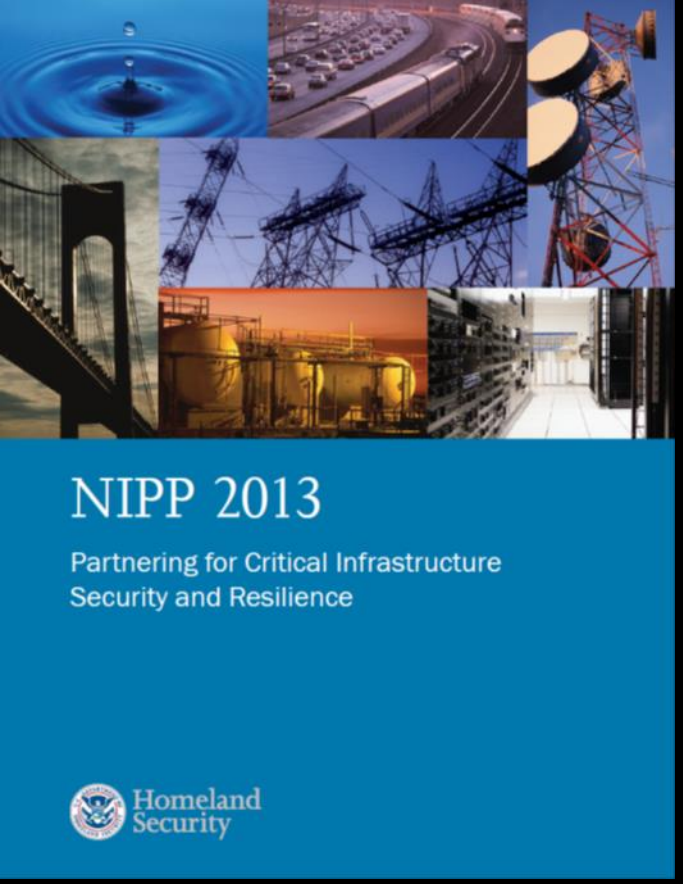
September 25, 2017

It was the most sustainable of times, it was the most resilient of times. At least, those words were on everyone's lips, so we can be sure it was an age of neither, since what do we speak of but what we desire? And what do we desire but what we lack?

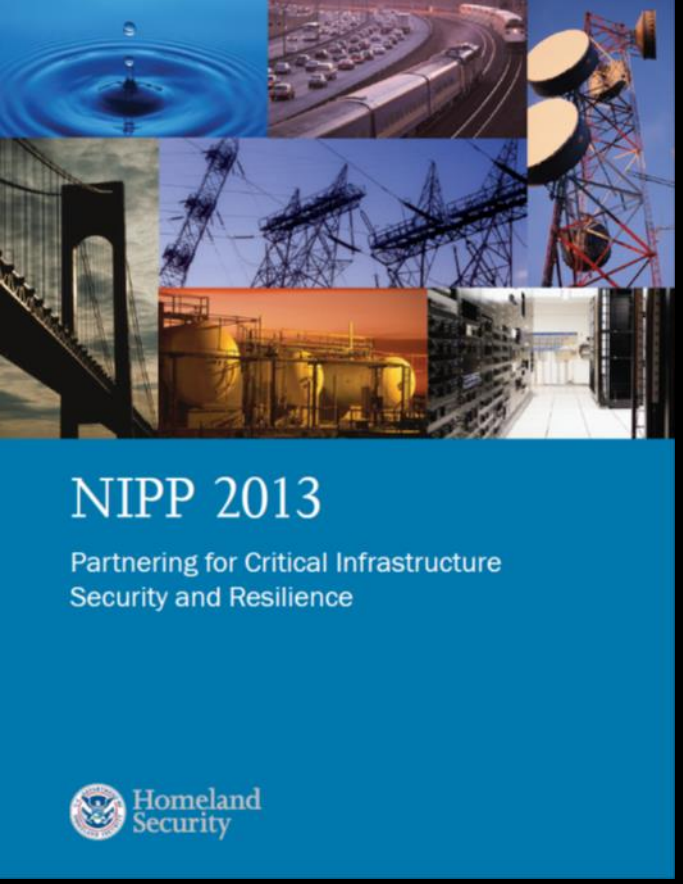
What does **resilience** mean in the context of engineering design?

What is Resilience?





Resilience: the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. It includes the ability to withstand and recover from deliberate attacks, accidents or naturally occurring threats or incidents.



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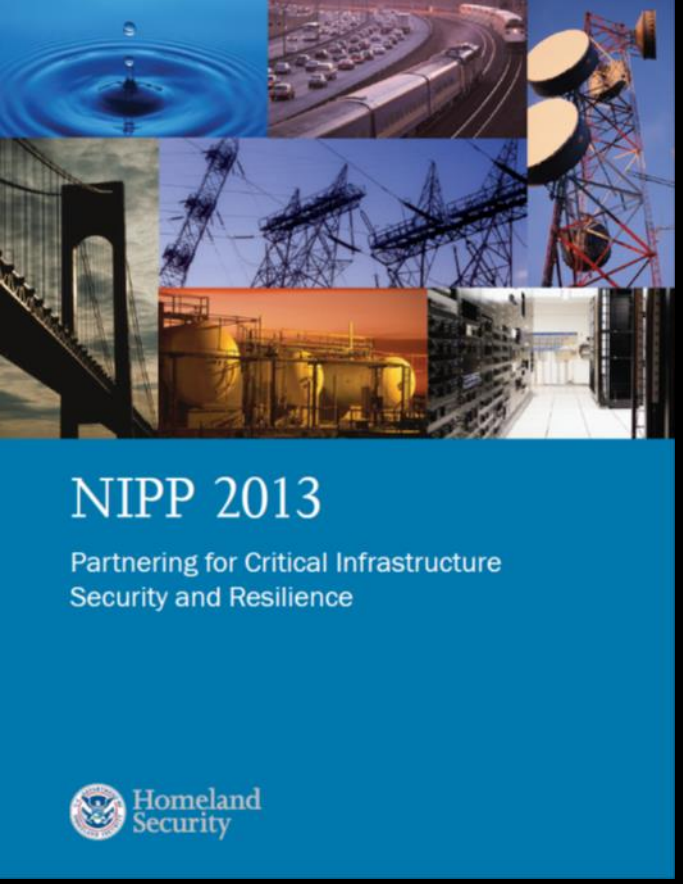

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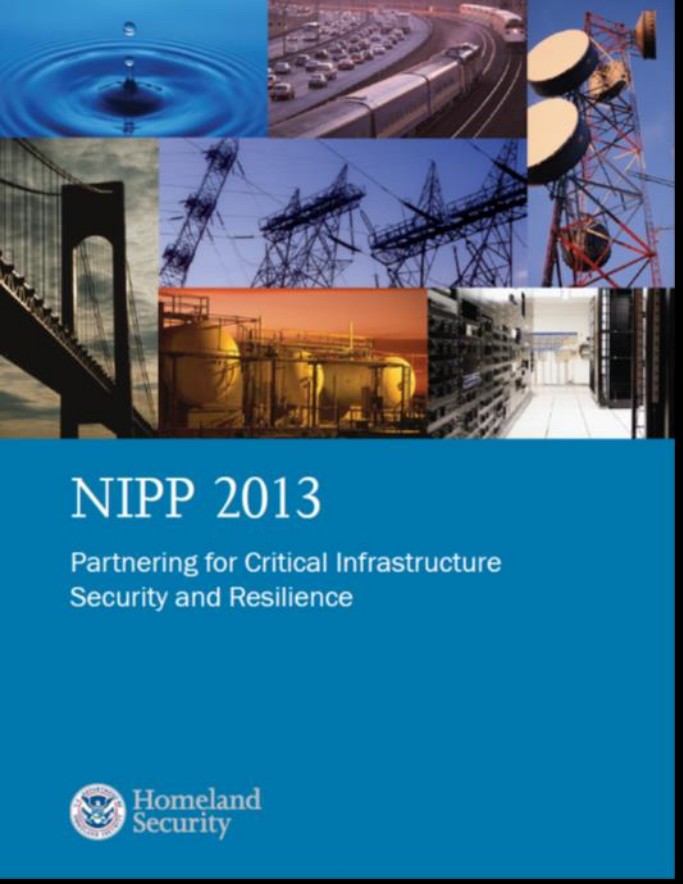

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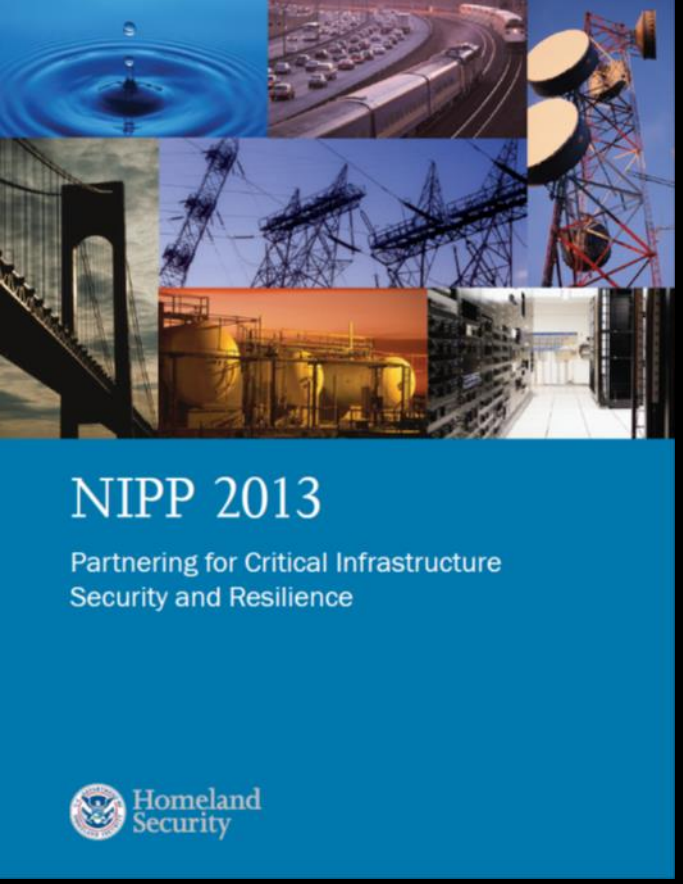


Resilience: the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. It includes the ability to withstand and recover from deliberate attacks, accidents or naturally occurring threats or incidents.

Our designs need to anticipate:

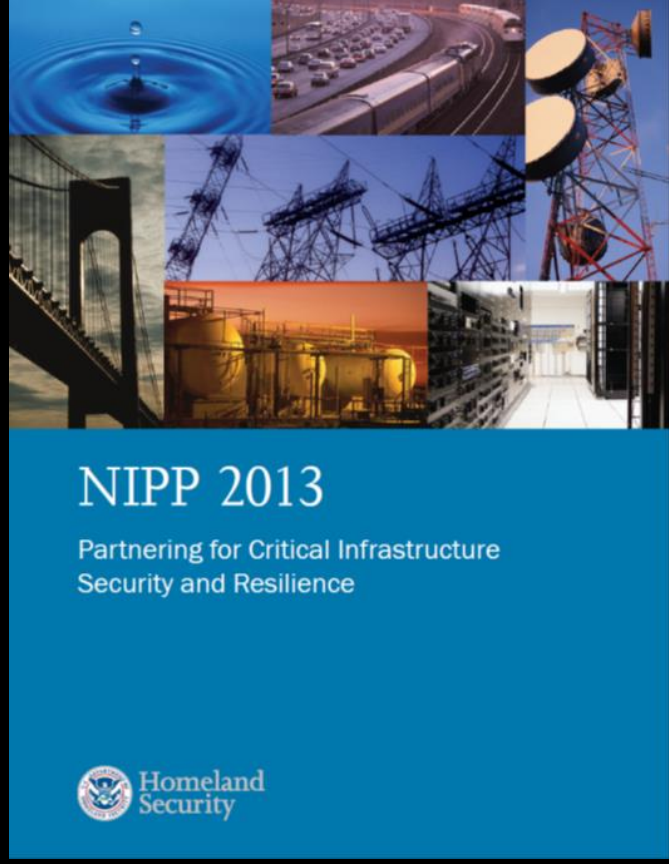
- Changing conditions
- Disruptions

Caused by:

- Deliberate attacks
- Accidents
- Naturally occurring threats or incidents.

Objective:

- Adapt
- Withstand or Recover Rapidly



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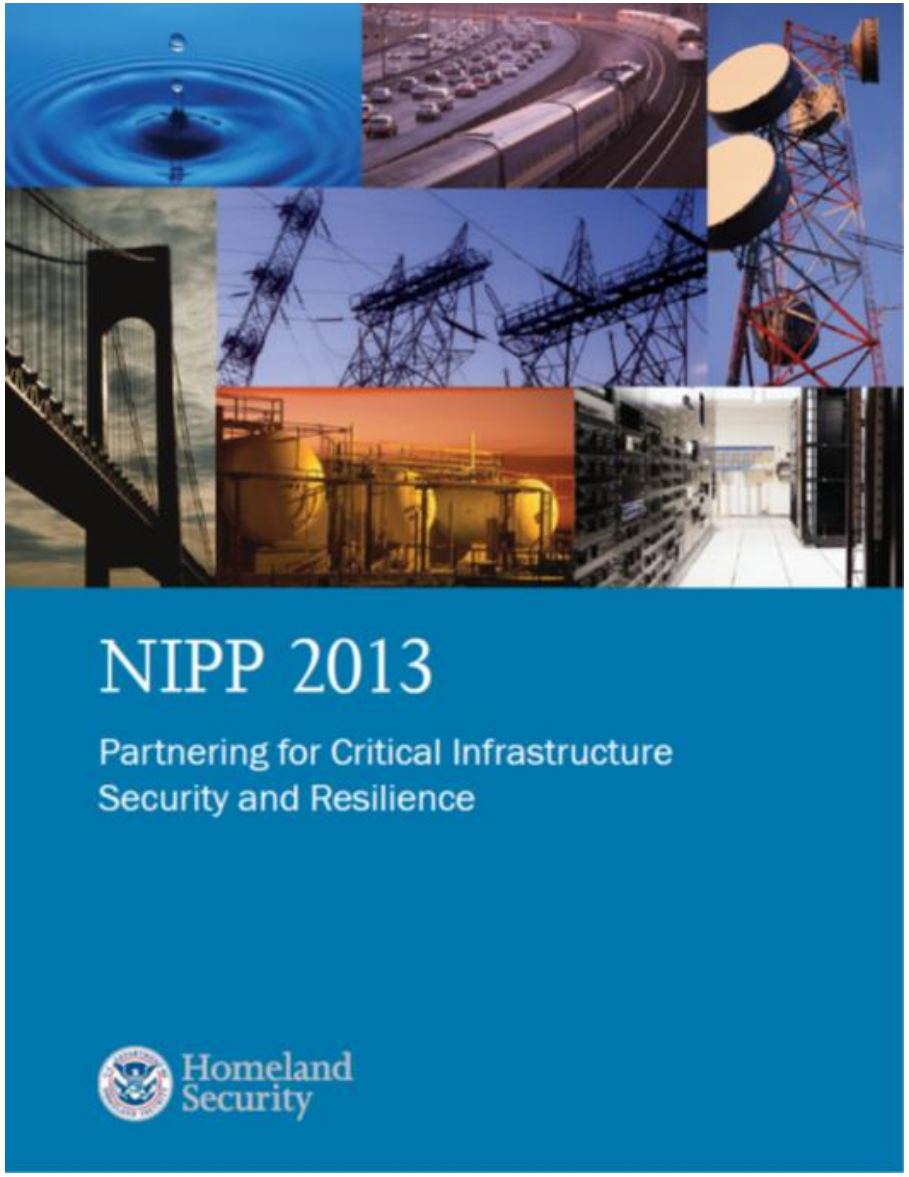

RESILIENT CITIES NETWORK

English

About Us | Our Network | What We Do | Resources | Get Involved

Our Story

The Resilient Cities Network legacy is built on the 100 Resilient Cities (100RC) initiative, pioneered by The Rockefeller Foundation in 2013, as part of its Global Centennial Initiative.

https://resilientcitiesnetwork.org/city-resilience-framework/

What is Urban Resilience?

Urban Resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.

CHRONIC STRESSES

Stresses weaken the fabric of a city on a daily or cyclical basis.

Examples include:

- high unemployment
- overtaxed or inefficient public transportation system
- endemic violence
- chronic food and water shortages.

ACUTE SHOCKS

Acute shocks are sudden, sharp events that threaten a city.

Examples include:

- earthquakes
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Stresses weaken the fabric of a city on a daily or cyclical basis.

Examples include:

- high unemployment
- overtaxed or inefficient public transportation system
- endemic violence
- chronic food and water shortages.

ACUTE SHOCKS

Acute shocks are sudden, sharp events that threaten a city.

Examples include:

- earthquakes
- floods
- disease outbreaks
- terrorist attacks

Our designs need to anticipate:

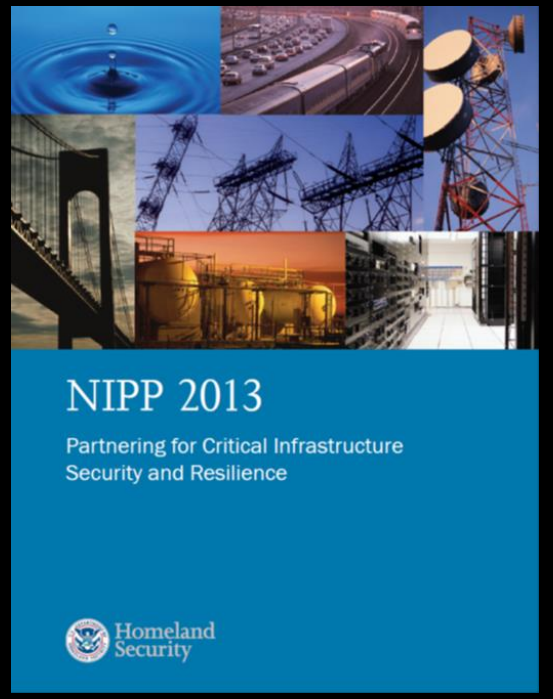
- Changing conditions
- Disruptions

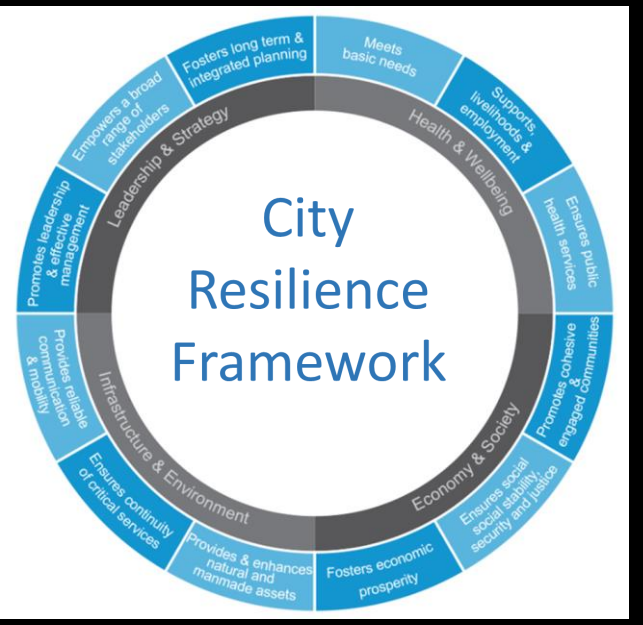
Caused by:

- Deliberate attacks
- Accidents
- Naturally occurring threats or incidents.
- Chronic Stresses

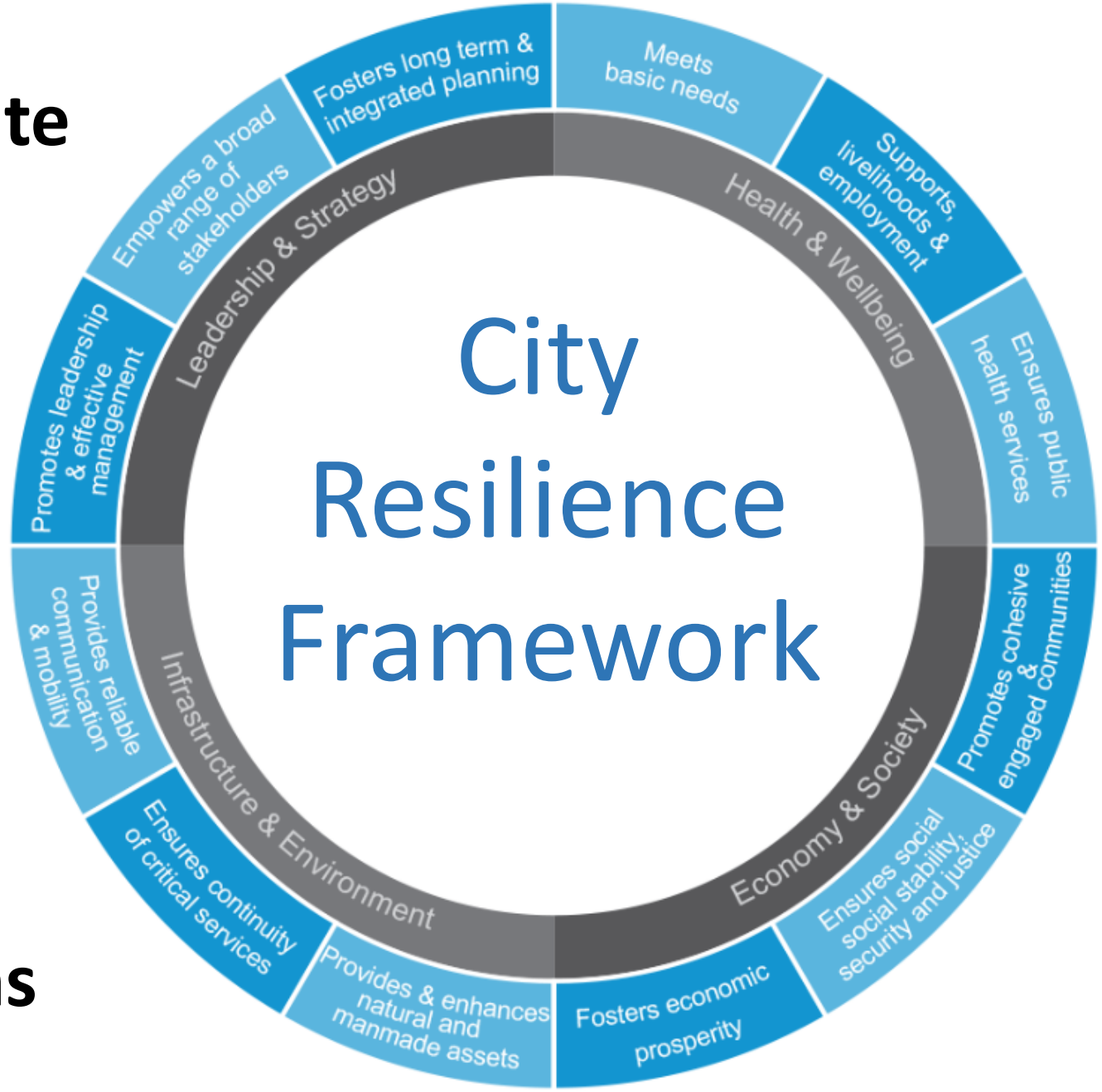
Objective:

