

Building Scenarios for Resiliency

③
Valley
entering
5th yr
of major
f looding

④
Indian
Point
meets
Down

Fe
rele
\$B
C
C

Supply chain interruptions

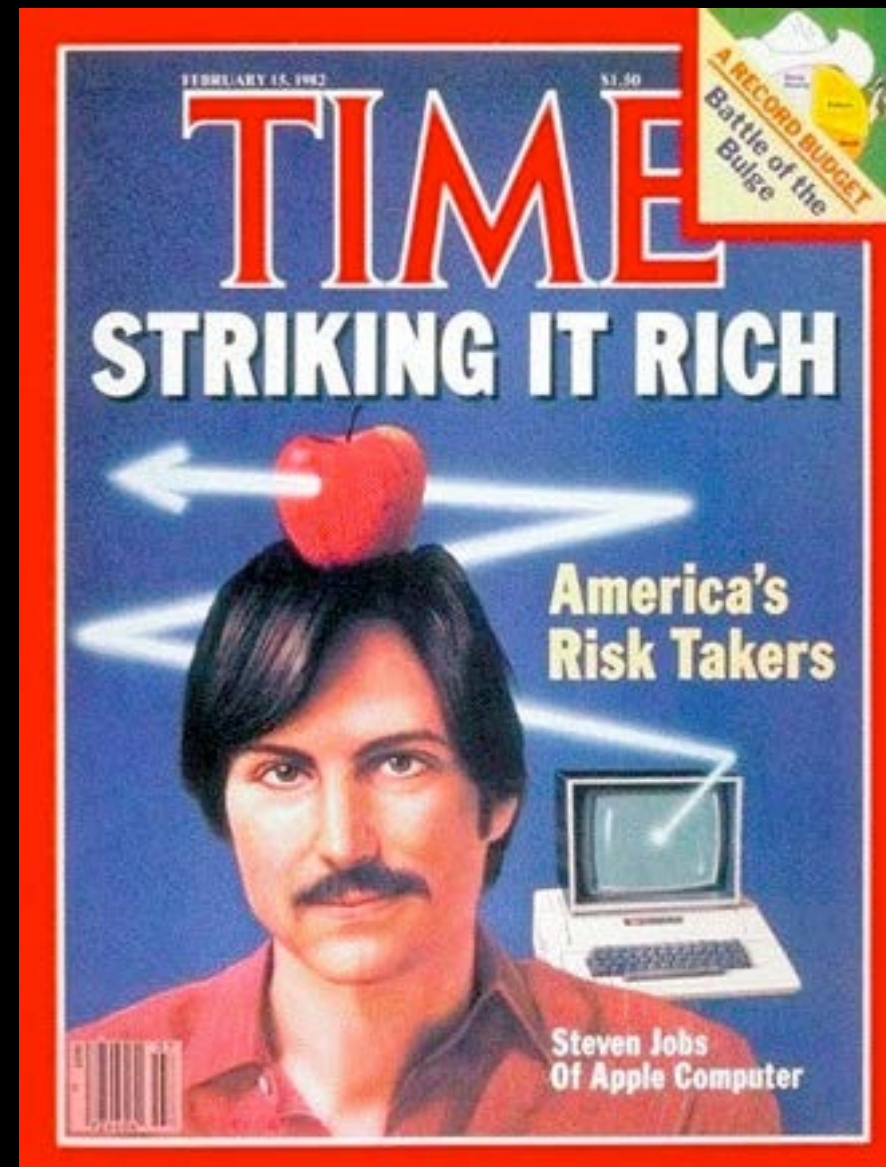
2 better alternative
outreach is
is event

TIME

Extreme Weather Events: 1980-2014



From 1980-1989



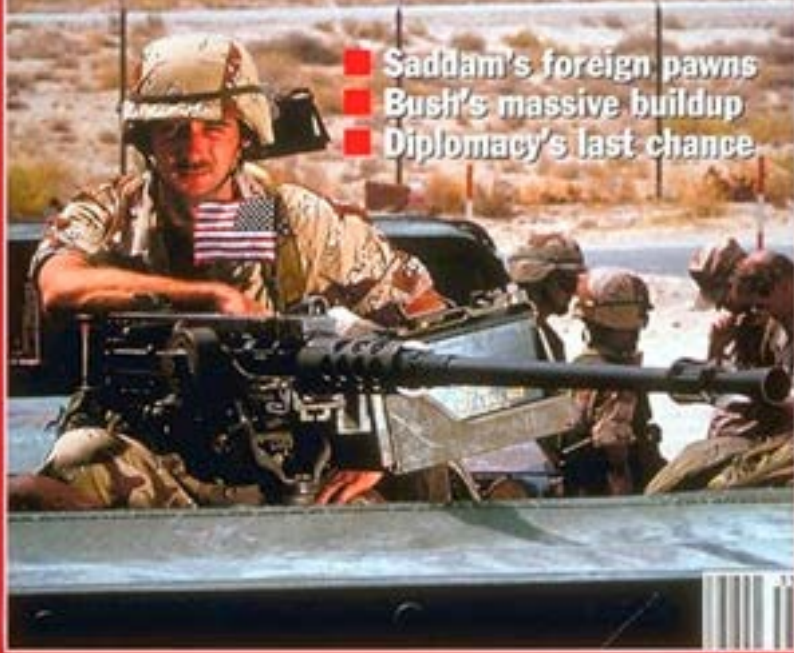
27 extreme weather events costing
over \$1 billion

PRISONER IN LEBANON: A Former Hostage Speaks Out

TIME

Talk of War

- Saddam's foreign pawns
- Bush's massive buildup
- Diplomacy's last chance



From 1990 - 1999

FASHION MAGS: DIRTY LAUNDRY



Master Of the Universe

Having conquered the world's computers, **BILL GATES** takes aim at banks, phone companies, even Hollywood. He's in for the fight of his life.

48 extreme events over \$1 billion



THE END OF THE WORLD!?!?
Y2K insanity! Apocalypse Now! Will computers melt down? Will society? A guide to **MILLENNIUM MADNESS**



From 2000 to 2009



54 extreme events over \$1 billion

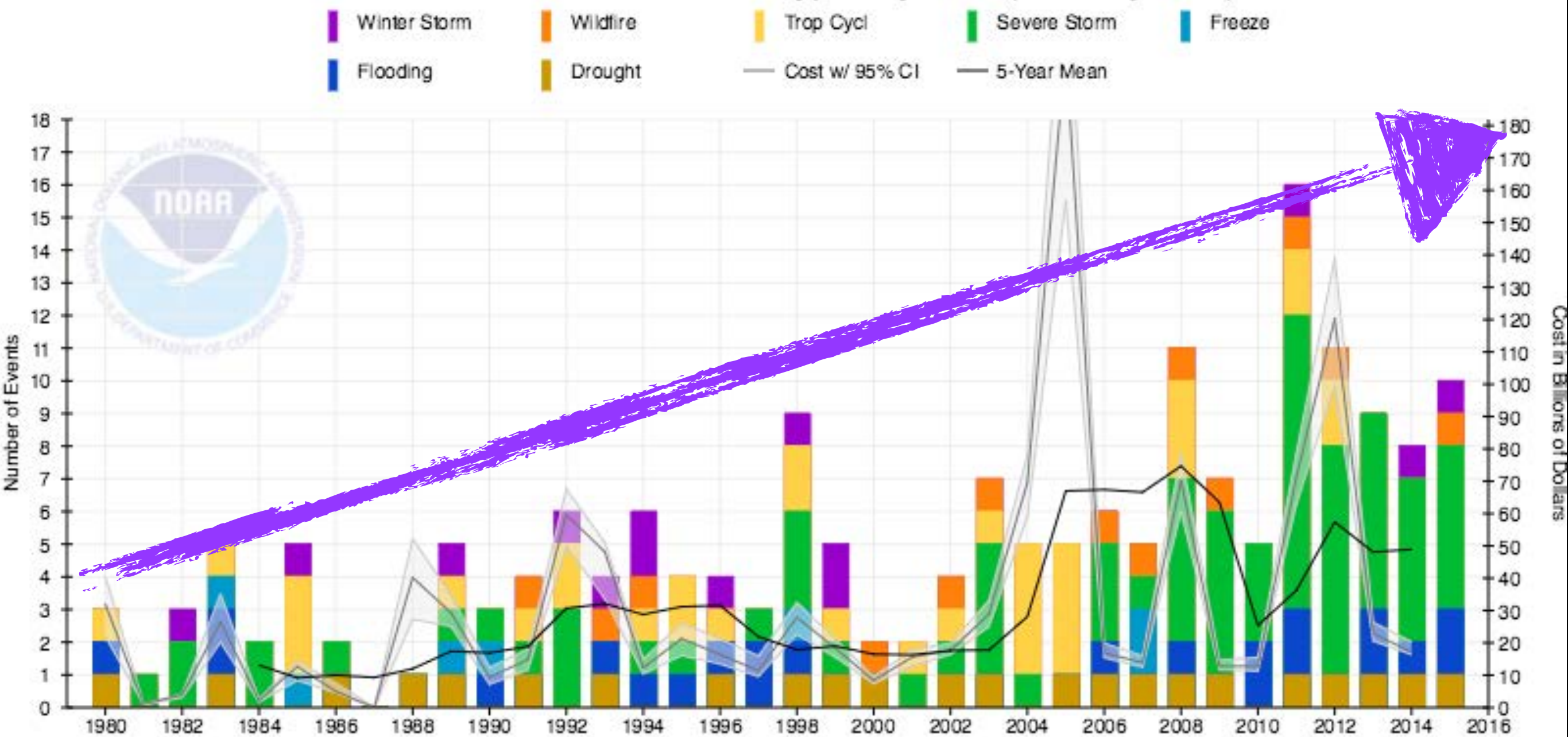


From 2010 to 2015



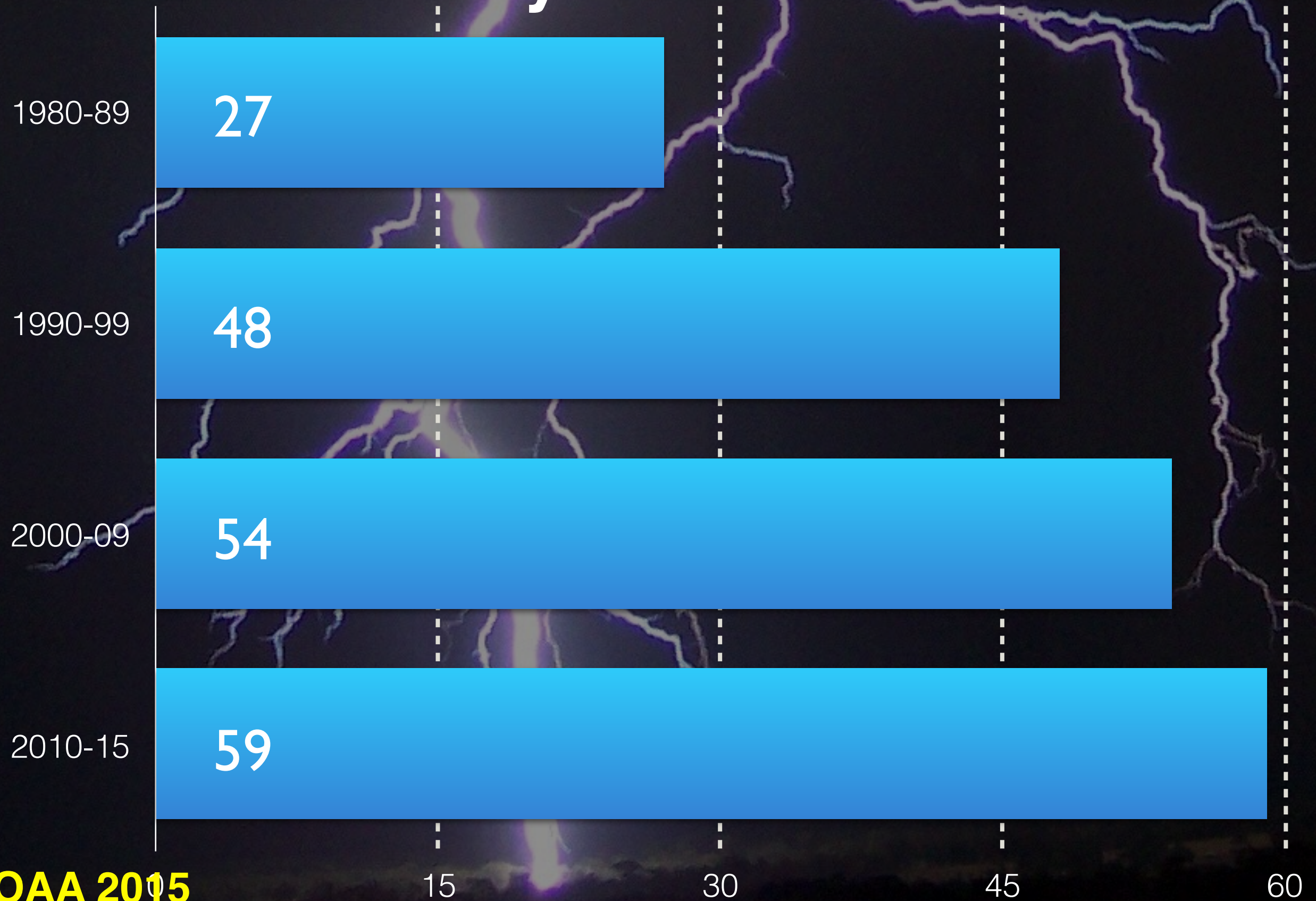
59 extreme events over \$1 billion

Billion-Dollar Disaster Event Types by Year (CPI-Adjusted)