- Withstand
- Recover Rapidly
- Adapt
- Grow





The drivers that contribute to the resiliency of cities



12 Drivers
4 Dimensions

Developed by Arup with support from the Rockefeller Foundation

Our designs need to anticipate:

- Changing conditions
- Disruptions

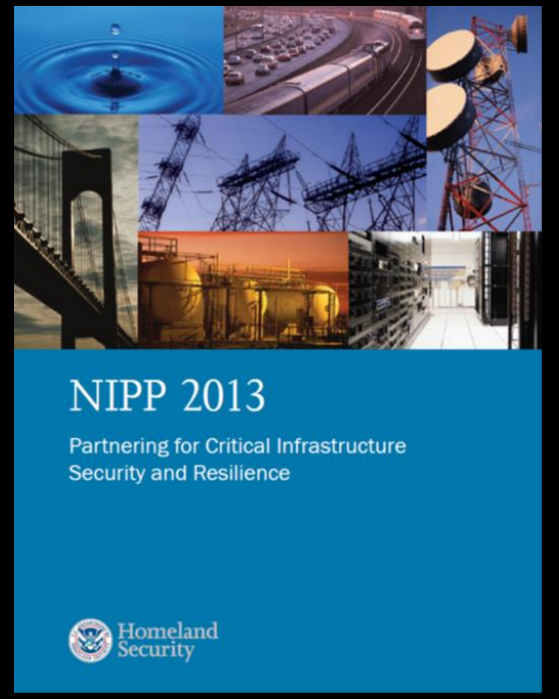
Caused by:

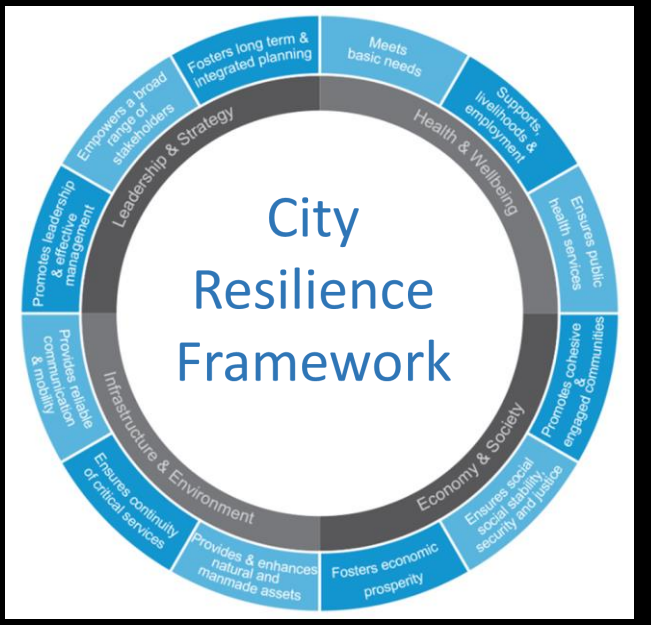
- Deliberate attacks
- Accidents
- Naturally occurring threats or incidents.
- Chronic Stresses

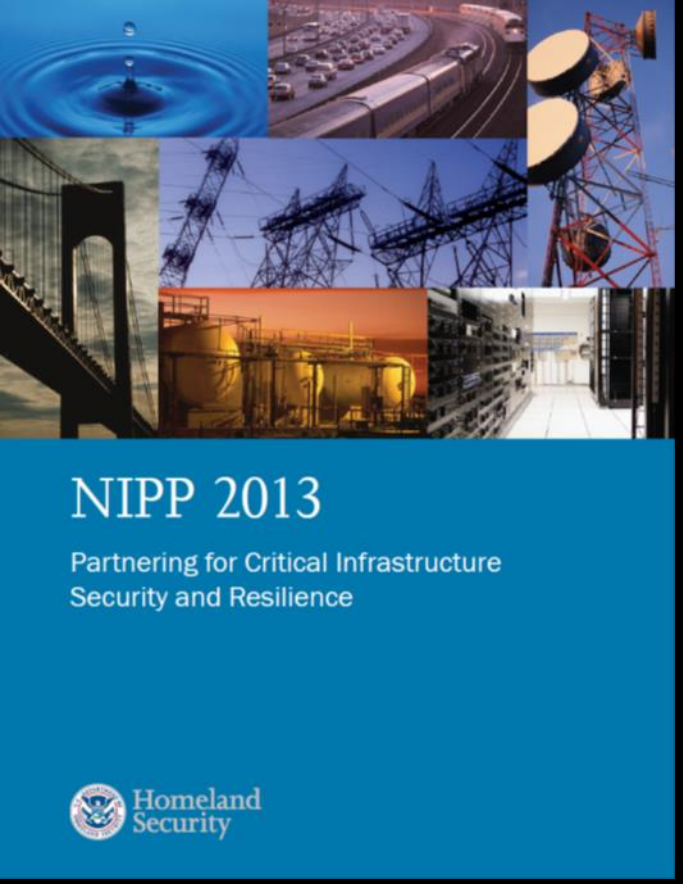
Objective:

- Withstand
- Recover Rapidly
- Adapt
- Grow

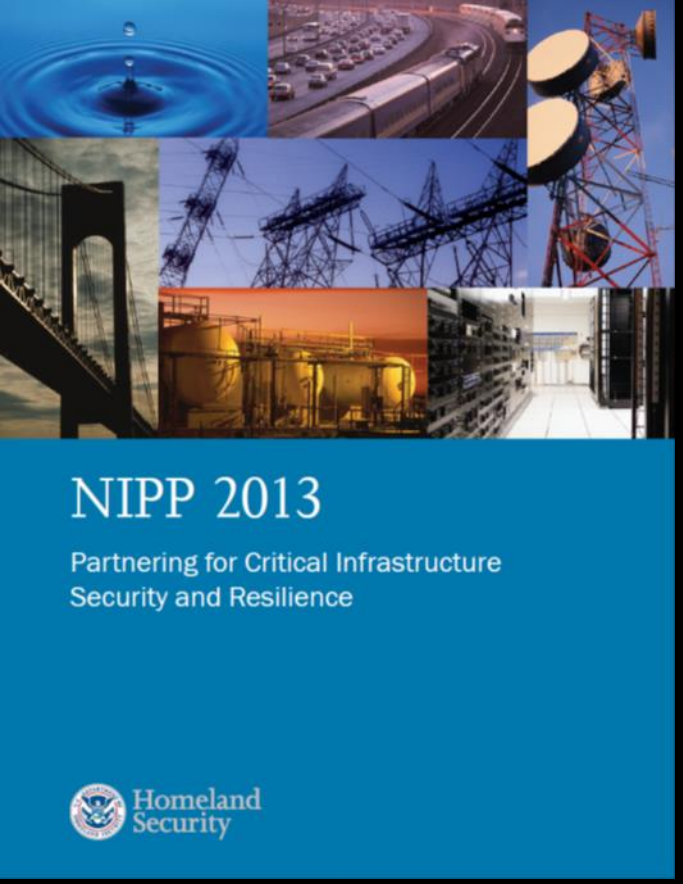
Do we apply this to every aspect of every design?







Critical Infrastructure: Systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.



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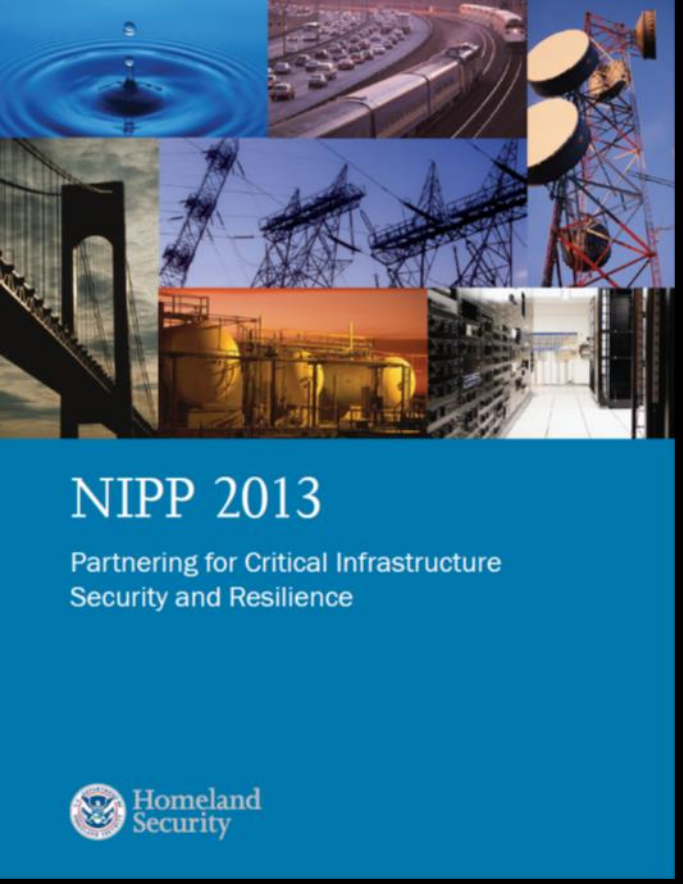
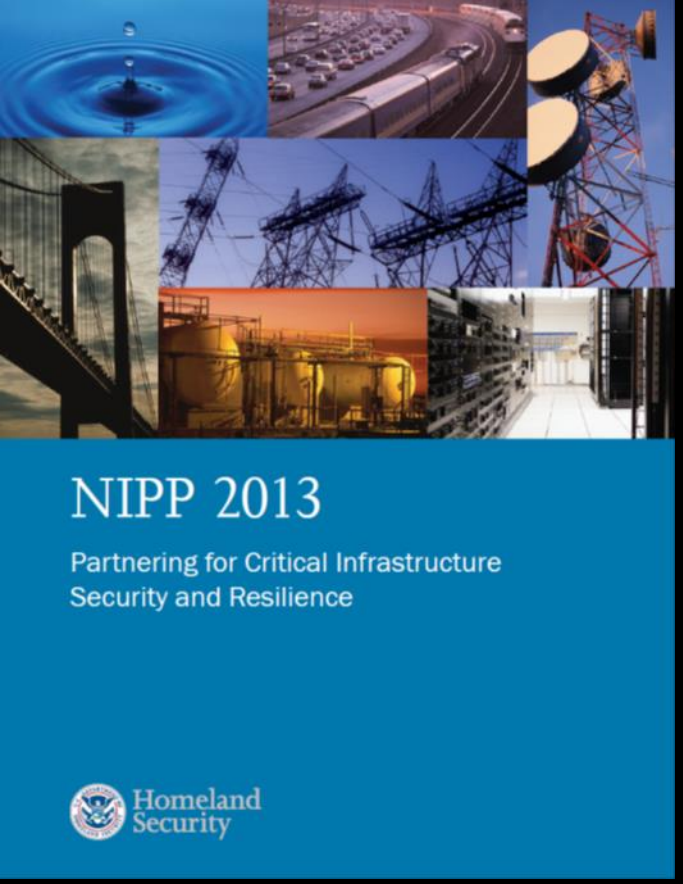


16 Critical Infrastructure Sectors

Chemical
Commercial Facilities
Communications
Critical Manufacturing
Dams
Defense Industry Bases
Emergency Services
Energy
Financial Services
Food and Agriculture
Government Facilities
Healthcare and Public Health
Information Technology
Nuclear Reactors, Materials and Waste
Transportation Systems
Water and Wastewater Systems



16 Critical Infrastructure Sectors

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- Commercial Facilities
- Communications
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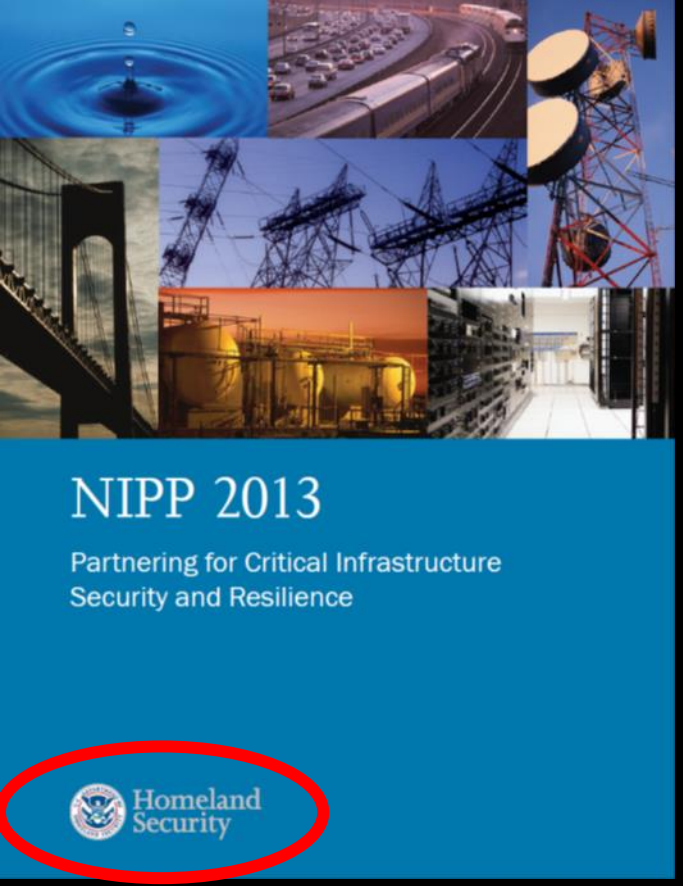
- Dams
- Defense Industry Bases
- Emergency Services
- Energy
- Financial Services
- Food and Agriculture
- Government Facilities
- Healthcare and Public Health
- Information Technology
- Nuclear Reactors, Materials and Waste
- Transportation Systems
- Water and Wastewater Systems

Much is owned and operated by the private sector



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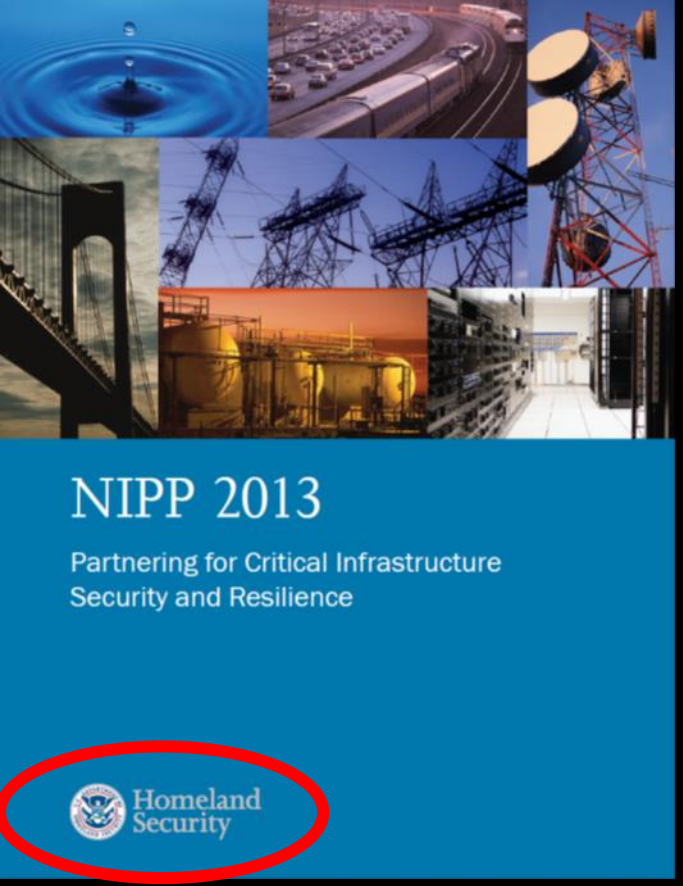

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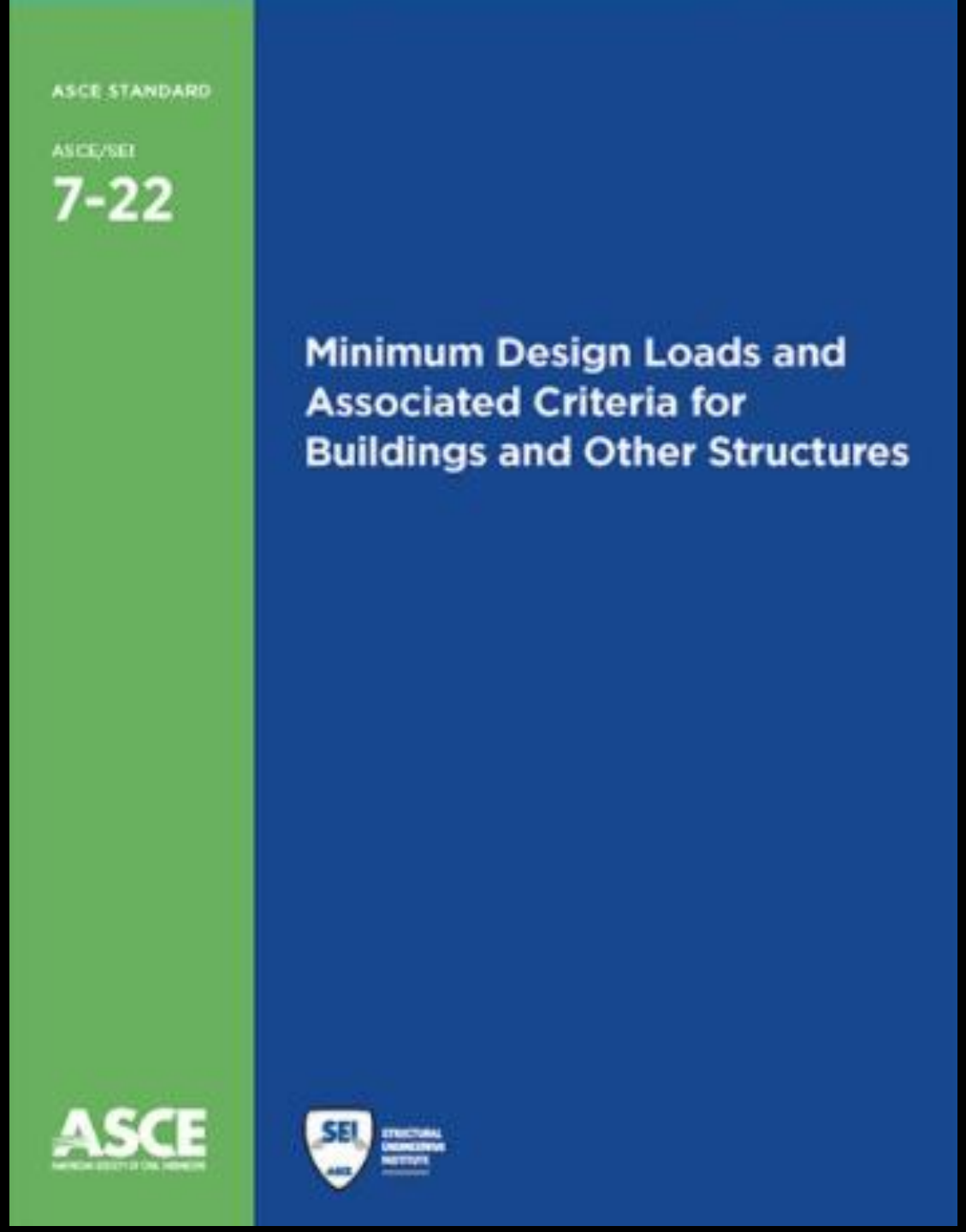
Critical Infrastructure: Systems and assets, whether physical or virtual, so **vital to my client** that the incapacity or destruction of such systems and assets would have a debilitating impact on security, **my client's** economic security, **my client's** health or safety, or any combination of those matters.