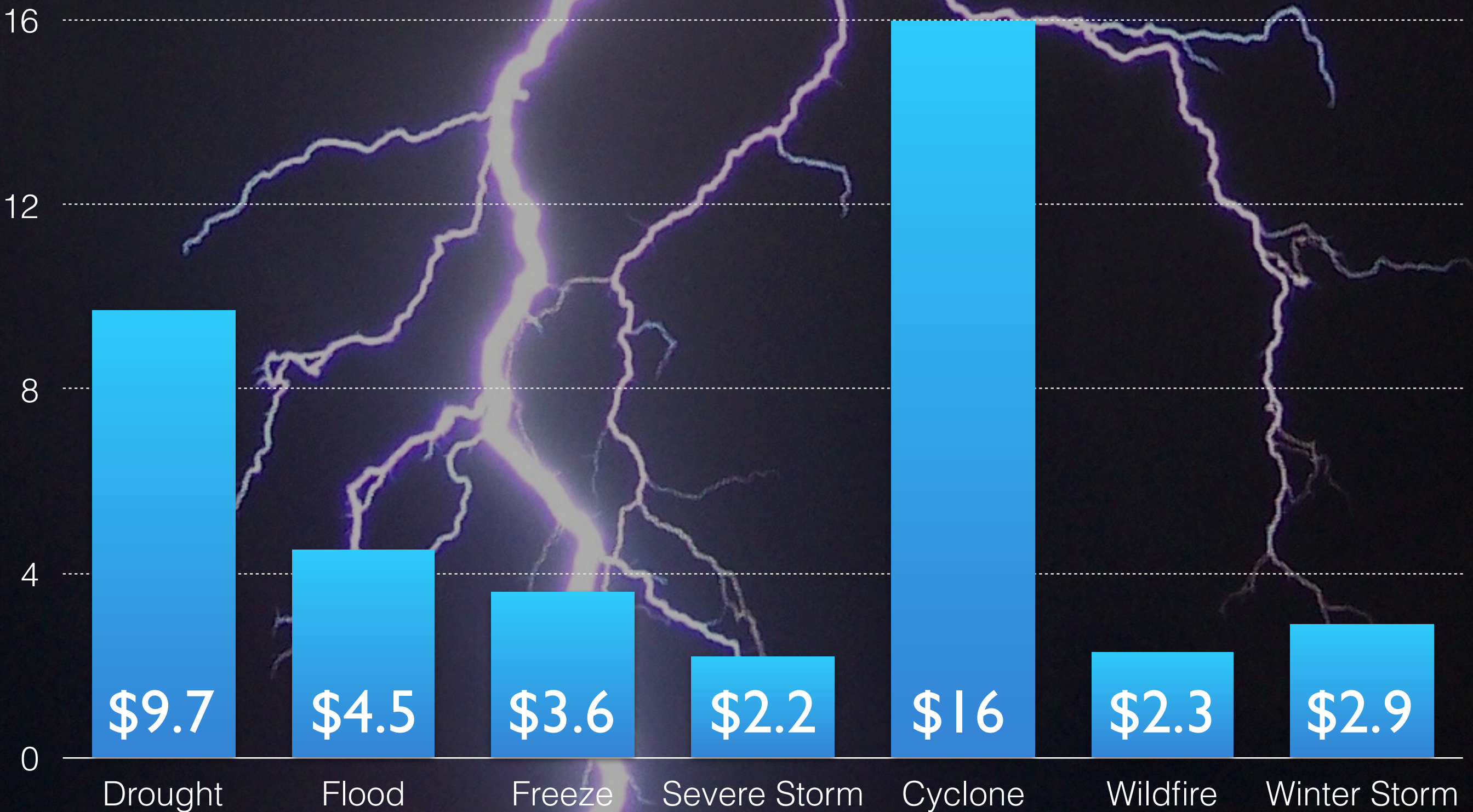
NOAA 2015

Extreme Weather Events Over \$1 Billion by Decade



Extreme Weather Cost Per Event

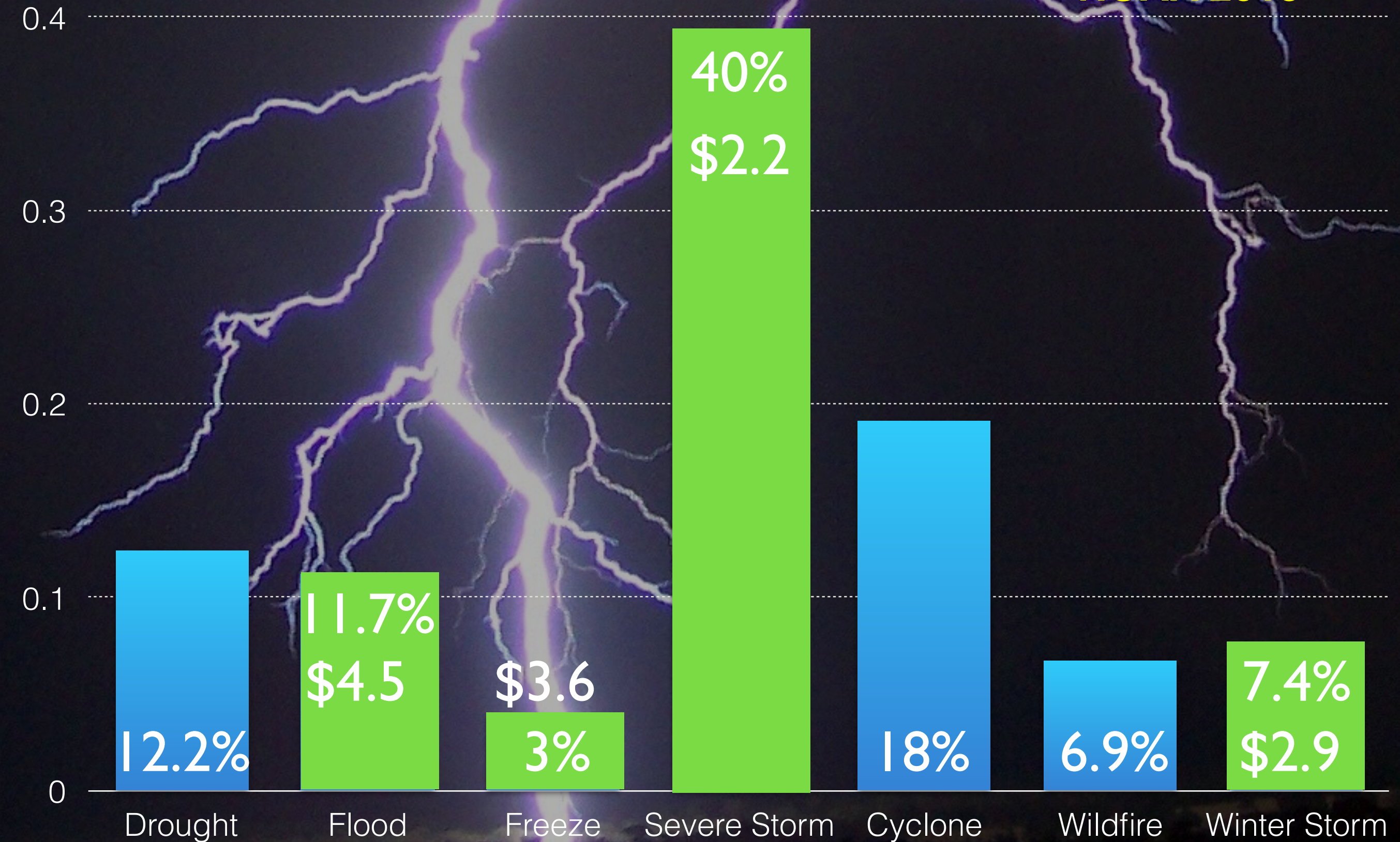
(In \$Billions - CPI adjusted through 2014)