If you identify elements of your project that are **“critically important” to your client,** have a conversation with them about resilient design and its **costs and benefits.**



RISK CATEGORY	NATURE OF OCCUPANCY
I	Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to: • Agricultural facilities. • Certain temporary facilities. • Minor storage facilities.
II	Buildings and other structures except those listed in Risk Categories I, III and IV.
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: • Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. • Buildings and other structures containing Group E occupancies with an occupant load greater than 250. • Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. • Group I-2 occupancies with an occupant load of 50 or more resident care recipients but not having surgery or emergency treatment facilities. • Group I-3 occupancies. • Any other occupancy with an occupant load greater than 5,000.[a] • Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. • Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the *International Fire Code*, and Are sufficient to pose a threat to the public if released.[b]
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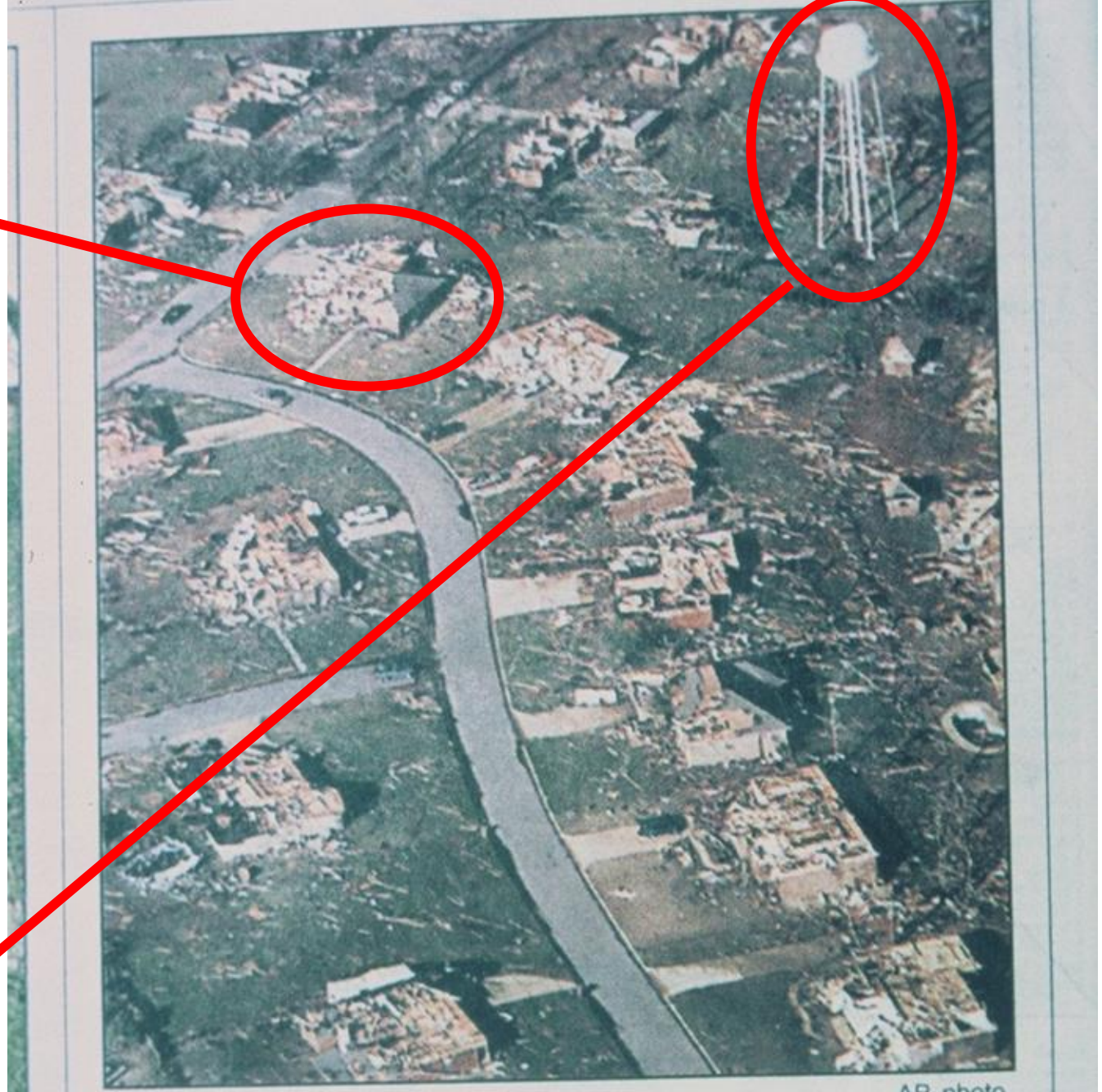

AP photo

The wake of a tornado

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LORIDA
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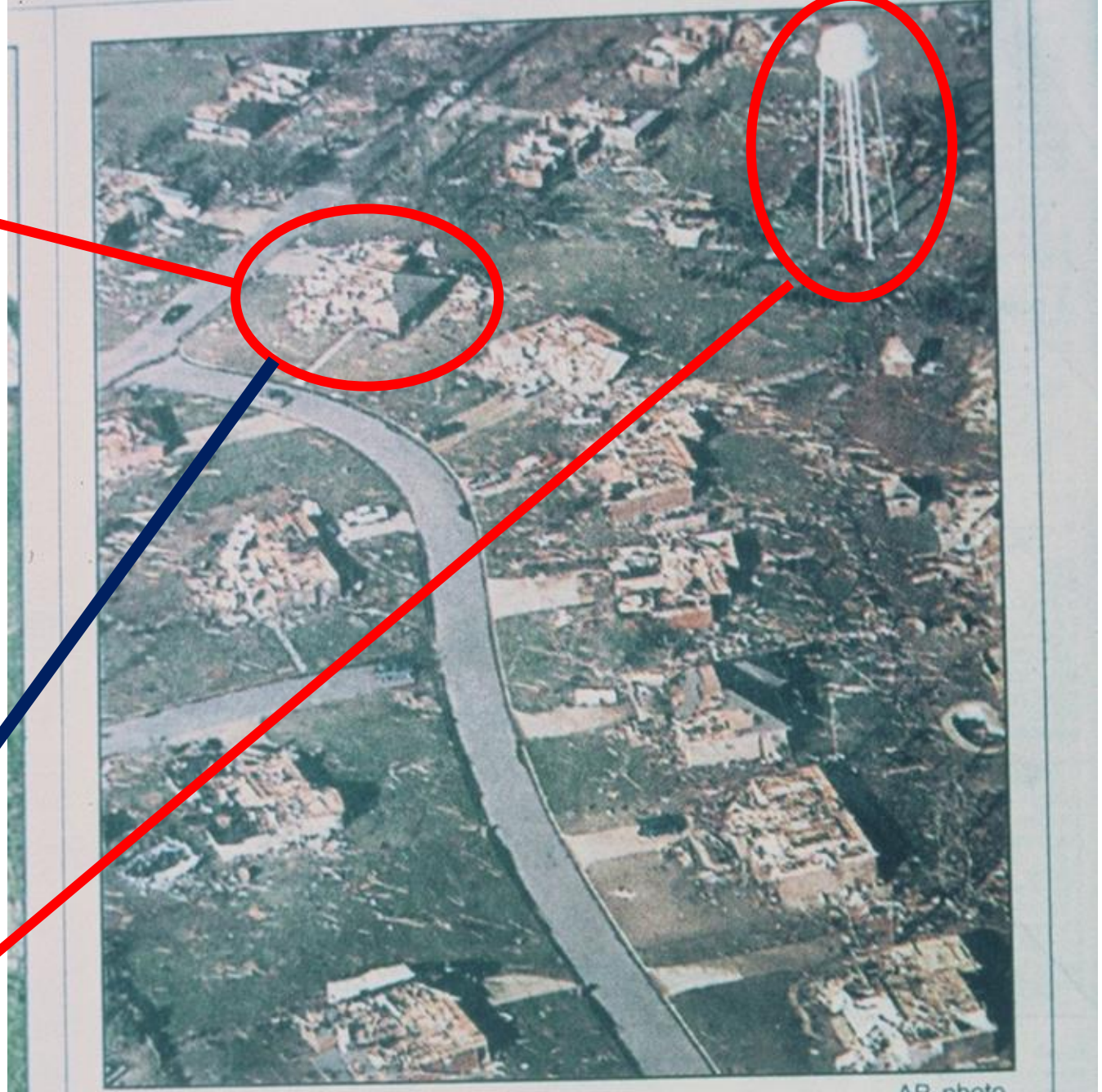

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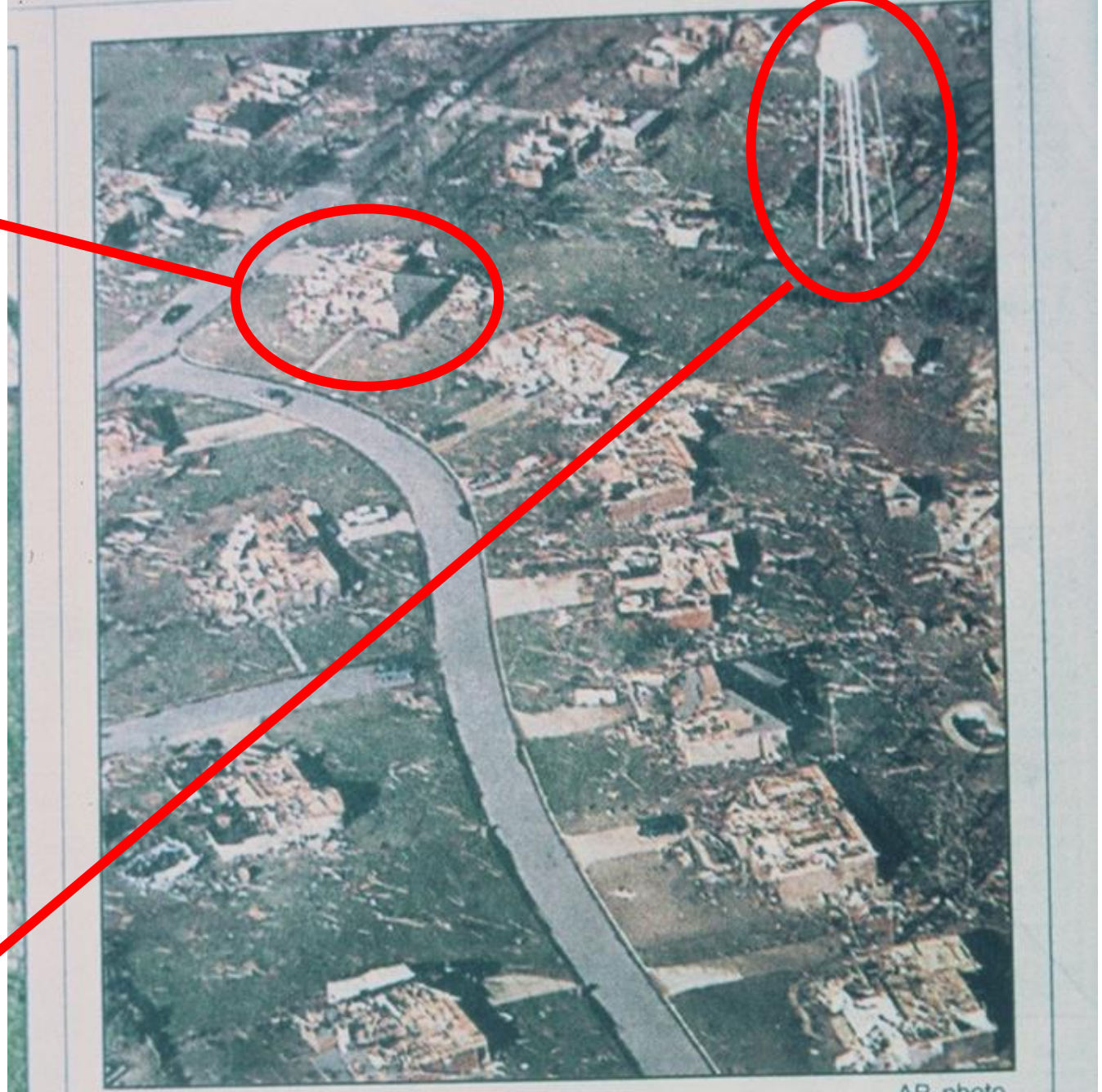
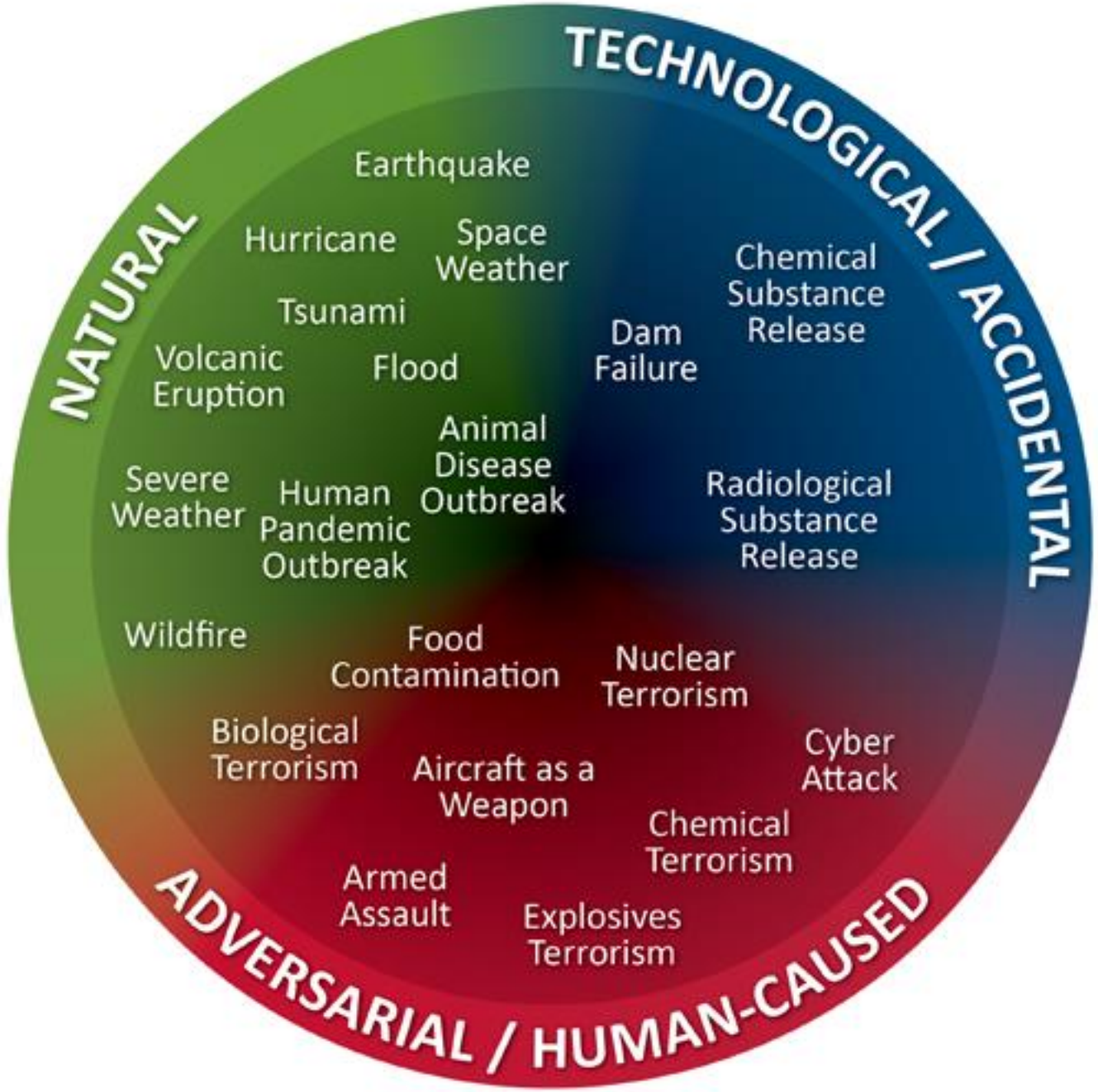
Codes and Standards are minimums!



AP photo

The wake of a tornado

Do you understand your client's risks?



Local Mitigation Planning Handbook

March 2013

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Handbook Organization

The *Handbook* is organized into nine recommended tasks for developing or updating a local hazard mitigation plan as illustrated in Figure I-1. Some of the tasks can be completed concurrently, while others depend on completing preceding tasks. Tasks 1-3 discuss the process and people needed to complete the remaining mitigation planning tasks and the best ways to document the process in the plan. Tasks 4-8 cover the specific analyses and decisions that need to be completed and recorded in the plan. Task 9 provides suggestions and resources for implementing your plan to reduce risk.

Figure I-1: *Local Mitigation Planning Handbook* Tasks.

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Figure I-1: *Local Mitigation Planning Handbook* Tasks.

Local Mitigation Planning Handbook

March 2013

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TASK 5	Conduct a Risk Assessment
TASK 6	Develop a Mitigation Strategy

Also apply these steps to the design of critical infrastructure.

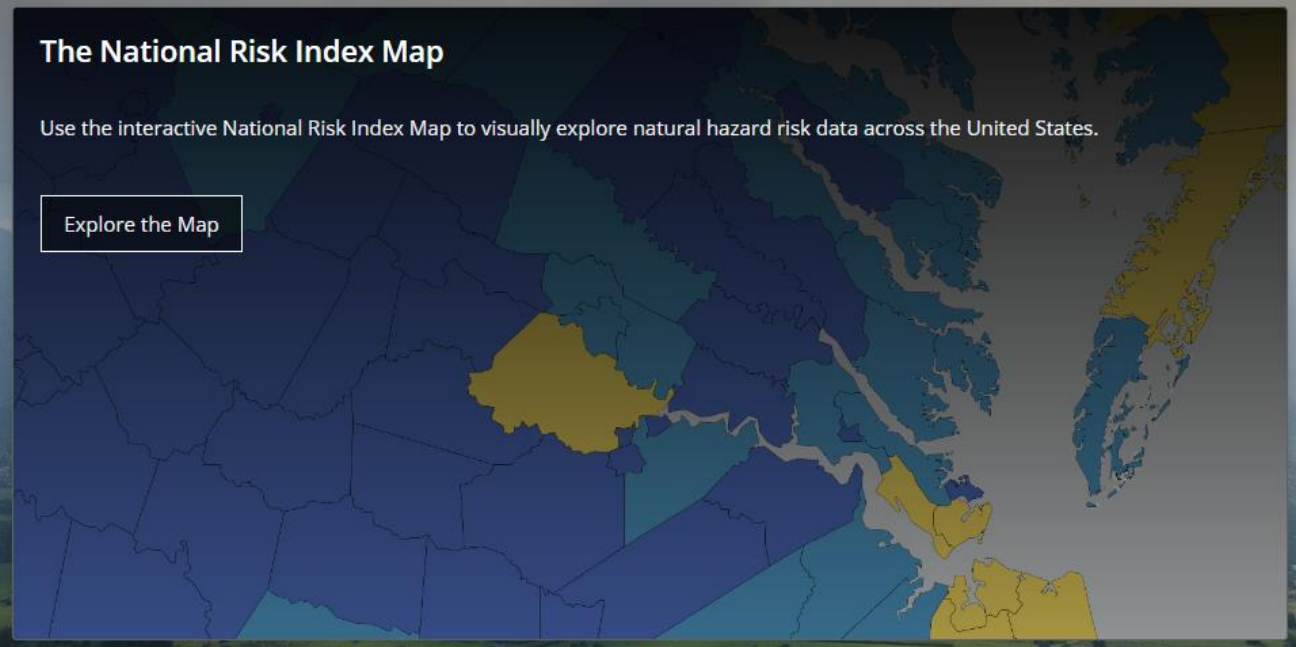
The National Risk Index

Discover the landscape of natural hazard risk in the United States.

The National Risk Index Map

Use the interactive National Risk Index Map to visually explore natural hazard risk data across the United States.

Explore the Map



What Is the National Risk Index?

Gain insight into what the National Risk Index is, how it's made possible, and how it can help.

Frequently Asked Questions

Review answers to questions that have been asked about the National Risk Index.