NOAA 2015

Extreme Weather Events: Frequency

NOAA 2015



3 \$Billion Floods

1980-2015 Extreme
Weather Events in NY
State

1 \$Billion Freeze

15 \$Billion Severe Storms

13 \$Billion Winter Storms
(More than any other state)

7

0

3

0

36

When we think about the future....



Tornado: Smithfield, NY



Flood: Rensselaer, NY



Snow Storm: East Aurora, NY

But do we think about...



Resiliency doesn't just mean coping
with disaster

Some Projections for the Future...

Nationally agricultural production will increase by 4%
... but not everywhere



Few eastern ski resorts
will be economically
viable beyond the next
century





Warming Adirondack lakes threaten trout survival

Uncertainty

How can we understand the
potential impacts on our
community?



Complexity

A graphic consisting of five concentric circles centered on a black background. The circles are colored in a gradient from light pink at the center to dark brown at the outer edge. The word "PESTLE" is written in white, bold, uppercase letters across the center of the circles.

PESTLE

An aerial photograph showing a stark contrast between a well-maintained residential neighborhood on the left and a completely destroyed area on the right. The left side features numerous houses with intact roofs and walls, while the right side is a vast field of rubble, debris, and charred remains of structures. The text 'Future is unknowable' is overlaid in white on the destroyed area.

Future is
unknowable

But it will impact us

Political

Environmental

Social

Technological

Economic

Legal/Regulatory

PESTEL

Opportunities & Threats

Stakeholders and Allies

Strategic and Resilience
Planning



Helpful
to achieving the objective

Harmful
to achieving the objective

Internal origin
(attributes of the organization)

S
Strengths

W
Weaknesses

External origin
(attributes of the environment)