ASCE HAZARD TOOL

Measure Basemap Share

ADDRESS | LAT/LONG | FIND ON MAP

Iowa City, Iowa SEARCH

2 Requested Data

Standard Version: ASCE/SEI 7-22 — NEW! ASCE/SEI 41 now available

Risk Category: IV

Site Soil Class: E - Soft Clay Soil

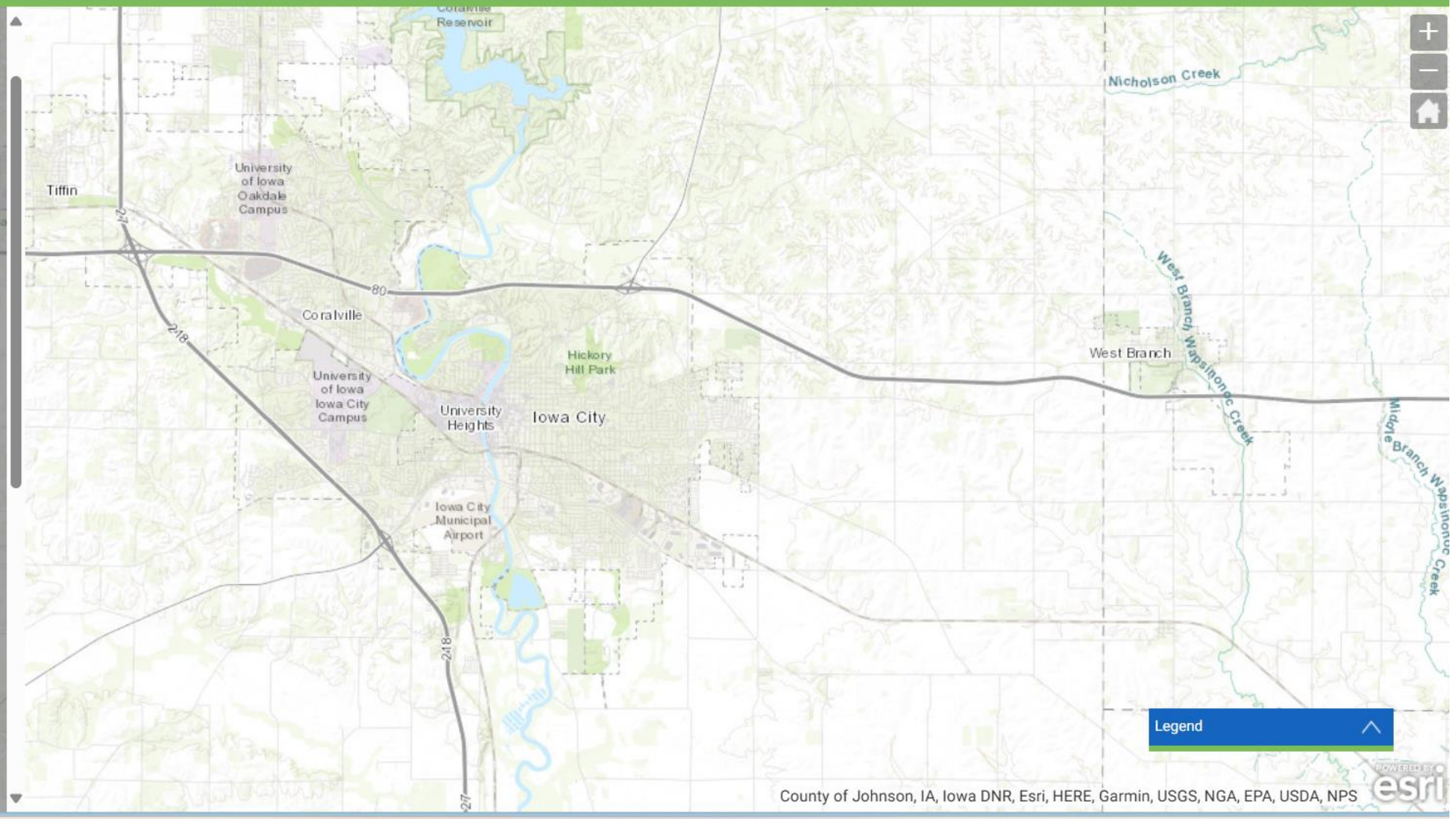
Measurements: Customary / SI

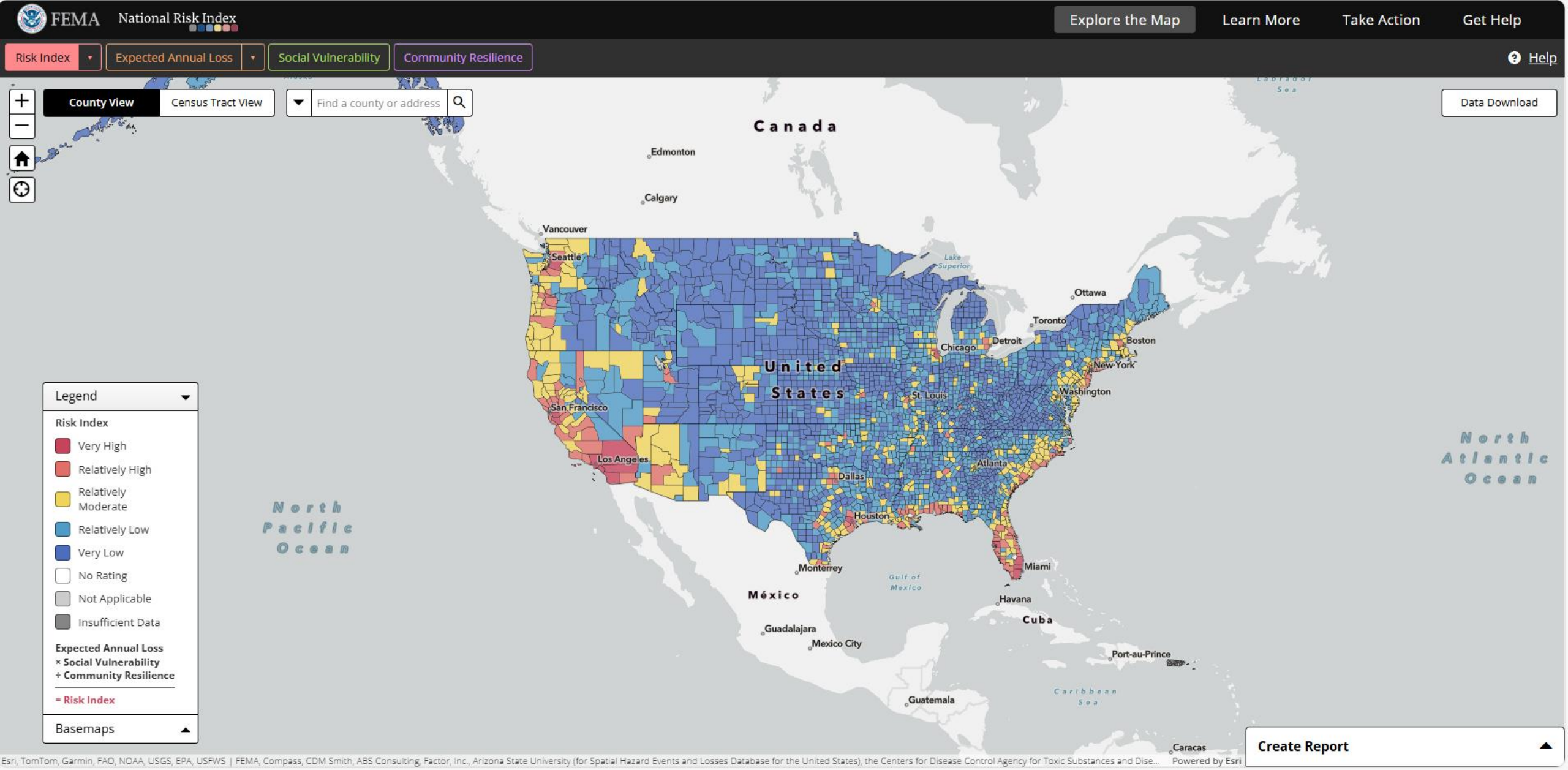
Load Types: Select all

- Wind
- Seismic
- Ice
- Snow
- Rain
- Flood
- Tsunami
- Tornado

VIEW RESULTS

All data are per the requirements of published ASCE




FEMA
National Risk Index
Explore the Map
Learn More
Take Action
Get Help
Risk Index
Expected Annual Loss
Social Vulnerability
Community Resilience
Help
County View
Census Tract View
Find a county or address
Data Download
Canada
Edmonton
Calgary
Vancouver
Seattle
San Francisco
Los Angeles
United States
Lake Superior
Ottawa
Toronto
Detroit
Chicago
Boston
New York
Washington
St. Louis
Atlanta
Dallas
Houston
Miami
Monterrey
México
Gulf of Mexico
Havana
Cuba
Guadalajara
Mexico City
Port-au-Prince
Caribbean Sea
Guatemala
Caracas
North Pacific Ocean
North Atlantic Ocean
Labrador Sea
Legend
Risk Index
Very High
Relatively High
Relatively Moderate
Relatively Low
Very Low
No Rating
Not Applicable
Insufficient Data
Expected Annual Loss
× Social Vulnerability
÷ Community Resilience
= Risk Index
Basemaps
Create Report
Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS | FEMA, Compass, CDM Smith, ABS Consulting, Factor, Inc., Arizona State University (for Spatial Hazard Events and Losses Database for the United States), the Centers for Disease Control Agency for Toxic Substances and Dise...
Powered by Esri

Print Report
Download Data
Compare Census Tracts

Summary
Risk Index
Expected Annual Loss
Social Vulnerability
Community Resilience
About the National Risk Index
How to Take Action

National Risk Index

March 25, 2025

Johnson County, Iowa

Summary

Risk Index is **Relatively Moderate** — Score **93.2** (0 – 100)

Expected Annual Loss is **Relatively Moderate** — Score **93.8** (0 – 100)

Social Vulnerability is **Relatively Low** — Score **35.1** (0 – 100)

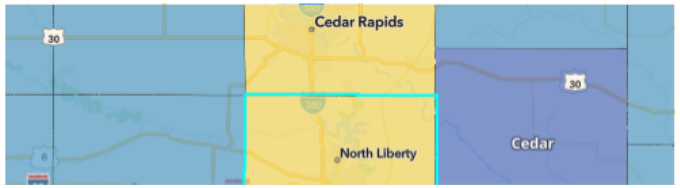
Community Resilience is **Very High** — Score **95.2** (0 – 100)

While reviewing this report, keep in mind that low risk is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience.

For more information about the National Risk Index, its data, and how to interpret the information it provides, please review the **About the National Risk Index** and **How to Take Action** sections at the end of this report. Or, visit the National Risk Index website at **hazards.fema.gov/nri/learn-more** to access supporting documentation and links.

Risk Index

The Risk Index rating is **Relatively Moderate** for **Johnson County, IA** when compared to the rest of the U.S.



Score **93.19**

National Percentile
93.19

Percentile Within Iowa
100.00

Print Report
Download Data
Compare Census Tracts

Summary
Risk Index
Expected Annual Loss
Social Vulnerability
Community Resilience
About the National Risk Index
How to Take Action

Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low
No Rating | Not Applicable | Insufficient Data

Hazard Type Risk Index

Hazard type Risk Index scores are calculated using data for only a single hazard type, and reflect a community's Expected Annual Loss value, community risk factors, and the adjustment factor used to calculate the risk value.

Hazard Type	Risk Index Rating	Risk Index Score	National Percentile
Avalanche	Not Applicable	--	
Coastal Flooding	Not Applicable	--	
Cold Wave	Relatively High	88.9	0 100
Drought	Relatively Moderate	84.3	0 100
Earthquake	Very Low	54.1	0 100
Hail	Relatively High	98.3	0 100
Heat Wave	Relatively Low	48.5	0 100
Hurricane	Very Low	11	0 100
Ice Storm	Relatively Moderate	71.3	0 100
Landslide	Relatively Moderate	93.6	0 100
Lightning	Relatively Low	61.8	0 100
Riverine Flooding	Relatively High	98	0 100
Strong Wind	Very High	99.6	0 100
Tornado	Relatively High	98.4	0 100
Tsunami	Not Applicable	--	
Volcanic Activity	Not Applicable	--	
Wildfire	Relatively Low	67.6	0 100
Winter Weather	Relatively Low	37.5	0 100

Local Mitigation Planning Handbook

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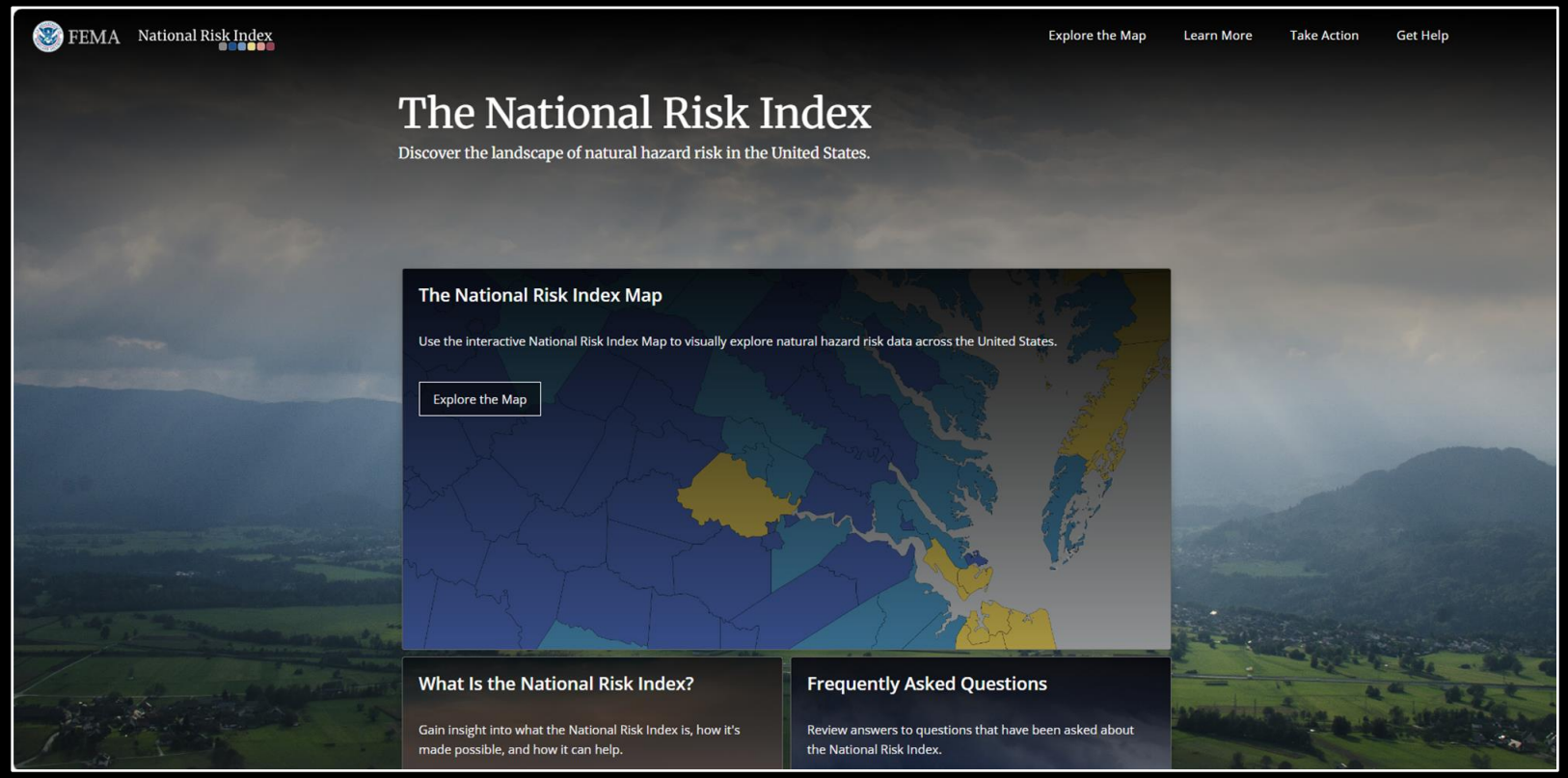
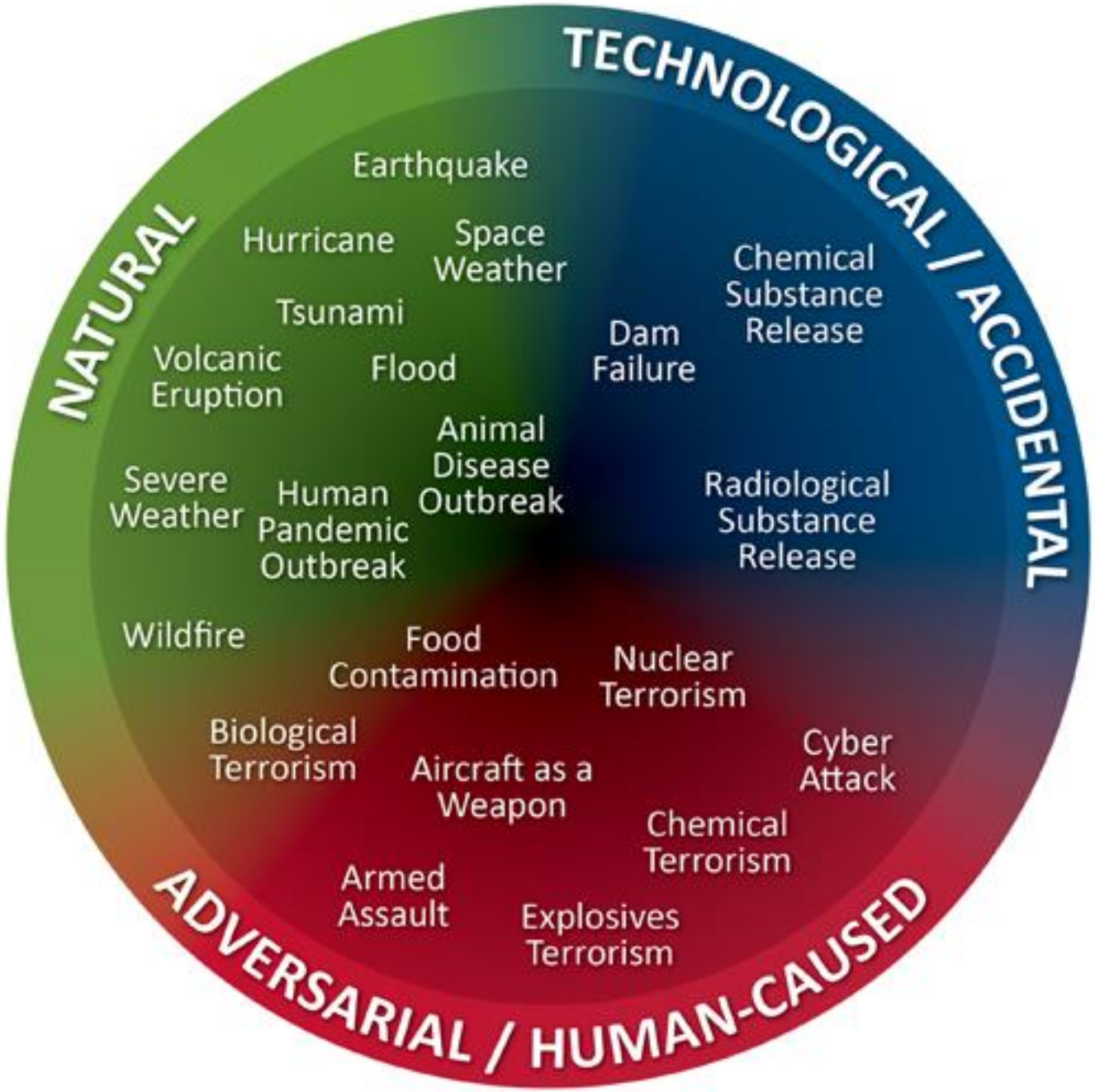
FEMA

Note: These focus only on natural hazards. You need to think more broadly than that.




NATURAL
TECHNOLOGICAL / ACCIDENTAL
ADVERSARIAL / HUMAN-CAUSED
Earthquake
Hurricane
Space Weather
Tsunami
Volcanic Eruption
Flood
Chemical Substance Release
Dam Failure
Animal Disease Outbreak
Severe Weather
Human Pandemic Outbreak
Radiological Substance Release
Wildfire
Food Contamination
Nuclear Terrorism
Biological Terrorism
Aircraft as a Weapon
Cyber Attack
Chemical Terrorism
Armed Assault
Explosives Terrorism

AP

WORLD U.S. ELECTION 2024 POLITICS SPORTS ENTERTAINMENT BUSINESS SCIENCE FACT CHECK ODDITIES HEALTH VIDEO

Israel-Hamas war Jennifer Crumbley trial Meta stock 'Cozy cardio' Bruce Springsteen

2024

WASHINGTON NEWS

US says it disrupted a China cyber threat, but warns hackers could still wreak havoc for Americans

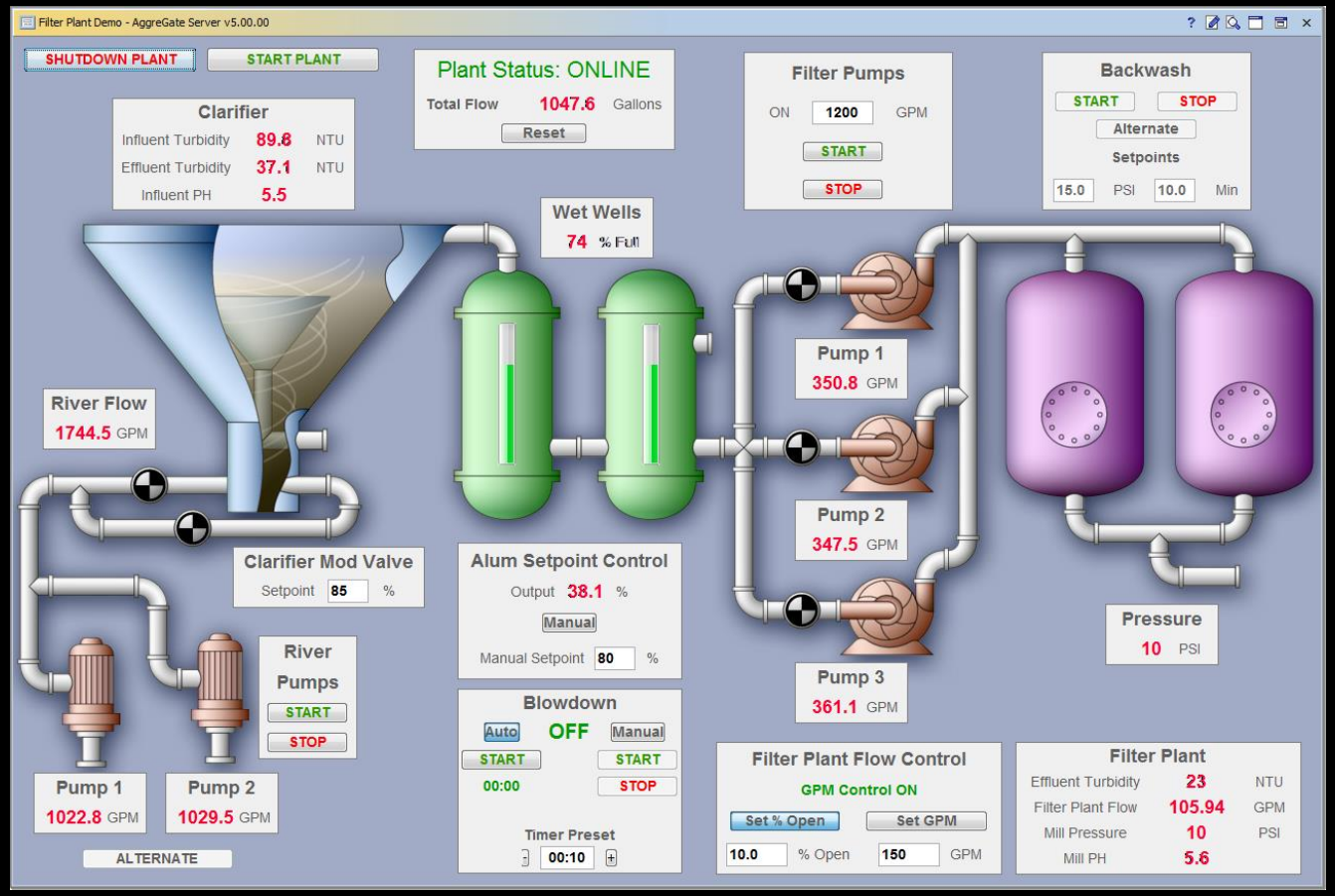
"China's hackers are positioning on American infrastructure in preparation to wreak havoc and cause real-world harm to American citizens and communities, if or when China decides the time has come to strike," Wray said.

Chinese government hackers are busily targeting water treatment plants, the electrical grid, transportation systems and other critical infrastructure inside the United States, FBI Director Chris Wray told House lawmakers on Wednesday in a fresh warning from Washington about Beijing's global ambitions. (Jan. 31)

▶ Videos 2 Photos 8

SCADA

(Supervisory Control and Data Acquisition)



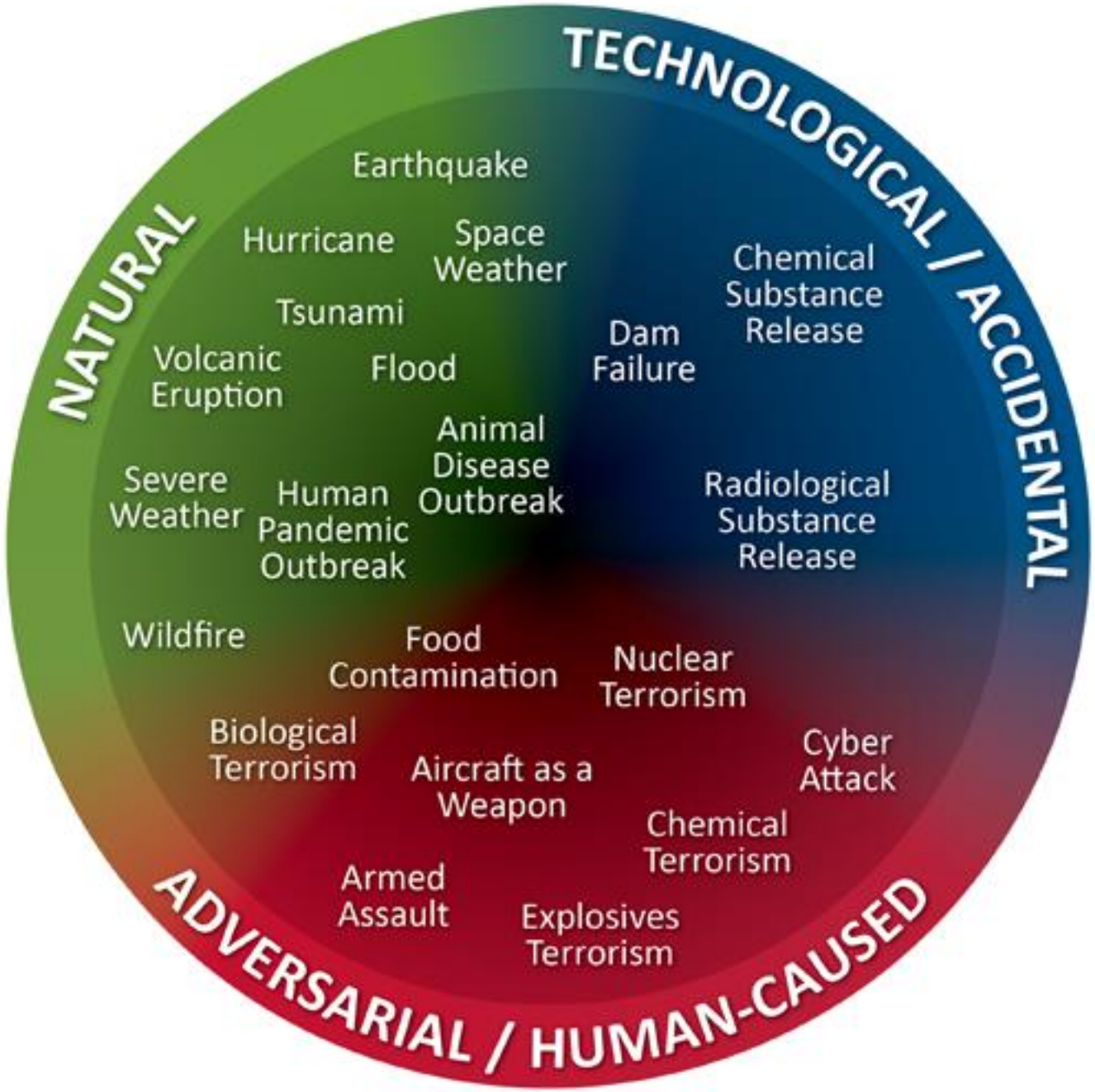
A computer hacker gained access to the water system of a city in Florida and tried to pump in a "dangerous" amount of a chemical, officials say.

The hacker briefly increased the amount of sodium hydroxide (lye) in Oldsmar's water treatment system, but a worker spotted it and reversed the action.

Lye is used in small amounts to control acidity but a large amount could have caused major problems in the water.

Hacker tries to poison water supply of Florida city

2 hours ago


NATURAL
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Earthquake
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Radiological Substance Release
Wildfire
Food Contamination
Nuclear Terrorism
Biological Terrorism
Aircraft as a Weapon
Cyber Attack
Chemical Terrorism
Armed Assault
Explosives Terrorism

Our designs need to anticipate:

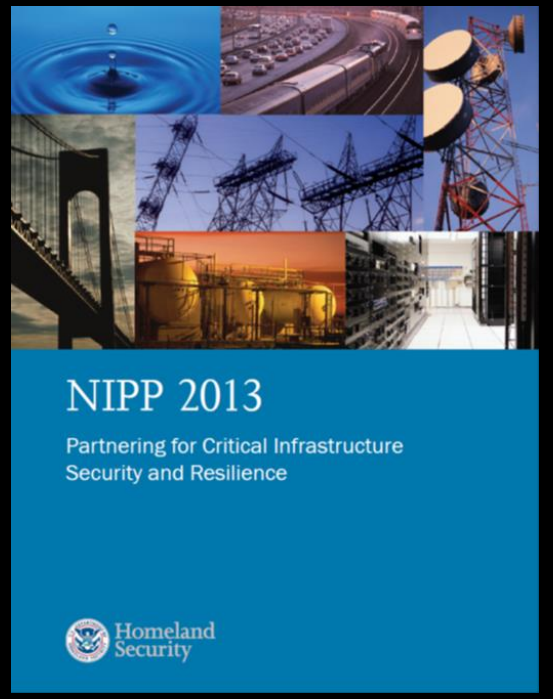
- Changing conditions
- Disruptions

Caused by:

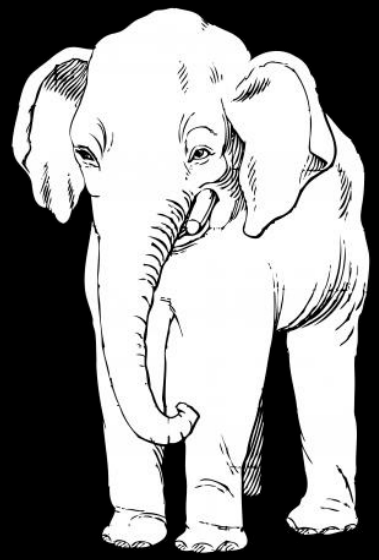
- **Deliberate attacks**
- **Accidents**
- **Naturally occurring threats or incidents.**
- **Chronic Stresses**

Objective:

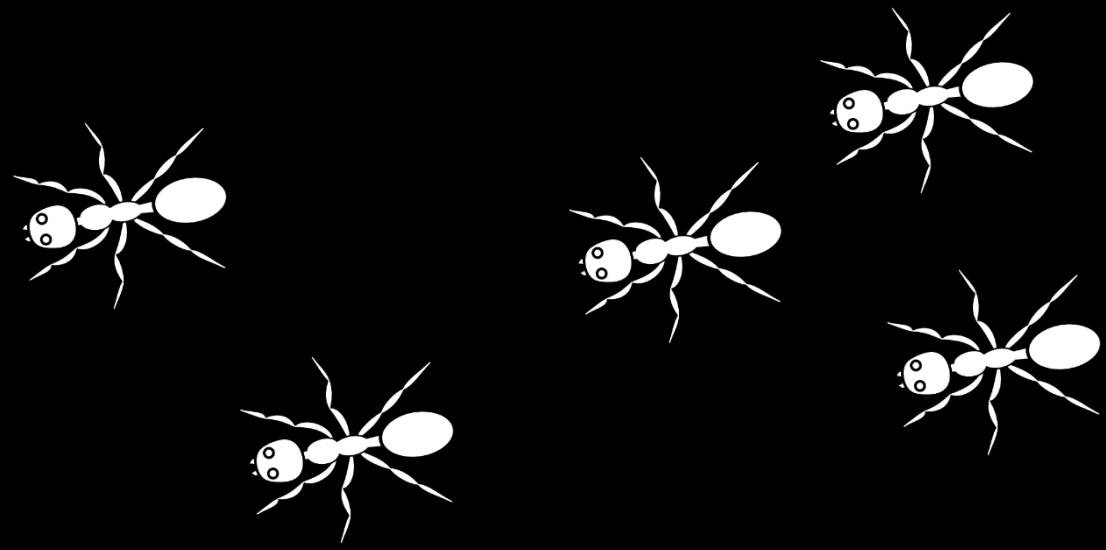
- Withstand
- Recover Rapidly
- Adapt
- Grow



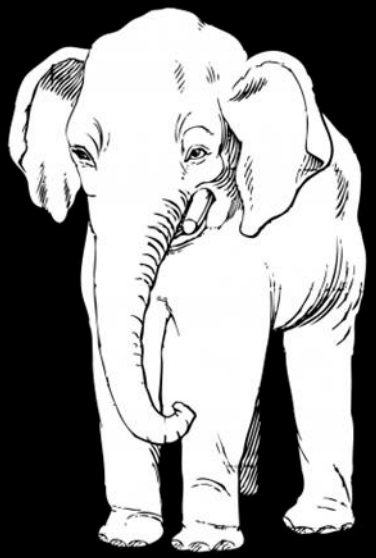
Acute Shocks



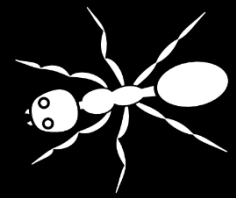
Chronic Stress

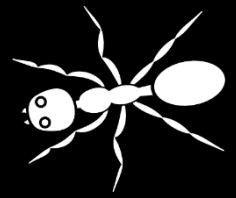


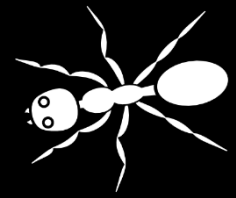
Acute Shocks



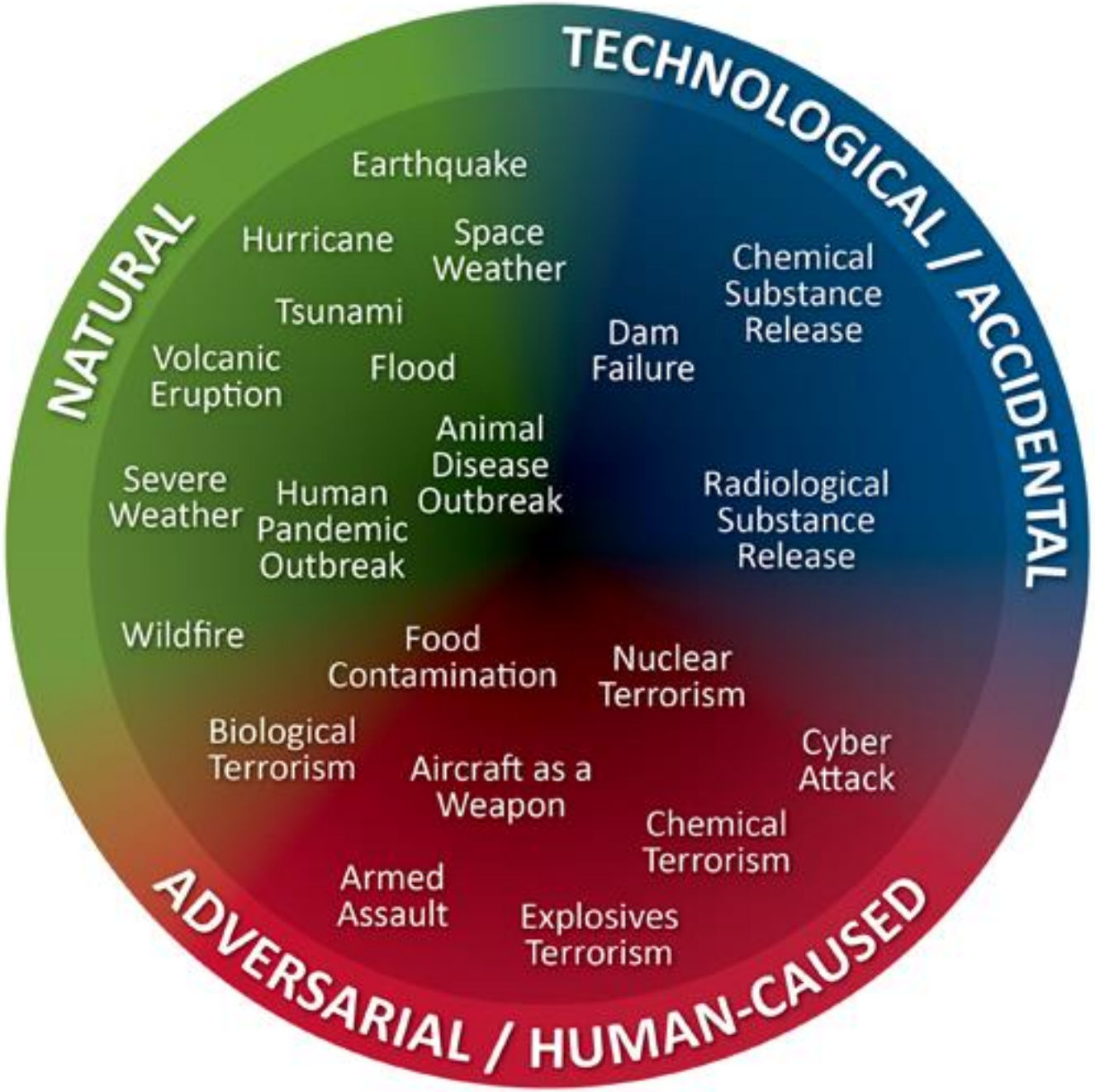
Chronic Stress





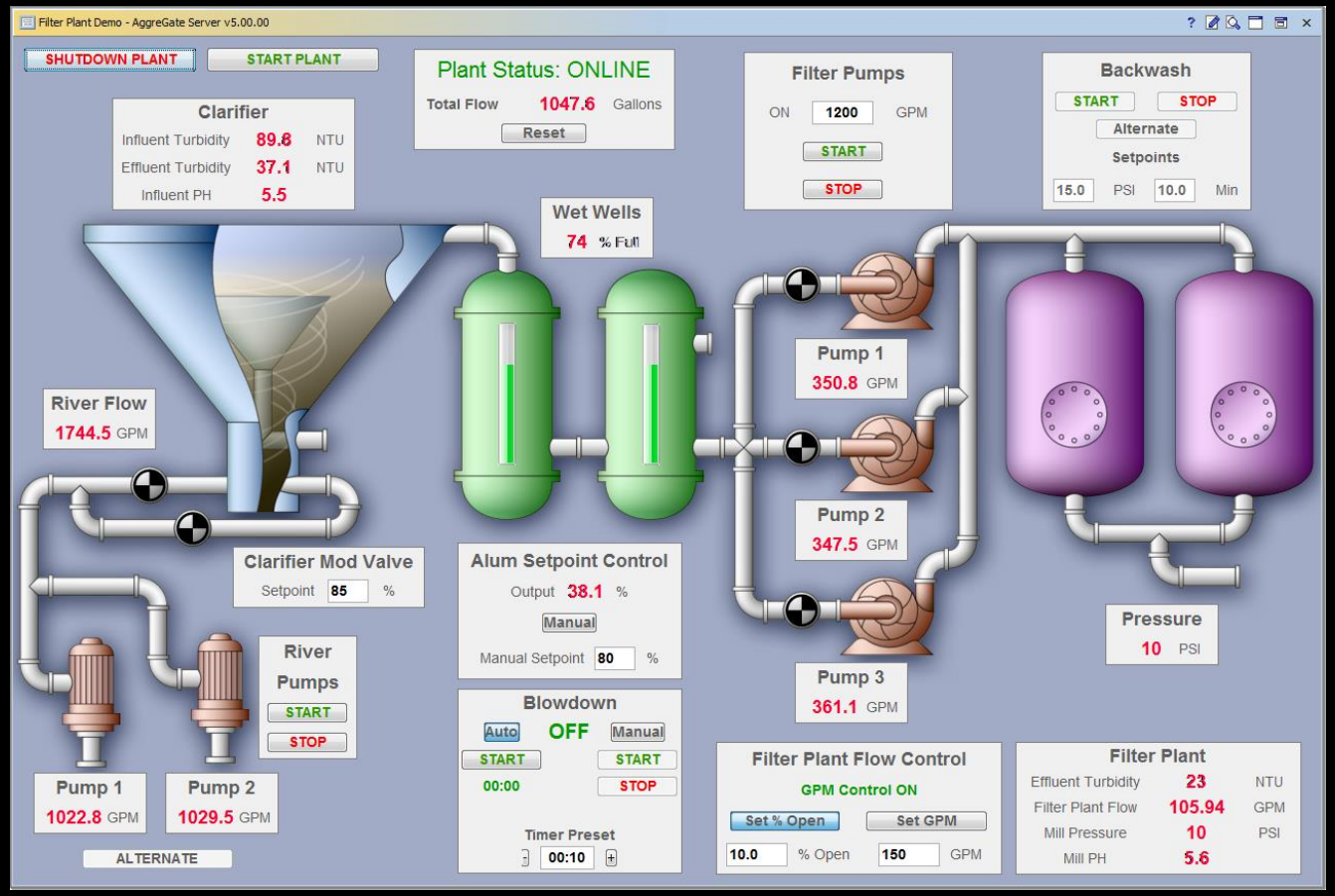


Now that you understand your client's **risks**, you can begin to explore ways to **mitigate**.



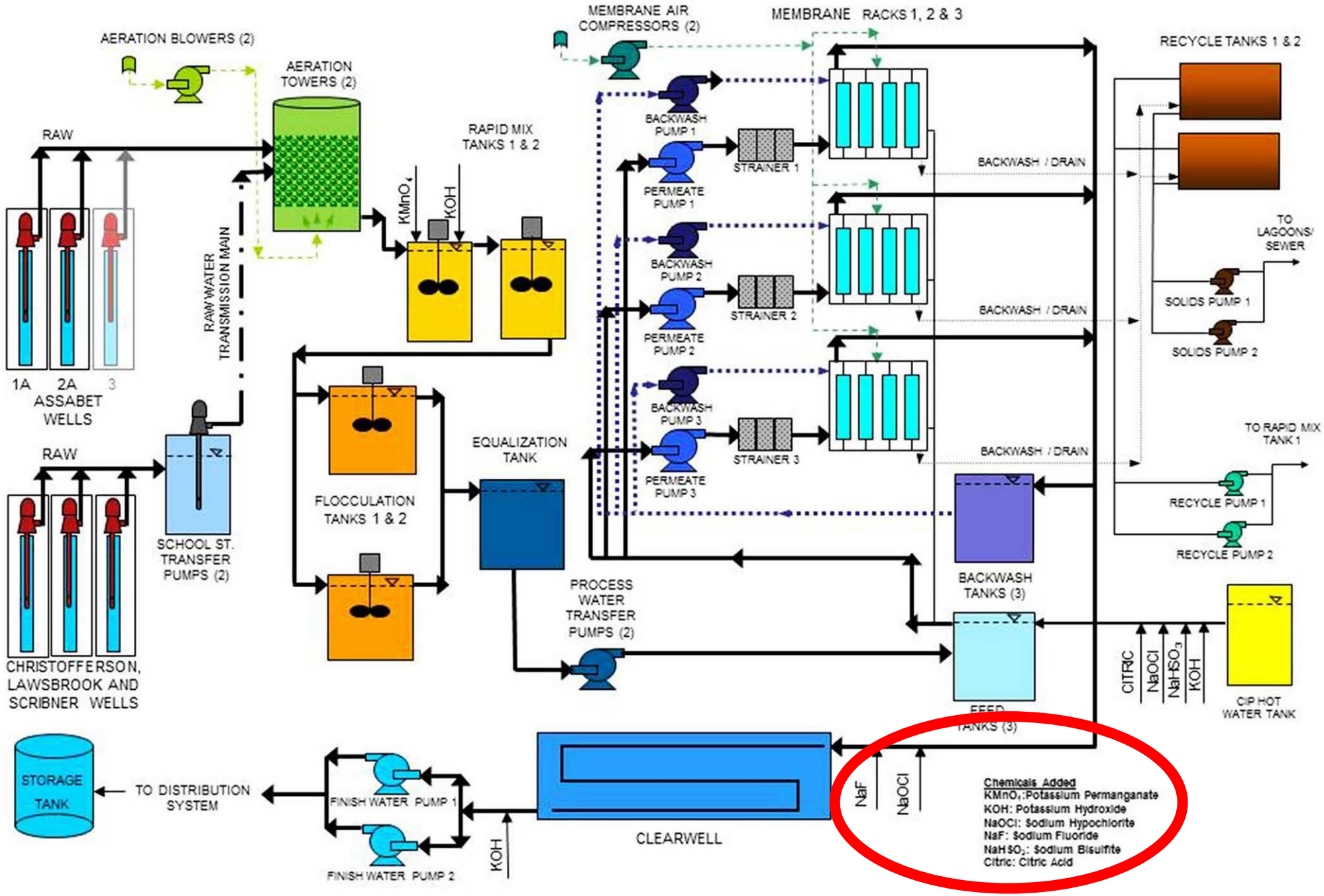
SCADA

(Supervisory Control and Data Acquisition)




USFilter
Control Systems
DANGER

Day tanks limit the maximum amount of chemical that can be added to the water.


AERATION BLOWERS (2)
AERATION TOWERS (2)
MEMBRANE AIR COMPRESSORS (2)
MEMBRANE RACKS 1, 2 & 3
RECYCLE TANKS 1 & 2
RAW
RAPID MIX TANKS 1 & 2
KMnO4
KOH
BACKWASH PUMP 1
PERMEATE PUMP 1
STRAINER 1
BACKWASH / DRAIN
BACKWASH PUMP 2
PERMEATE PUMP 2
STRAINER 2
BACKWASH / DRAIN
BACKWASH PUMP 3
PERMEATE PUMP 3
STRAINER 3
BACKWASH / DRAIN
TO LAGOONS/ SEWER
SOLIDS PUMP 1
SOLIDS PUMP 2
RAW WATER TRANSMISSION MAIN
1A
2A
3
ASSABET WELLS
RAW
SCHOOL ST. TRANSFER PUMPS (2)
FLOCCULATION TANKS 1 & 2
EQUALIZATION TANK
TO RAPID MIX TANK 1
RECYCLE PUMP 1
RECYCLE PUMP 2
BACKWASH TANKS (3)
PROCESS WATER TRANSFER PUMPS (2)
CHRISTOFFERSON, LAWSBROOK AND SCRIBNER WELLS
CITRIC
NaOCl
NaHSO3
KOH
CIP HOT WATER TANK
FEED TANKS (3)
STORAGE TANK
TO DISTRIBUTION SYSTEM
FINISH WATER PUMP 1
FINISH WATER PUMP 2
KOH
CLEARWELL
NaF
NaOCl
Chemicals Added
KMnO4:Potassium Permanganate
KOH: Potassium Hydroxide
NaOCl: Sodium Hypochlorite
NaF: Sodium Fluoride
NaHSO3: Sodium Bisulfite
Citric: Citric Acid


80
STEPHEN ATKINS DR

Mitigations Types

Non-Structural

Structural

Natural

Education and Awareness

Mitigation Type	Description	Examples
Local Plans and Regulations	These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.	• Comprehensive plans • Land use ordinances • Subdivision regulations • Development review • Building codes and enforcement • NFIP Community Rating System • Capital improvement programs • Open space preservation • Stormwater management regulations and master plans
Structure and Infrastructure Projects	These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program. *Task 9 – Create a Safe and Resilient Community* provides more information on these programs.	• Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits. • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	• Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and Awareness Programs	These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady[1] or Firewise[2] Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.	• Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • StormReady • Firewise Communities

If you give a kid a hammer….

If you only have a hammer, you tend to see every problem as a nail.

Abraham Maslow

Law of the instrument

From Wikipedia, the free encyclopedia

The concept known as the **law of the instrument**, otherwise known as the **law of the hammer**,[1] **Maslow's hammer** (or gavel), or **the golden hammer**,[a] is a cognitive bias that involves an over-reliance on a familiar tool. As Abraham Maslow said in 1966, "I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail."[2]

The concept is attributed both to Maslow[3] and to Abraham Kaplan,[4][5] although the hammer and nail line may not be original to either of them. It has in fact been attributed to sources ranging from Buddha to the Bible to Mark Twain, though it cannot be found in any of their writings.[6] It has also been attributed to the stock market speculator and author Bernard M. Baruch.[7]

What's your hammer?