O
Opportunities

T
Threats

T
H
O P P O R T U N I T Y
E
A
T

Political







Environmental

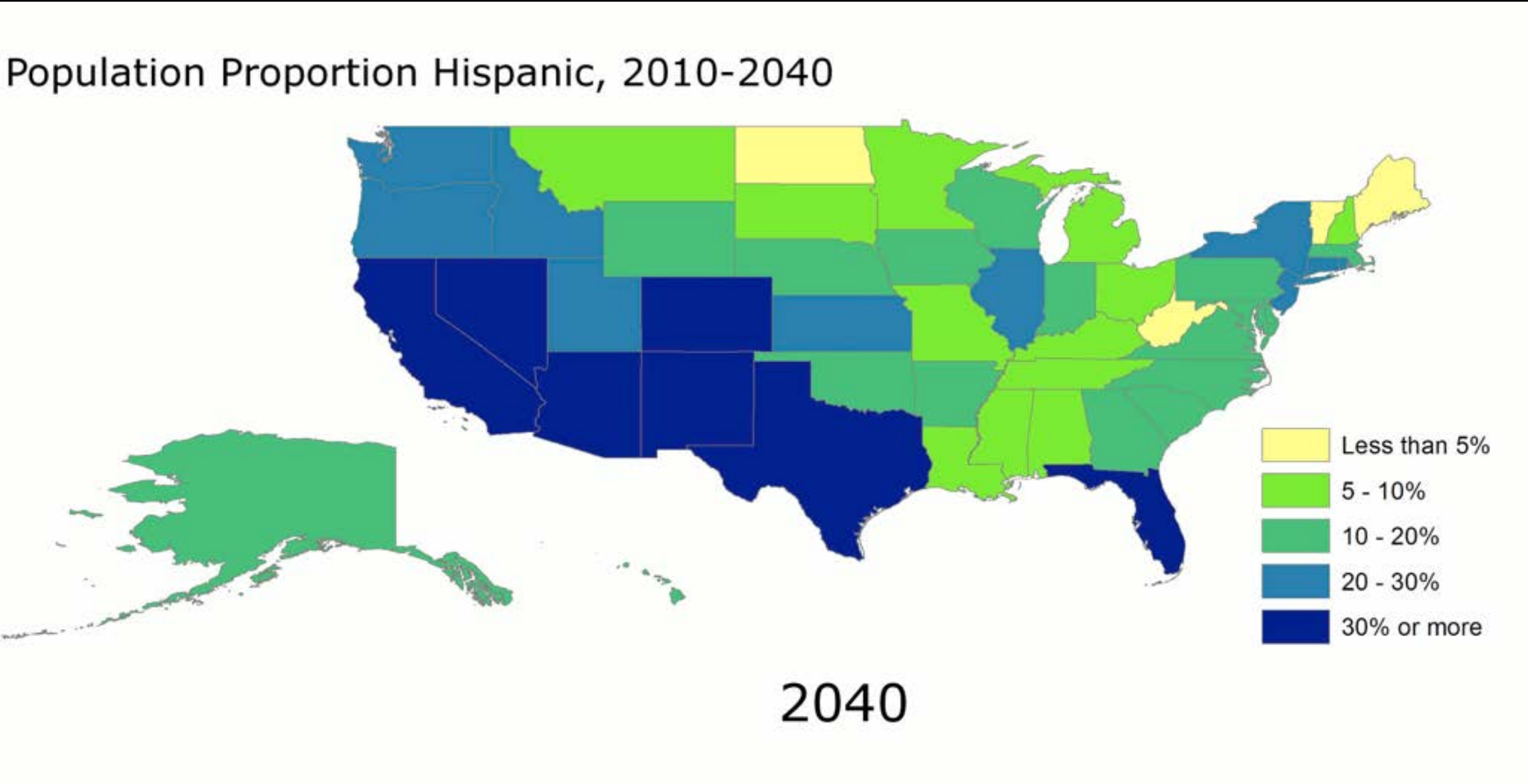
SOCIAL

Population Proportion Hispanic, 2010-2040

2040

Legend:

- Less than 5%
- 5 - 10%
- 10 - 20%
- 20 - 30%
- 30% or more



Population Proportion Hispanic, 2010-2040

2040

Legend:

- Less than 5%
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- 30% or more



A small black drone with four rotors is flying over a body of water. It is carrying three large, spherical floats: two green and one red. A thin, light-colored rope is attached to the red float and extends vertically down into the water, where it is creating a splash. The background shows a sandy shoreline with some driftwood and a wooden pier structure in the distance.