Example: Mitigations Types for Flooding

Non-Structural

Structural

Natural

Education and Awareness

Mitigations Types

Non-Structural

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Education and Awareness

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Example: Mitigations Types for Flooding

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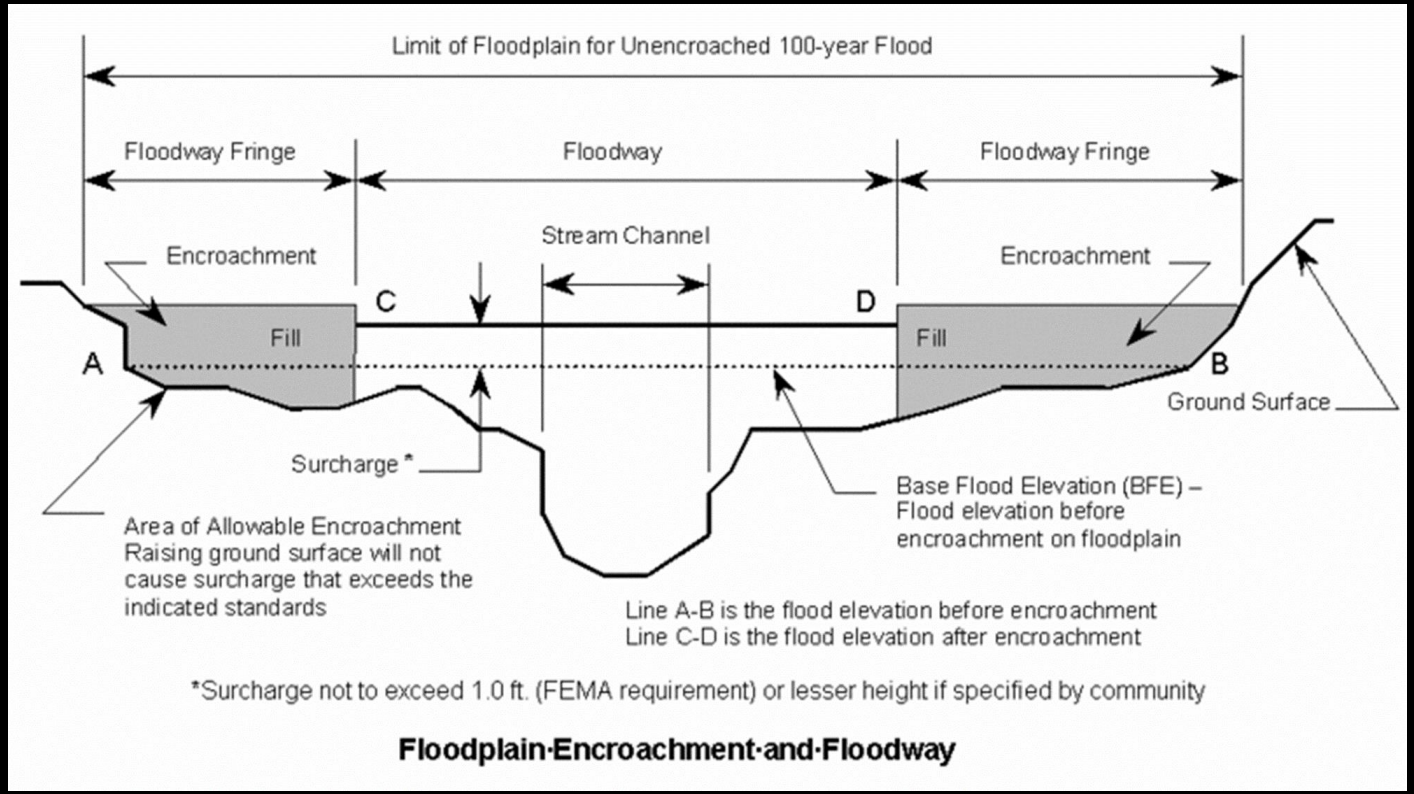
Structural

Natural

Education and Awareness



Example: Mitigations Types for Flooding

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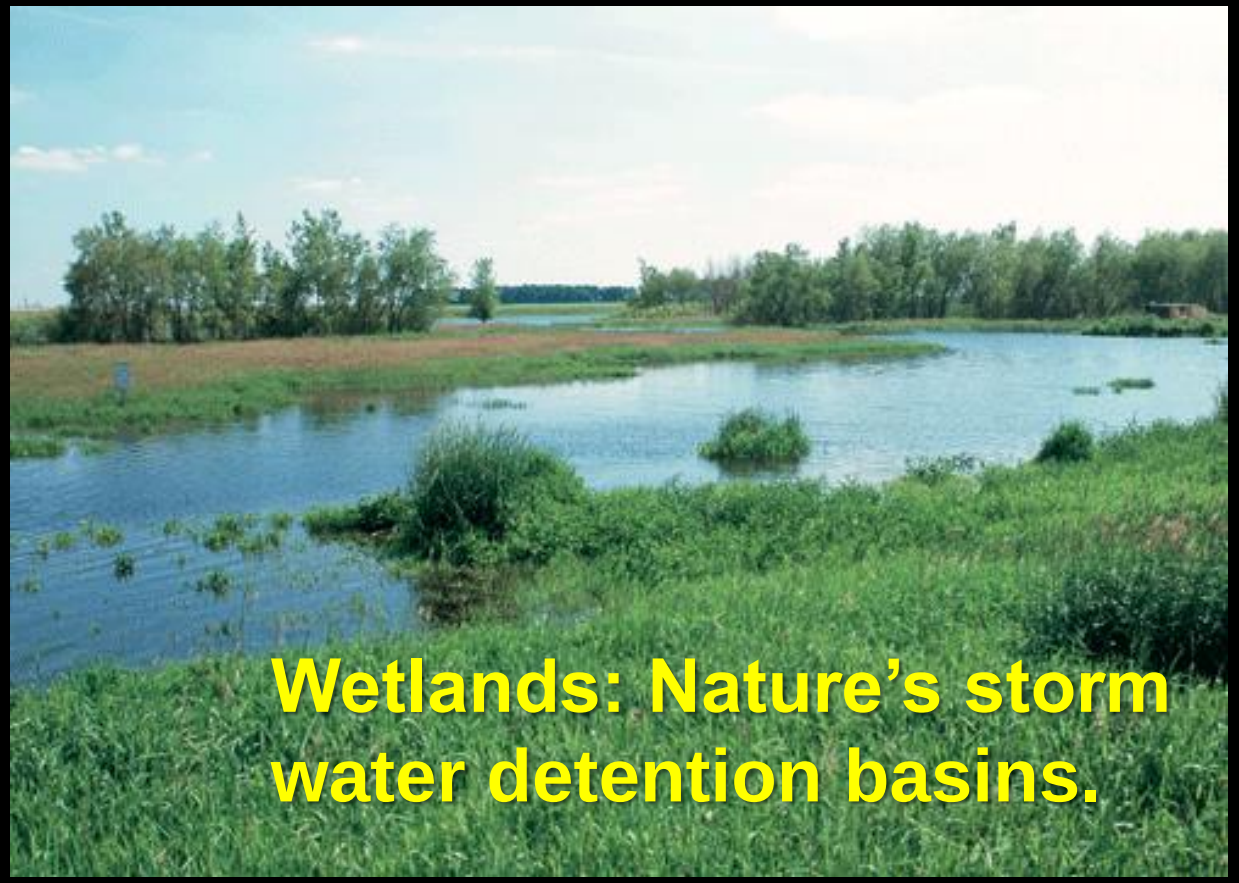

Example: Mitigations Types for Flooding

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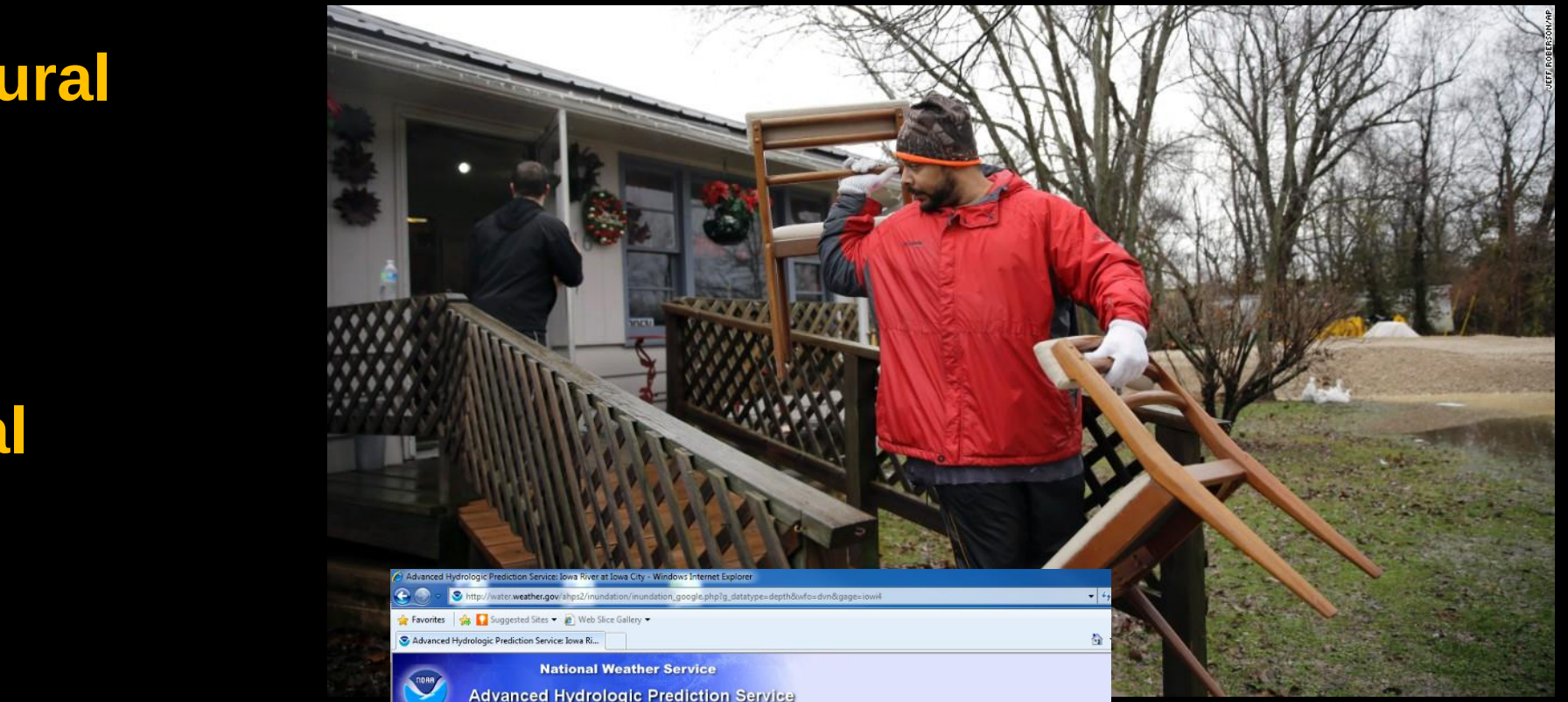
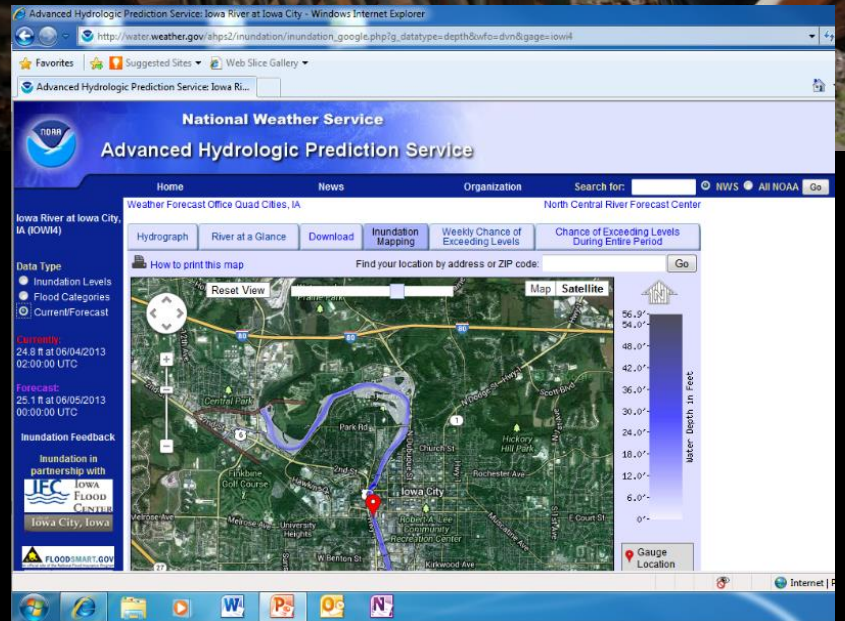
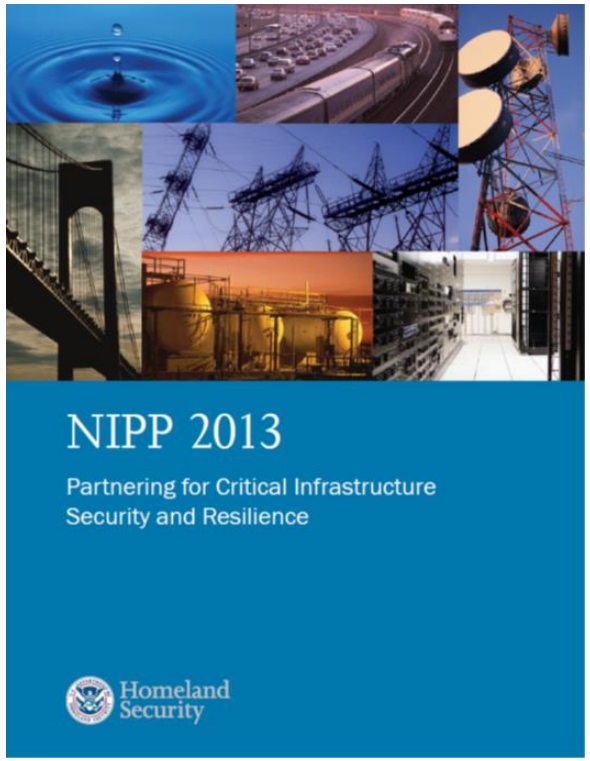
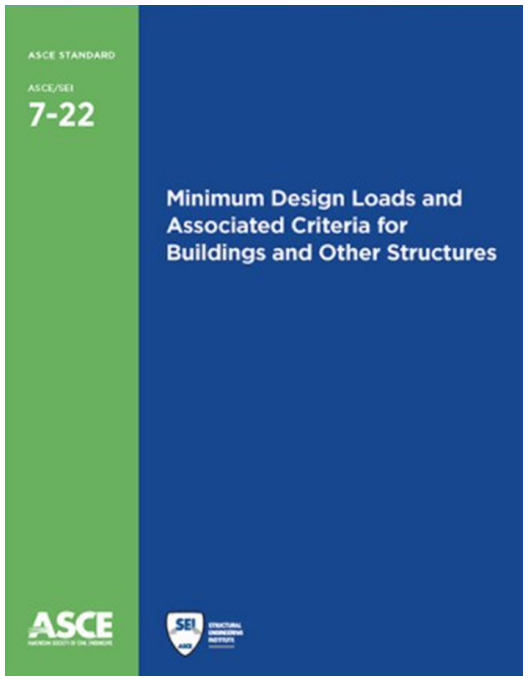
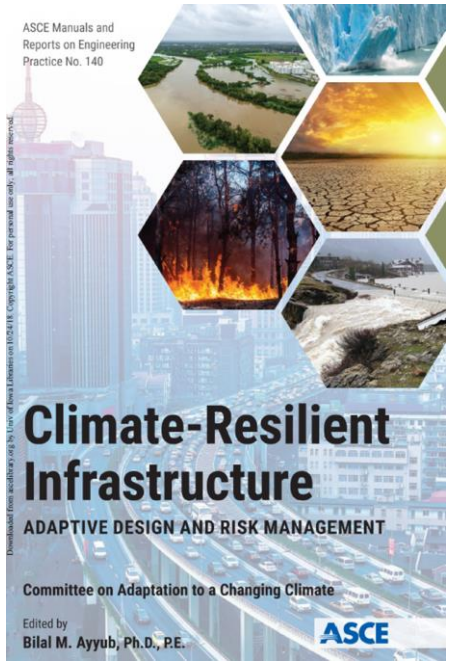


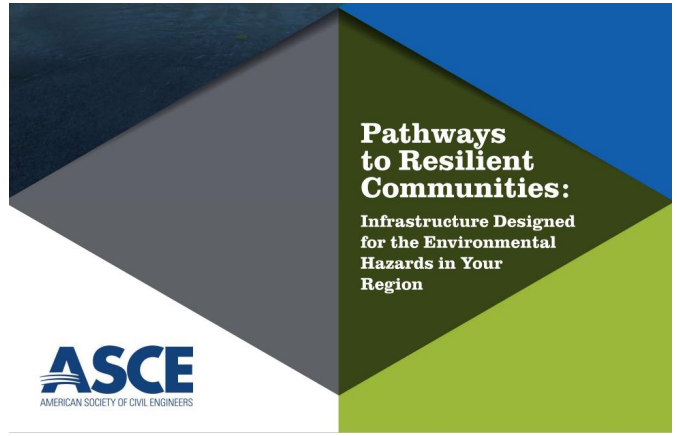


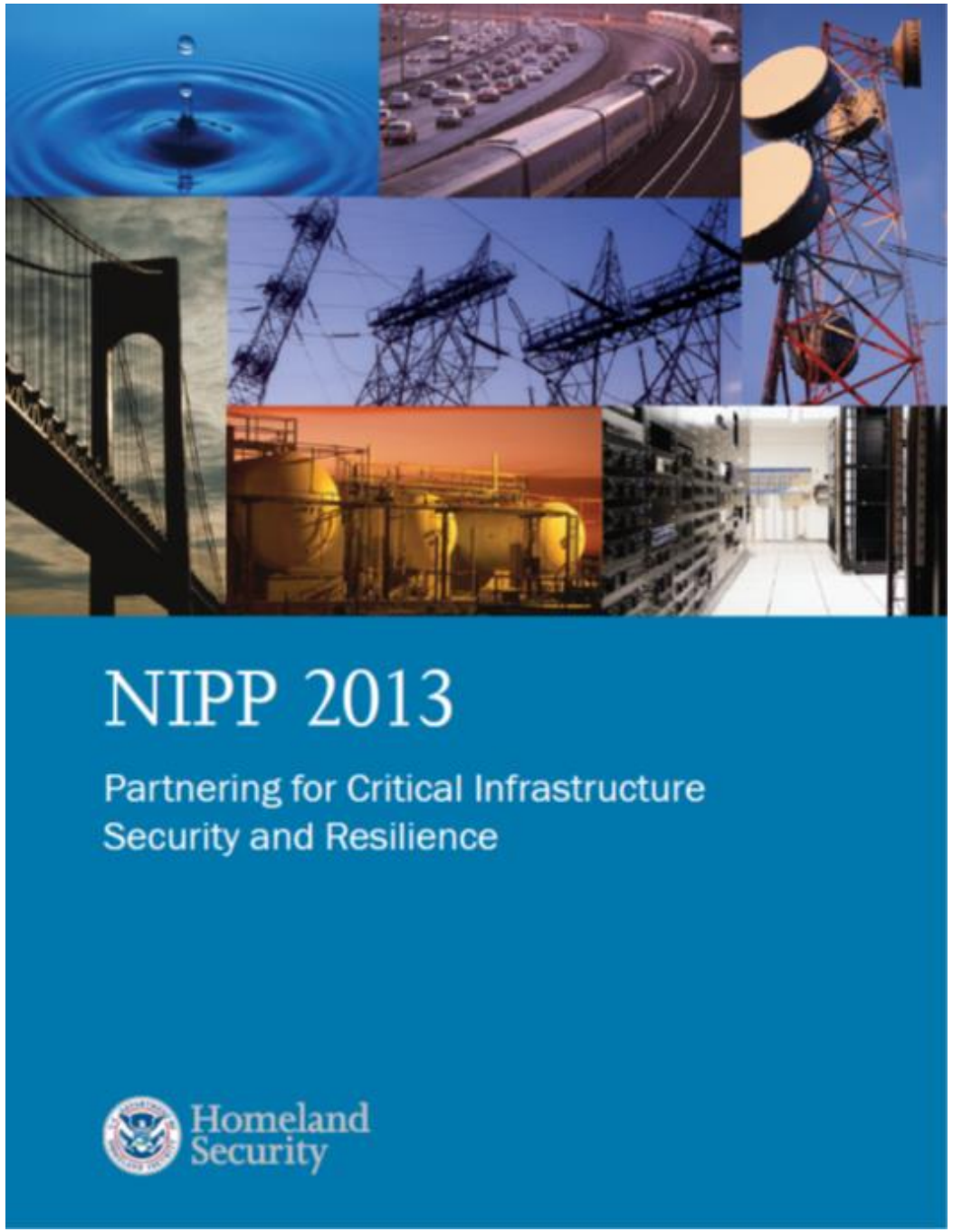
What are your resources for resilient design?



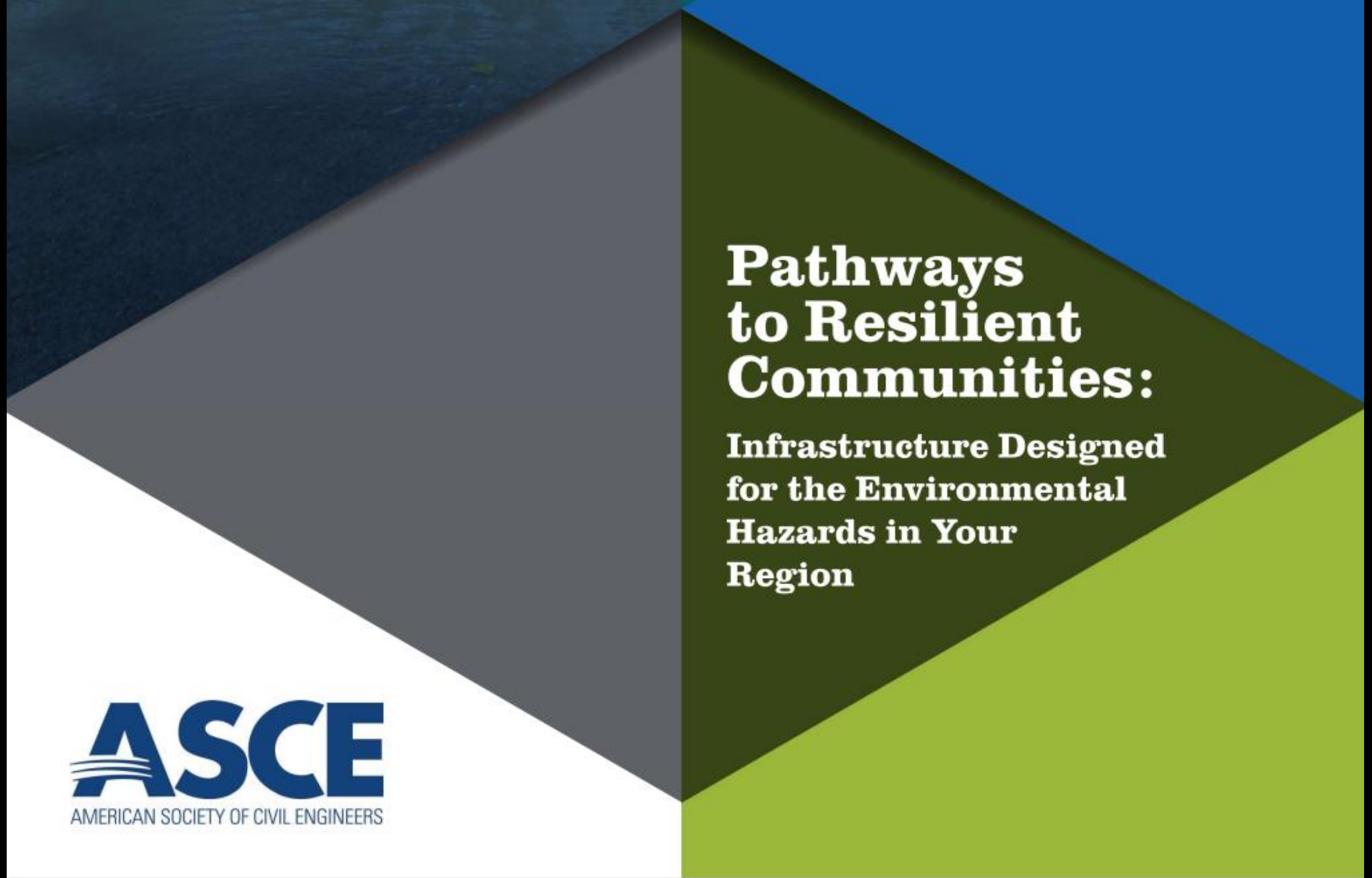







NIPP 2013
Partnering for Critical Infrastructure
Security and Resilience
Homeland
Security


City
Resilience
Framework
Leadership & Strategy
Health & Wellbeing
Economy & Society
Infrastructure & Environment
Fosters long term & integrated planning
Meets basic needs
Supports, livelihoods & employment
Ensures public health services
Promotes cohesive & engaged communities
Ensures social stability, security and justice
Fosters economic prosperity
Provides & enhances natural and manmade assets
Ensures continuity of critical services
Provides reliable communication & mobility
Promotes leadership & effective management
Empowers a broad range of stakeholders



Pathways to Resilient Communities:

Infrastructure Designed for the Environmental Hazards in Your Region

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

ASCE STANDARD

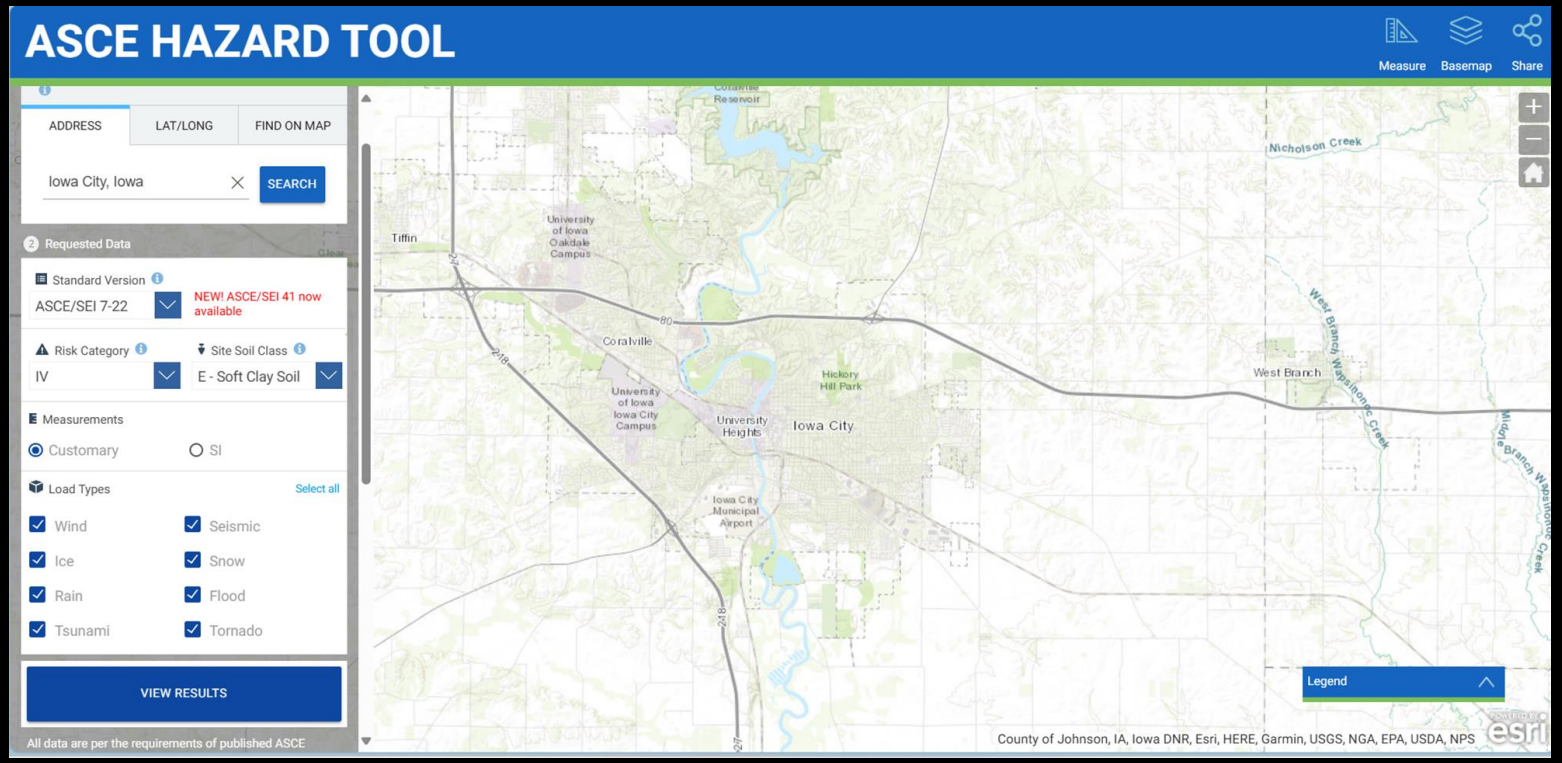
ASCE/SEI

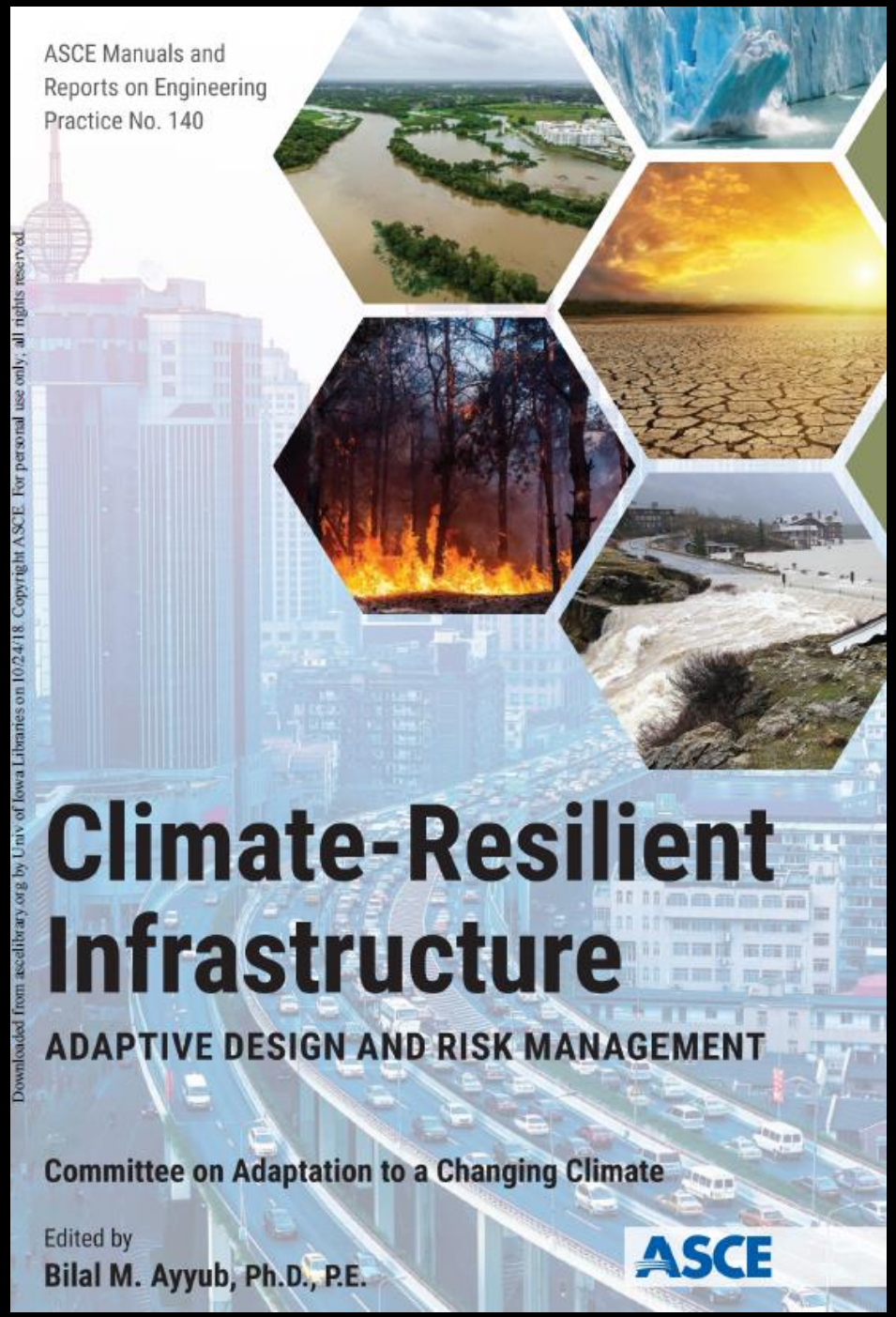
7-22

Minimum Design Loads and Associated Criteria for Buildings and Other Structures

ASCE

SEI





Adaptive Design

Figure 3-3(a). Los Angeles to San Diego (LOSSAN) Rail Corridor that follows the sea coast and crosses low-lying areas on trestles.
Source: Dial et al. (2014).

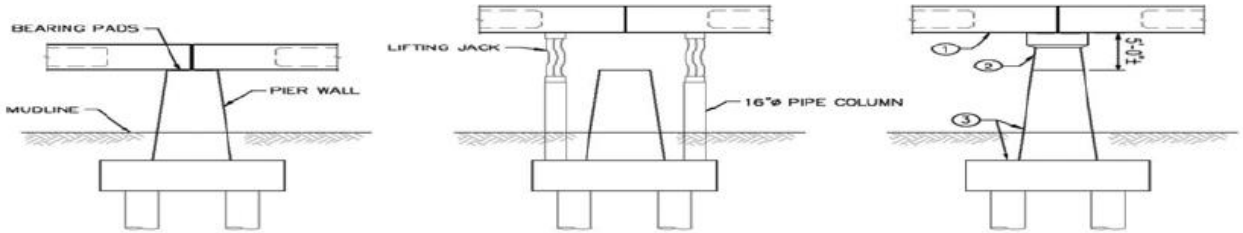


Figure 3-3(b). LOSSAN Rail Corridor uses a Moffatt and Nichol concept of pre-cast piers and caps to allow insertion of additional pier segments if needed to adapt to flooding hazard.
Source: Dial et al. (2014).

INFRASTRUCTURE RESILIENCE PUBLICATION 6

Integrating Resilience and Sustainability into Civil Engineering Projects

PREPARED BY
Social Science, Policy, Economics, Education, and Decision Committee of the Infrastructure Resilience Division of ASCE

Committee on Sustainability of ASCE

EDITED BY
Caroline Field, P.E., C.Eng
Chris Zawislak, P.E.

ASCE

FEMA-BRIC standards now available on ASCE AMPLIFY

3/13/2025 | 0 | 1 MIN READ

ASCE AMPLIFY is taking resilient infrastructure to the next level.

The recent addition of the FEMA Building Resilient Infrastructure and Communities to ASCE AMPLIFY brings 12 standards and three manuals of practice to the digital platform. These publications offer a comprehensive look at building codes and standards designed to mitigate the effects of climate change and future disasters on at-risk areas.

ASCE AMPLIFY is a one-stop shop for civil engineering standards. This subscription-based platform grants users access to an extensive catalog of ASCE standards.

ASCE 12/13/14

ASCE 19

ASCE 24

ASCE 29

ASCE 32

ASCE 33

ASCE 38

ASCE 39

ASCE 41

ASCE 45/46/47

ASCE 49

ASCE 55

ASCE 62/63/64

ASCE 73

ASCE 75

ASCE 78

FEMA-BRIC Program: ASCE Standards and Manuals of Practice includes:

(click thumbnail to view a standard)

ASCE 7

Minimum Design Loads and Associated Criteria for Buildings and Other Structures

ASCE 8

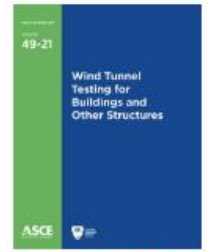
Standard Specifications for the Design of Cold-formed Stainless Steel Structural Membranes

ASCE 24

Flood Resistant Design and Construction

ASCE 41

Seismic Evaluation and Retrofit of Existing Buildings

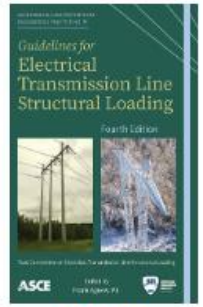


ASCE 49

Wind Tunnel Testing for Buildings and Other Structures

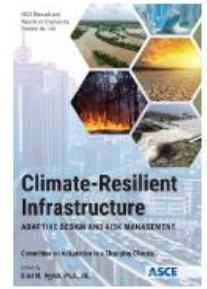
ASCE 73

Standard Practice for Sustainable Infrastructure



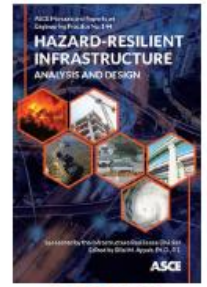
MOP 74

Guidelines for Electrical Transmission Line Structural Loading



MOP 140

Climate-Resilient Infrastructure: Adaptive Design and Risk Management



MOP 144

Hazard-Resilient Infrastructure: Analysis and Design

Update on FEMA Ending the Building Resilient Infrastructure and Communities Program

On April 4, FEMA announced that it is ending the Building Resilient Infrastructure and Communities Program (BRIC). These actions ensure that grant funding aligns with the President's Executive Orders and Secretary Noem's direction.

As the program is concluding, the Fiscal Year 2024 BRIC funding opportunity is cancelled, no applications submitted will be reviewed and no funds will be awarded.

In addition, for all BRIC applications from Fiscal Years 2020-2023, if grant funds have not been distributed to states, tribes, territories and local communities, funds will be returned either to the Disaster Relief Fund or the U.S. Treasury.

The program resulted in a lack of concrete results and a majority of funding being awarded to only a few states.

FEMA Ends Wasteful, Politicized Grant Program, Returning Agency to Core Mission of Helping Americans Recovering from Natural Disasters

FEMA.gov
https://www.fema.gov › default › files › documents PDF

Building Community Resilience with Nature-Based Solutions

FEMA and its federal partners produced the. National **Mitigation** Investment Strategy to increase our nation's resilience to natural hazards. Its purpose is to ...

31 pages

People also ask

What is a nature-based solution FEMA?

What are the types of mitigation in FEMA?

What are the type 3 nature-based solutions?

What are examples of nature-based solutions?

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Apr 25, 2023 — **Increase education and awareness on natural hazards and community vulnerabilities** · Build partnerships with government, organizations, businesses ...

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Making the Connection the Whole Community

FEMA provides funding for eligible mitigation plans and projects that reduce or eliminate risk to people and property from future disasters. The Hazard ...
7 pages

Scholarly articles for **fema community mitigation strategies**

... of **FEMA mitigation** offers: an analysis with **community**– ... - Kick - Cited by 146

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FEMA Eases Floodplain Requirements for Federally Funded Projects, Reducing Burden on American Communities

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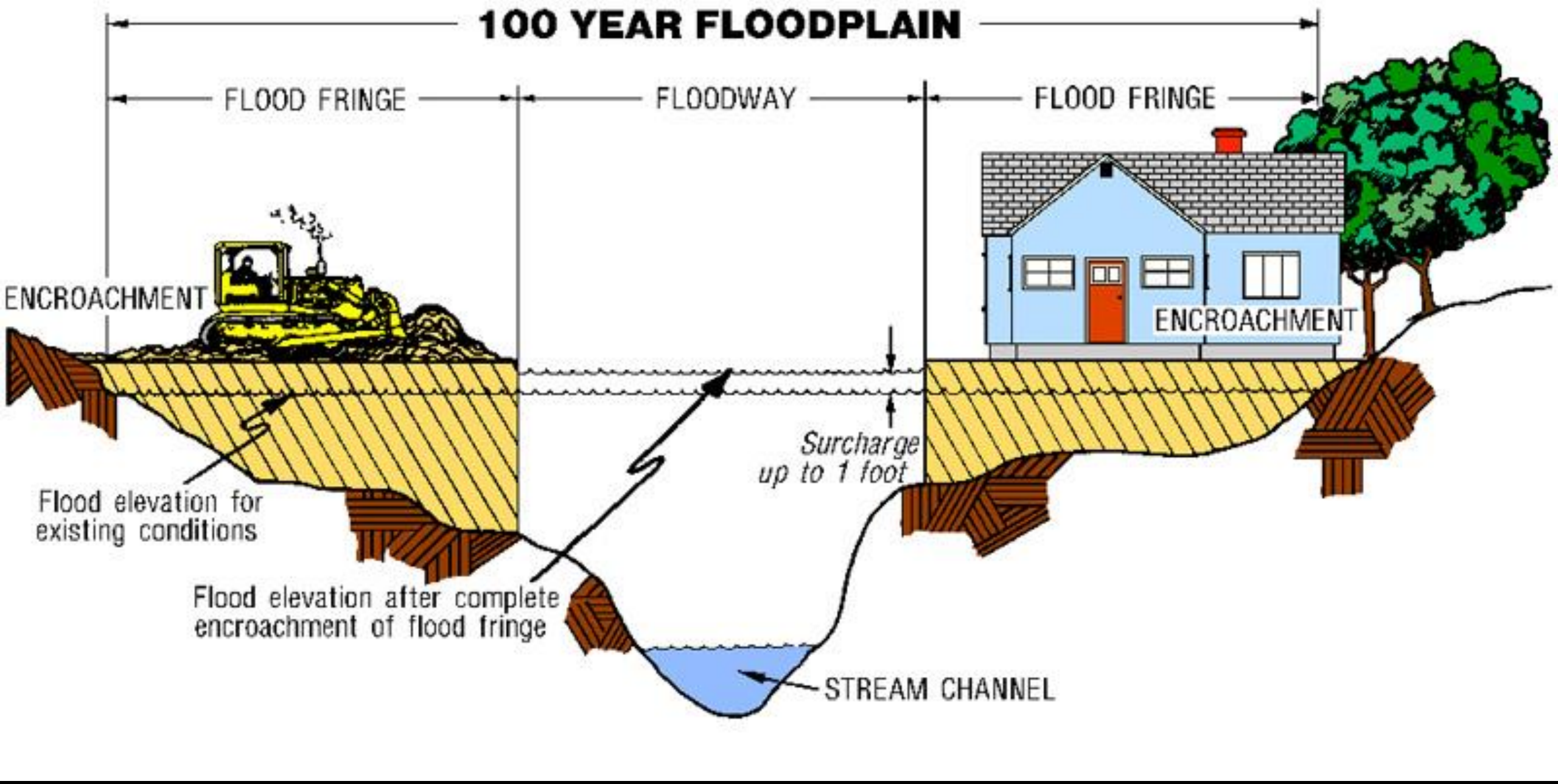
How will this impact our designs?

How will this impact our designs?

We still have:

- **Codes and Standards**


100 YEAR FLOODPLAIN
FLOOD FRINGE
FLOODWAY
FLOOD FRINGE
ENCROACHMENT
ENCROACHMENT
Surcharge
up to 1 foot
Flood elevation for
existing conditions
Flood elevation after complete
encroachment of flood fringe
STREAM CHANNEL

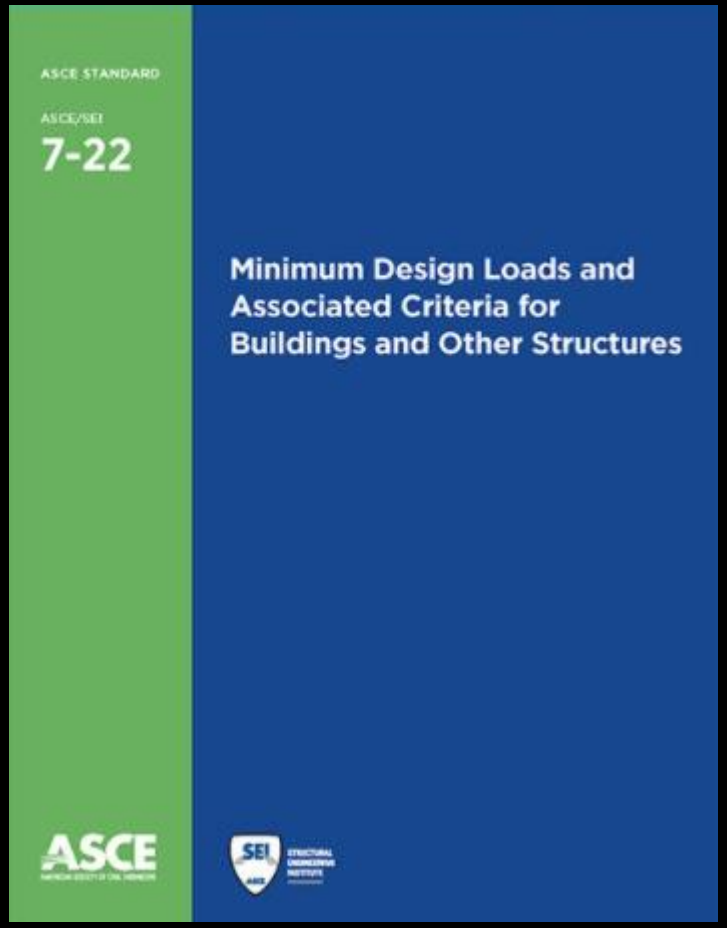


Table 1-1 Flood Design Class of Buildings and Structures

Use or Occupancy of Buildings and Structures	Flood Design Class
Buildings and structures that normally are unoccupied and pose minimal risk to the public or minimal disruption to the community should they be damaged or fail due to flooding. Flood Design Class 1 includes (1) temporary structures that are in place for less than 180 days, (2) accessory storage buildings and minor storage facilities (does not include commercial storage facilities), (3) small structures used for parking of vehicles, and (4) certain agricultural structures.[a]	1
Buildings and structures that pose a moderate risk to the public or moderate disruption to the community should they be damaged or fail due to flooding, except those listed as Flood Design Classes 1, 3, and 4. Flood Design Class 2 includes the vast majority of buildings and structures that are not specifically assigned another Flood Design Class, including most residential, commercial, and industrial buildings.	2
Buildings and structures that pose a high risk to the public or significant disruption to the community should they be damaged, be unable to perform their intended functions after flooding, or fail due to flooding. Flood Design Class 3 includes (1) buildings and structures in which a large number of persons may assemble in one place, such as theaters, lecture halls, concert halls, and religious institutions with large areas used for worship; (2) museums; (3) community centers and other recreational facilities; (4) athletic facilities with seating for spectators; (5) elementary schools, secondary schools, and buildings with college or adult education classrooms; (6) jails, correctional facilities, and detention facilities; (7) healthcare facilities not having surgery or emergency treatment capabilities; (8) care facilities where residents have limited mobility or ability, including nursing homes but not including care facilities for five or fewer persons; (9) preschool and child care facilities not located in one- and two-family dwellings; (10) buildings and structures associated with power generating stations, water and sewage treatment plants, telecommunication facilities, and other utilities which, if their operations were interrupted by a flood, would cause significant disruption in day-to-day life or significant economic losses in a community; and (11) buildings and other structures not included in Flood Design Class 4 (including but not limited to facilities that manufacture, process, handle, store, use, or dispose of such substances as hazardous fuels, hazardous chemicals, hazardous waste, or explosives) containing toxic or explosive substances where the quantity of the material exceeds a threshold quantity established by the authority having jurisdiction and is sufficient to pose a threat to the public if released.[b]	3
Buildings and structures that contain essential facilities and services necessary for emergency response and recovery, or that pose a substantial risk to the community at large in the event of failure, disruption of function, or damage by flooding. Flood Design Class 4 includes (1) hospitals and health care facilities having surgery or emergency treatment facilities; (2) fire, rescue, ambulance, and police stations and emergency vehicle garages; (3) designated emergency shelters; (4) designated emergency preparedness, communication, and operation centers and other facilities required for emergency response; (5) power generating stations and other public utility facilities required in emergencies; (6) critical aviation facilities such as control towers, air traffic control centers, and hangars for aircraft used in emergency response; (7) ancillary structures such as communication towers, electrical substations, fuel or water storage tanks, or other structures necessary to allow continued functioning of a Flood Design Class 4 facility during and after an emergency; and (8) buildings and other structures (including, but not limited to, facilities that manufacture, process, handle, store, use, or dispose of such substances as hazardous fuels, hazardous chemicals, or hazardous waste) containing sufficient quantities of highly toxic substances where the quantity of the material exceeds a threshold quantity established by the authority having jurisdiction and is sufficient to pose a threat to the public if released.[b]	4

[a] Certain agricultural structures may be exempt from some of the provisions of this standard; see Section C1.4.3.
[b] Buildings and other structures containing toxic, highly toxic, or explosive substances shall be eligible for assignment to a lower Flood Design Class if it can be demonstrated to the satisfaction of the authority having jurisdiction by a hazard assessment as described in Section 1.5.3 of *Minimum Design Loads for Buildings and Other Structures* that a release of the substances is commensurate with the risk associated with that Flood Design Class.