Technological



Economic



Department of Environmental Conservation



Legal/Regulatory

Political

Environmental

Social

Technological

Economic

Legal/Regulatory

Use **PESTEL** to
Develop Planning
Scenarios

April 2026



P

Incumbent Mayor Looses Election

E

Congress Cuts USEPA Budget 50%

Giardia Outbreak Curbs Tourism

Warmer Winters Increase Ag Production

S

10 Years of Drought

Population Doubles in 1 Year

T

Cheap Solar Changes the Grid

Fracking Arrives

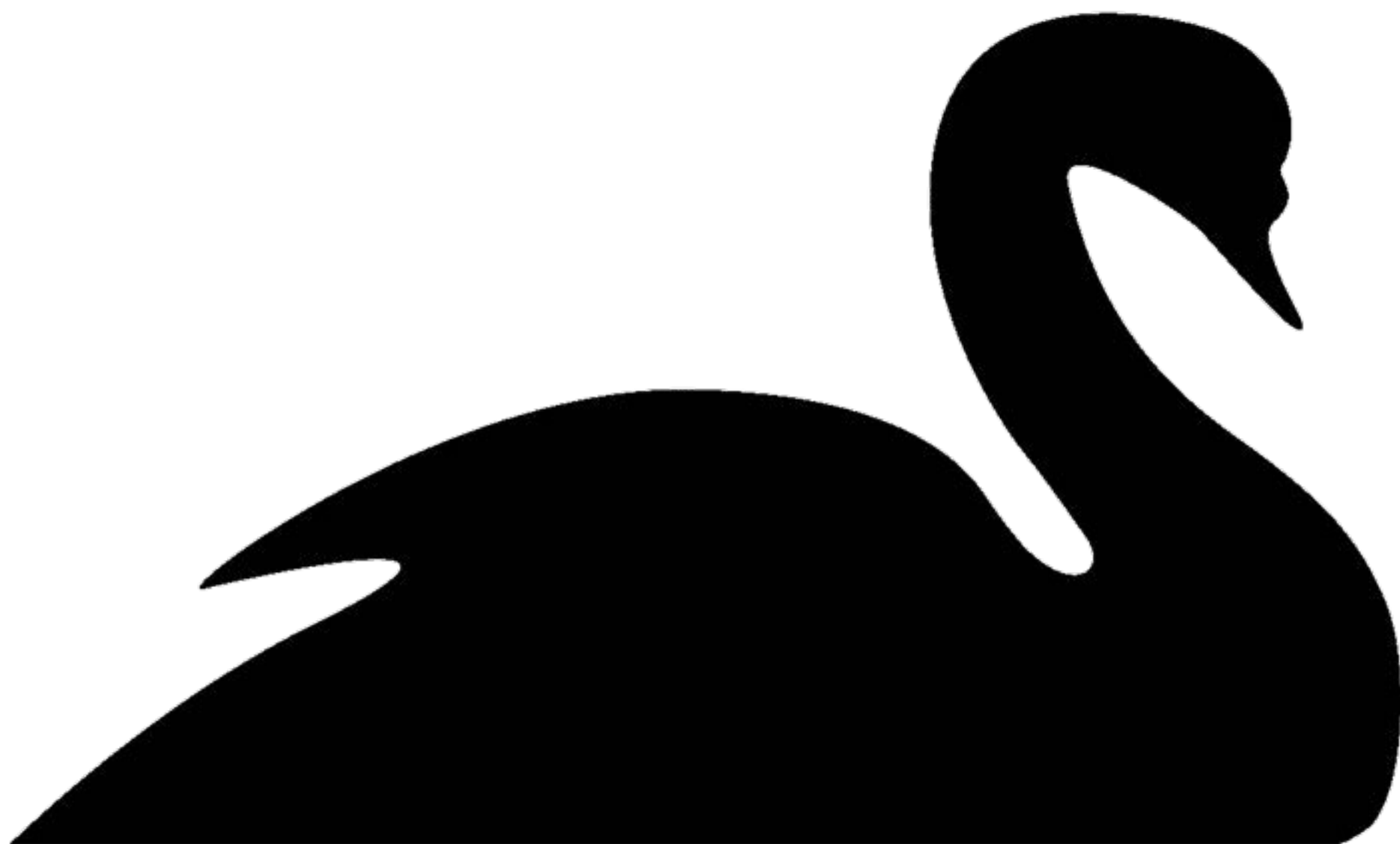
E

Recession!