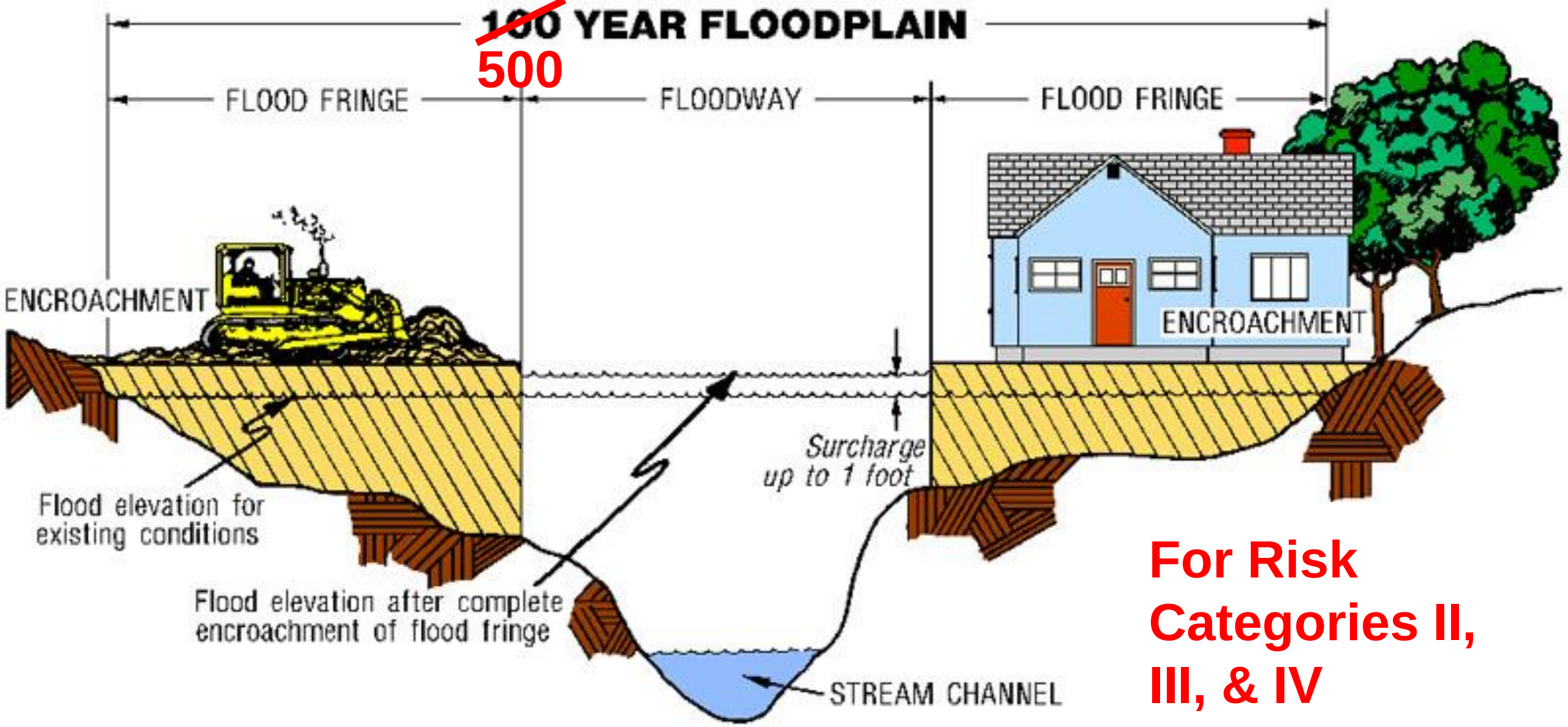
FREE ACCESS | Correction | May 25, 2023

Supplement 2 for Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE/SEI 7-22)

Publication: Minimum Design Loads and Associated Criteria for Buildings and Other Structures • https://doi.org/10.1061/9780784415788.sup2

Abstract

In ASCE/SEI 7-22 Supplement 2, the Flood Hazard Area is increased from the 100-year flood plain to the 500-year flood plain for Risk Categories II, III, and IV structures to improve the performance of structures subjected to flood events and to meet the target reliabilities of the standard. This change in approach, along with revised loading equations, is a significant departure from previous versions of ASCE 7. In addition to other updates in this supplement, the majority of Chapter 5, Flood Loads, and its commentary have been updated.



For Risk Categories II, III, & IV

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English Español

Release Date	Release Number
March 25, 2025	HQ-25-36

FEMA's regulations at Title 44 Part 9 of the Code of Federal Regulations (CFR): Floodplain Management and Protection of Wetlands, remain in effect. In determining whether a proposed action for federal funding is in the floodplain, FEMA will use the 1% annual chance (100-year) floodplain and flood elevation for non-critical actions and the 0.2% annual chance (500-year) floodplain and flood elevation for critical actions (such as the construction of fire and police stations or hospitals).

How will this impact our designs?

We still have:

- Codes and Standards
- Code of Ethics

Code of Ethics

Preamble

Society

Natural and built environment

Profession

Clients and employers

Peers

ASCE AMERICAN SOCIETY® OF CIVIL ENGINEERS

Preamble

Members of The American Society of Civil Engineers conduct themselves with integrity and professionalism, and above all else protect and advance the health, safety, and welfare of the public through the practice of Civil Engineering.

Engineers govern their professional careers on the following fundamental principles:

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Building Community Resilience with Nature-Based Solutions

FEMA and its federal partners produced the. National **Mitigation** Investment Strategy to increase our nation's resilience to natural hazards. Its purpose is to ...

31 pages

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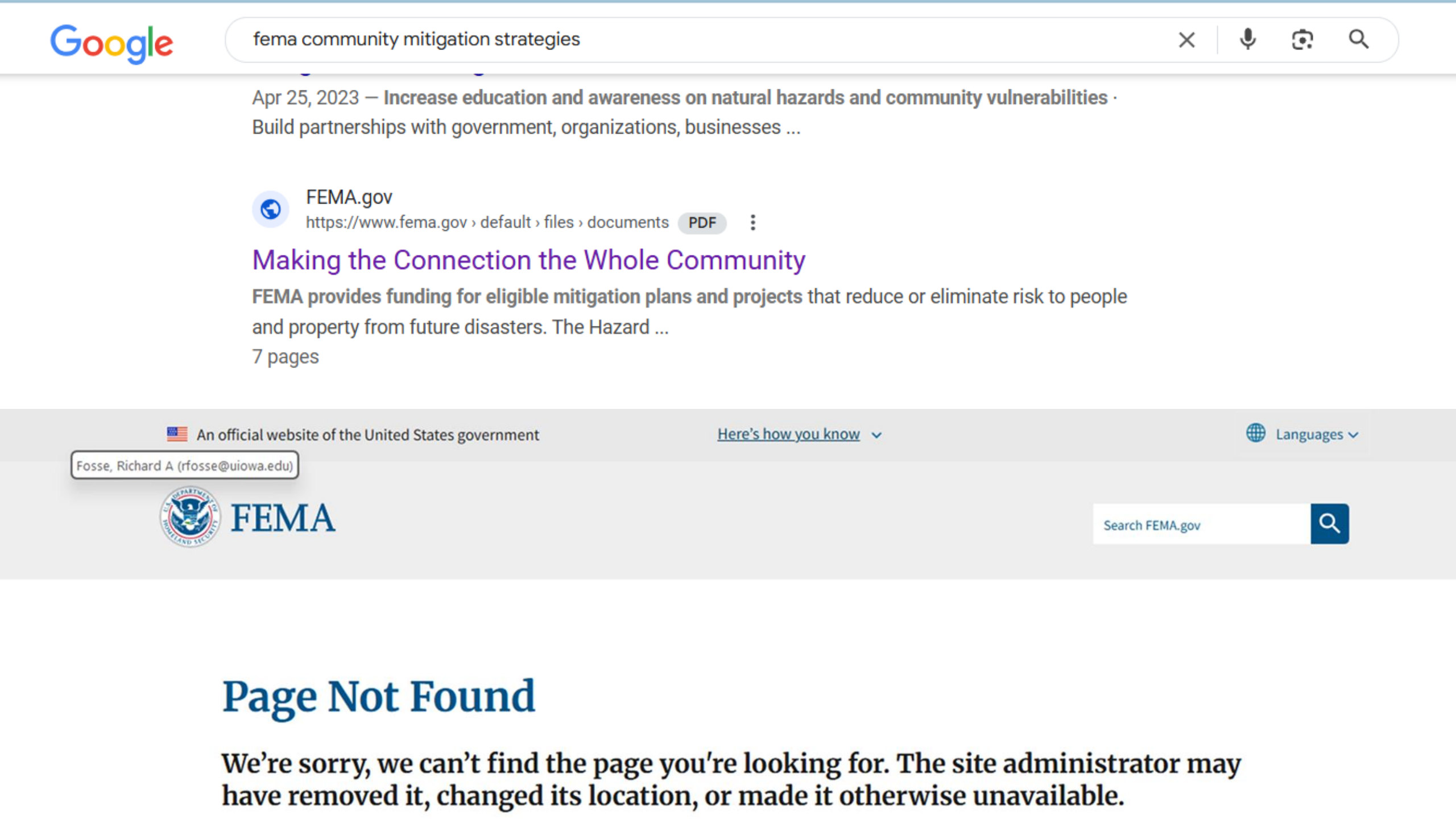
Google
fema community mitigation strategies
Apr 25, 2023 — Increase education and awareness on natural hazards and community vulnerabilities · Build partnerships with government, organizations, businesses ...
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Making the Connection the Whole Community
FEMA provides funding for eligible mitigation plans and projects that reduce or eliminate risk to people and property from future disasters. The Hazard ...
7 pages
An official website of the United States government
Here's how you know
Languages
Fosse, Richard A (rfosse@uiowa.edu)
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FEMA may no longer be leading the charge on resilience.

Update on FEMA Ending the Building Resilient Infrastructure and Communities Program

On April 4, FEMA announced that it is ending the Building Resilient Infrastructure and Communities Program (BRIC). These actions ensure that grant funding aligns with the President's Executive Orders and Secretary Noem's direction.

As the program is concluding, the Fiscal Year 2024 BRIC funding opportunity is cancelled, no applications submitted will be reviewed and no funds will be awarded.

In addition, for all BRIC applications from Fiscal Years 2020-2023, if grant funds have not been distributed to states, tribes, territories and local communities, funds will be returned either to the Disaster Relief Fund or the U.S. Treasury.

The program resulted in a lack of concrete results and a majority of funding being awarded to only a few states.

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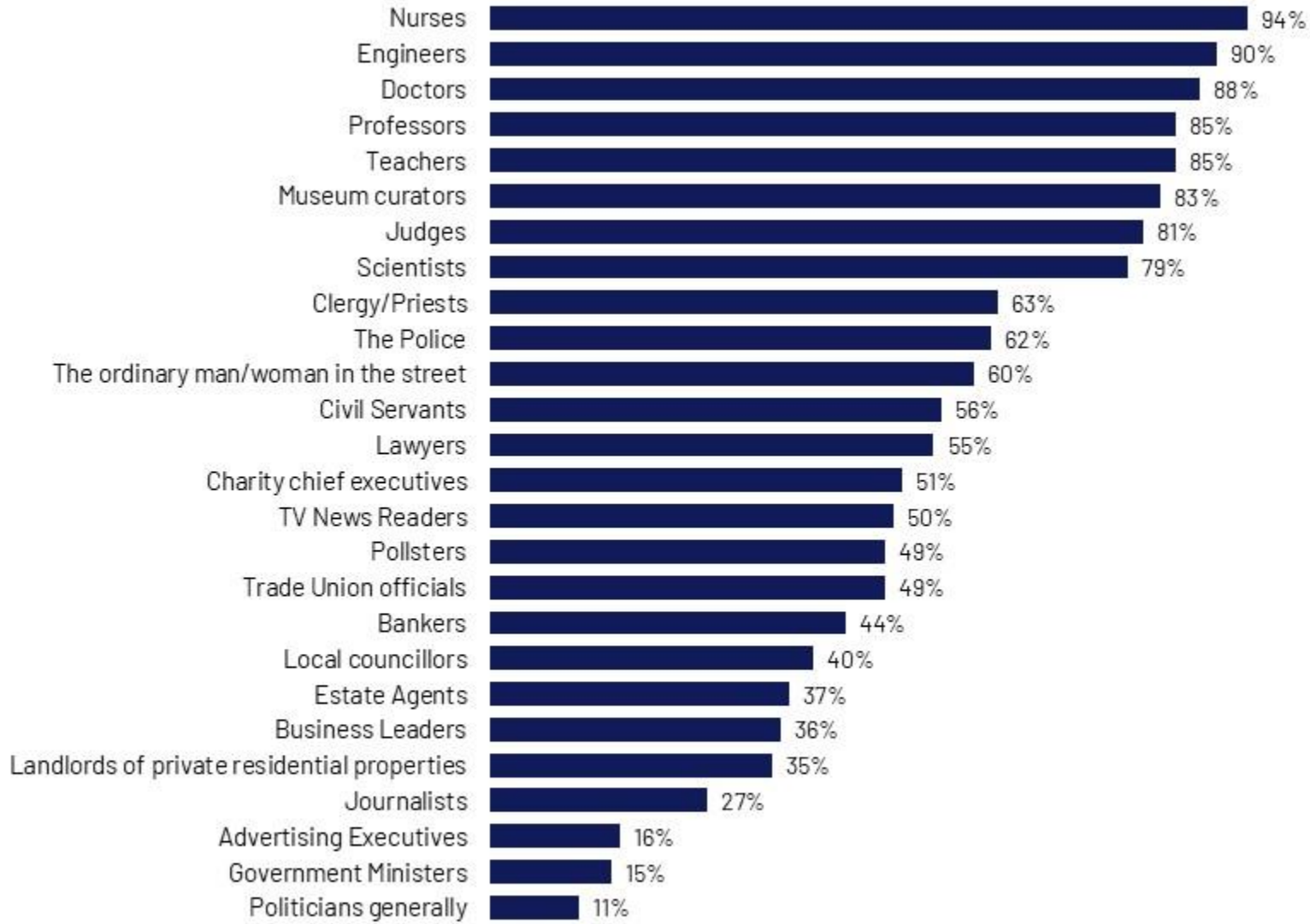
That does not change our ethical obligation to design for resilience.

Veracity Index 2024

All professions

"Now I will read you a list of different types of people. For each would you tell me if you generally trust them to tell the truth, or not?"

% trust to tell the truth



Base: 1,015 British adults aged 16+, interviewed by telephone 9 – 15 October 2024

We maintain the public's trust by protecting the public's interest through the design of our projects.

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Code of Ethics for Engineers

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

I. Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

II. Rules of Practice

1. Engineers shall hold paramount the safety, health, and welfare of the public.

a. If engineers' judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.
b. Engineers shall approve only those engineering documents that are in conformity with applicable standards.
c. Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except as authorized or required by law or this Code.
d. Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise.
e. Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
f. Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.

2. Engineers shall perform services only in the areas of their competence.

a. Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.
b. Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.
c. Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.

3. Engineers shall issue public statements only in an objective and truthful manner.

a. Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current.
b. Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
c. Engineers shall issue no statements, criticisms, or arguments on technical matters that are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineers may have in the matters.

4. Engineers shall act for each employer or client as faithful agents or trustees.

a. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
b. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.
c. Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.
d. Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.
e. Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.

5. Engineers shall avoid deceptive acts.

a. Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint venturers, or past accomplishments.
b. Engineers shall not offer, give, solicit, or receive, either directly or indirectly, any contribution to influence the award of a contract by public authority, or which may be reasonably construed by the public as having the effect or intent of influencing the awarding of a contract. They shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage, or brokerage fee in order to secure work, except to a bona fide employee or bona fide established commercial or marketing agencies retained by them.

III. Professional Obligations

1. Engineers shall be guided in all their relations by the highest standards of honesty and integrity.

a. Engineers shall acknowledge their errors and shall not distort or alter the facts.
b. Engineers shall advise their clients or employers when they believe a project will not be successful.
c. Engineers shall not accept outside employment to the detriment of their regular work or interest. Before accepting any outside engineering employment, they will notify their employers.
d. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.
f. Engineers shall treat all persons with dignity, respect, fairness, and without discrimination.

2. Engineers shall at all times strive to serve the public interest.

a. Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.
b. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.
c. Engineers are encouraged to extend public knowledge and appreciation of engineering and its achievements.
d. Engineers are encouraged to adhere to the principles of sustainable development[1] in order to protect the environment for future generations.
e. Engineers shall continue their professional development throughout their careers and should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminar.

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

3. Engineers shall avoid all conduct or practice that deceives the public.

a. Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.
b. Consistent with the foregoing, engineers may advertise for recruitment of personnel.
c. Consistent with the foregoing, engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.

4. Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve.

a. Engineers shall not, without the consent of all interested parties, promote or arrange for new employment or practice in connection with a specific project for which the engineer has gained particular and specialized knowledge.
b. Engineers shall not, without the consent of all interested parties, participate in or represent an adversary interest in connection with a specific project or proceeding in which the engineer has gained particular specialized knowledge on behalf of a former client or employer.

5. Engineers shall not be influenced in their professional duties by conflicting interests.

a. Engineers shall not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product.
b. Engineers shall not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with clients or employers of the engineer in connection with work for which the engineer is responsible.

6. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.

a. Engineers shall not request, propose, or accept a commission on a contingent basis under circumstances in which their judgment may be compromised.
b. Engineers in salaried positions shall accept part-time engineering work only to the extent consistent with policies of the employer and in accordance with ethical considerations.
c. Engineers shall not, without consent, use equipment, supplies, laboratory, or office facilities of an employer to carry on outside private practice.

7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.

a. Engineers in private practice shall not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.
b. Engineers in governmental, industrial, or educational employ are entitled to review and evaluate the work of other engineers when so required by their employment duties.
c. Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.

8. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the engineer's interests cannot otherwise be protected.

a. Engineers shall conform with state registration laws in the practice of engineering.
b. Engineers shall not use association with a nonengineer, a corporation, or partnership as a "cloak" for unethical acts.

9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.

a. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.
b. Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the engineer for others without express permission.
c. Engineers, before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights or patents, should enter into a positive agreement regarding ownership.
d. Engineers' designs, data, records, and notes referring exclusively to an employer's work are the employer's property. The employer should indemnify the engineer for use of the information for any purpose other than the original purpose.

Footnote 1 "Sustainable development" is the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste management while conserving and protecting environmental quality and the natural resource base essential for future development.

CODE of ETHICS

THE AMERICAN SOCIETY OF CIVIL ENGINEERS

As amended on October 26, 2020

PREAMBLE

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CODE OF ETHICS

1. SOCIETY

Engineers:

a. first and foremost, protect the health, safety, and welfare of the public;

b. enhance the quality of life for humanity;

c. express professional opinions truthfully and only when founded on adequate knowledge and honest conviction;

d. have zero tolerance for bribery, fraud, and corruption in all forms, and report violations to the proper authorities;

e. endeavor to be of service in civic affairs;

f. treat all persons with respect, dignity, and fairness, and reject all forms of discrimination and harassment;

g. acknowledge the diverse historical, social, and cultural needs of the community, and incorporate these considerations in their work;

h. consider the capabilities, limitations, and implications of current and emerging technologies when part of their work; and

i. report misconduct to the appropriate authorities where necessary to protect the health, safety, and welfare of the public.

2. NATURAL AND BUILT ENVIRONMENT

Engineers:

a. adhere to the principles of sustainable development;

b. consider and balance societal, environmental, and economic impacts, along with opportunities for improvement, in their work;

c. mitigate adverse societal, environmental, and economic effects; and

d. use resources wisely while minimizing resource depletion.

3. PROFESSION

Engineers:

a. uphold the honor, integrity, and dignity of the profession;

b. practice engineering in compliance with all legal requirements in the jurisdiction of practice;

c. represent their professional qualifications and experience truthfully;

d. reject practices of unfair competition;

e. promote mentorship and knowledge-sharing equitably with current and future engineers;

f. educate the public on the role of civil engineering in society; and

g. continue professional development to enhance their technical and non-technical competencies.

4. CLIENTS AND EMPLOYERS

Engineers:

a. act as faithful agents of their clients and employers with integrity and professionalism;

b. make clear to clients and employers any real, potential, or perceived conflicts of interest;

c. communicate in a timely manner to clients and employers any risks and limitations related to their work;

d. present clearly and promptly the consequences to clients and employers if their engineering judgment is overruled where health, safety, and welfare of the public may be endangered;

e. keep clients' and employers' identified proprietary information confidential;

f. perform services only in areas of their competence; and

g. approve, sign, or seal only work products that have been prepared or reviewed by them or under their responsible charge.

5. PEERS

Engineers:

a. only take credit for professional work they have personally completed;

b. provide attribution for the work of others;

c. foster health and safety in the workplace;

d. promote and exhibit inclusive, equitable, and ethical behavior in all engagements with colleagues;

e. act with honesty and fairness on collaborative work efforts;

f. encourage and enable the education and development of other engineers and prospective members of the profession;

g. supervise equitably and respectfully;

h. comment only in a professional manner on the work, professional reputation, and personal character of other engineers; and

i. report violations of the Code of Ethics to the American Society of Civil Engineers.


☑ Ethics - 1 hr.

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CIVIL & ENVIRONMENTAL ENGINEERING

Questions?