New Casino/Resort Opens

L

New Contaminant Regulations Approved



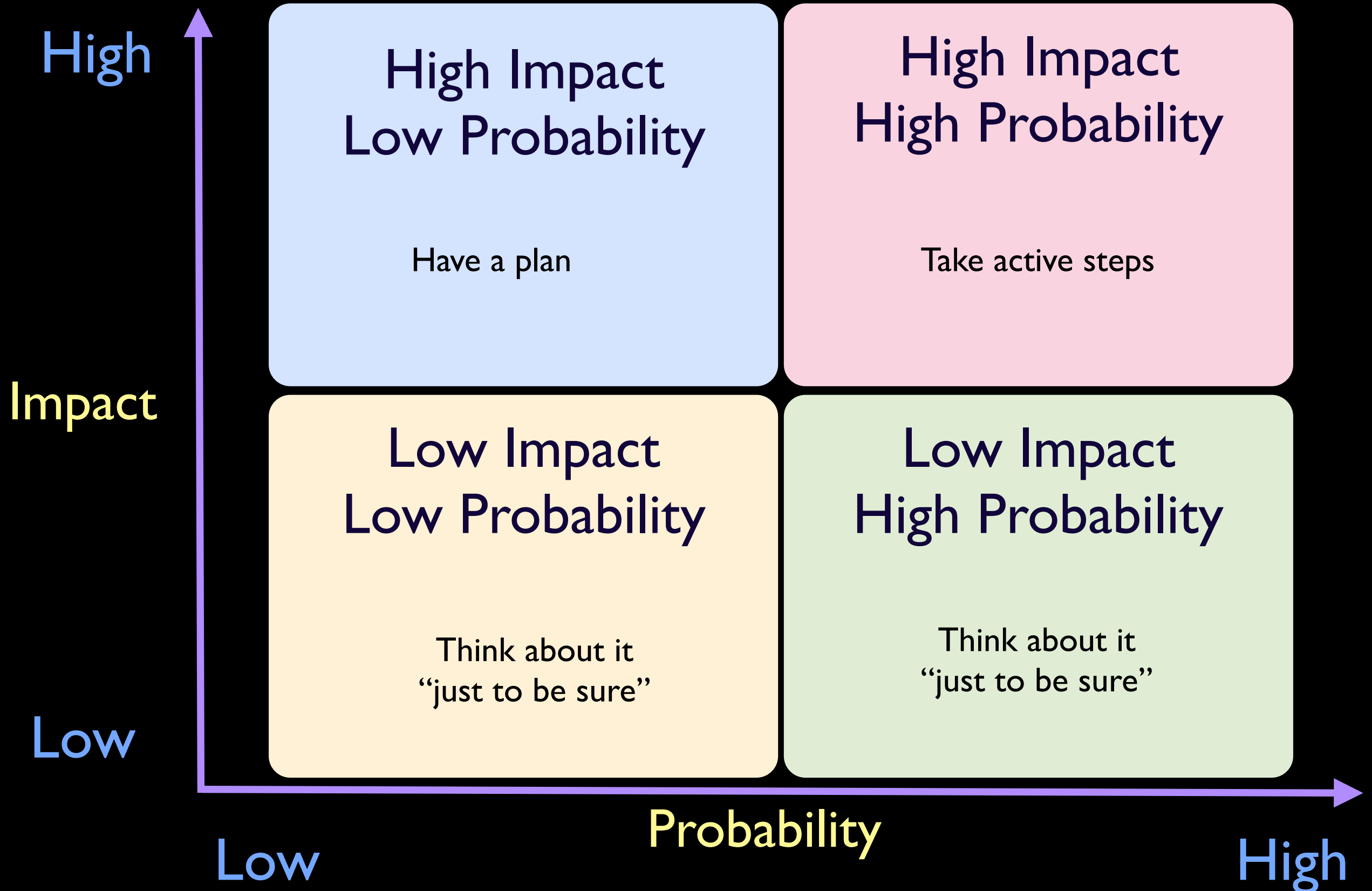
Black Swans

ultrad.com.br





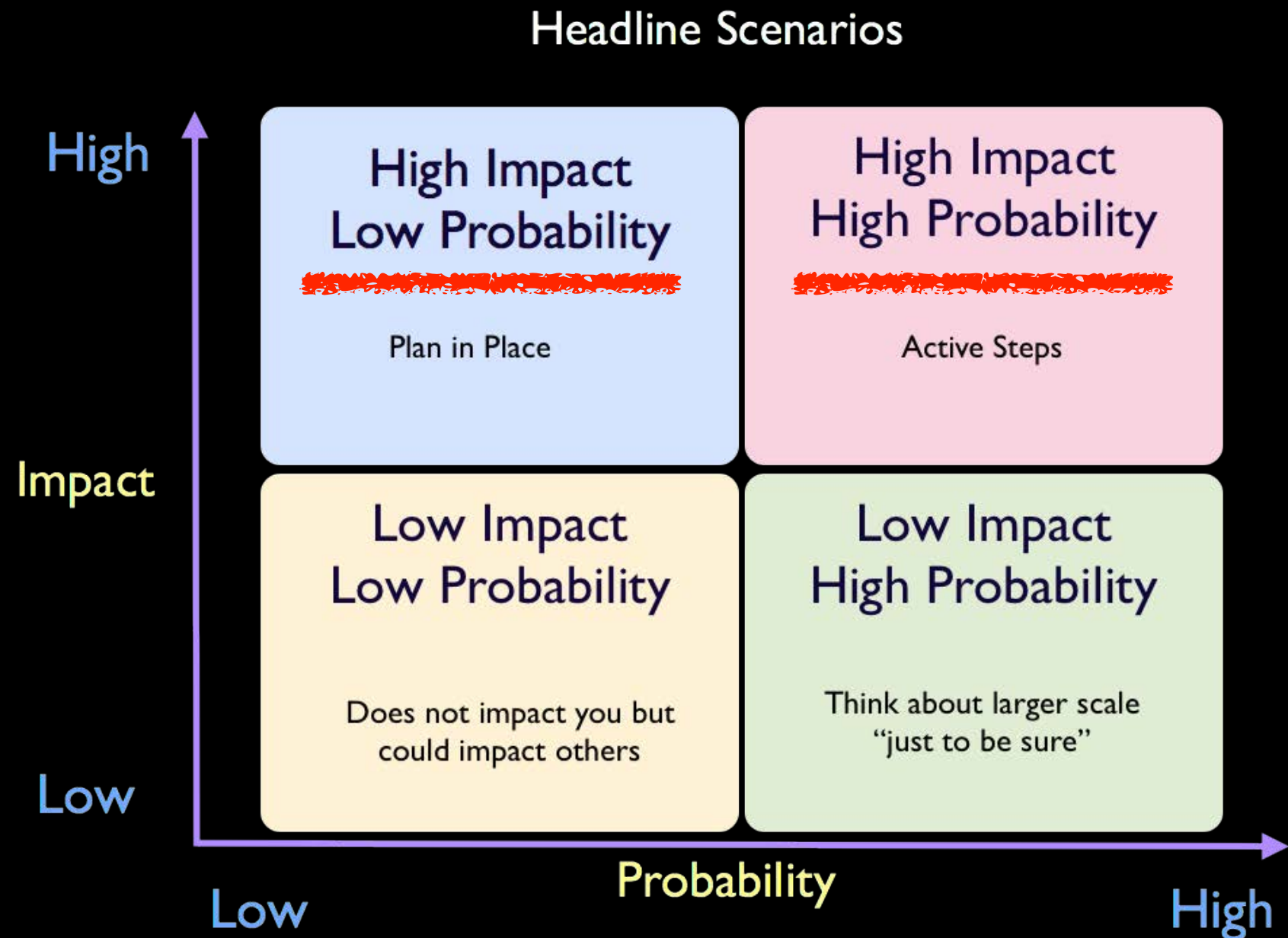
Headline Scenarios

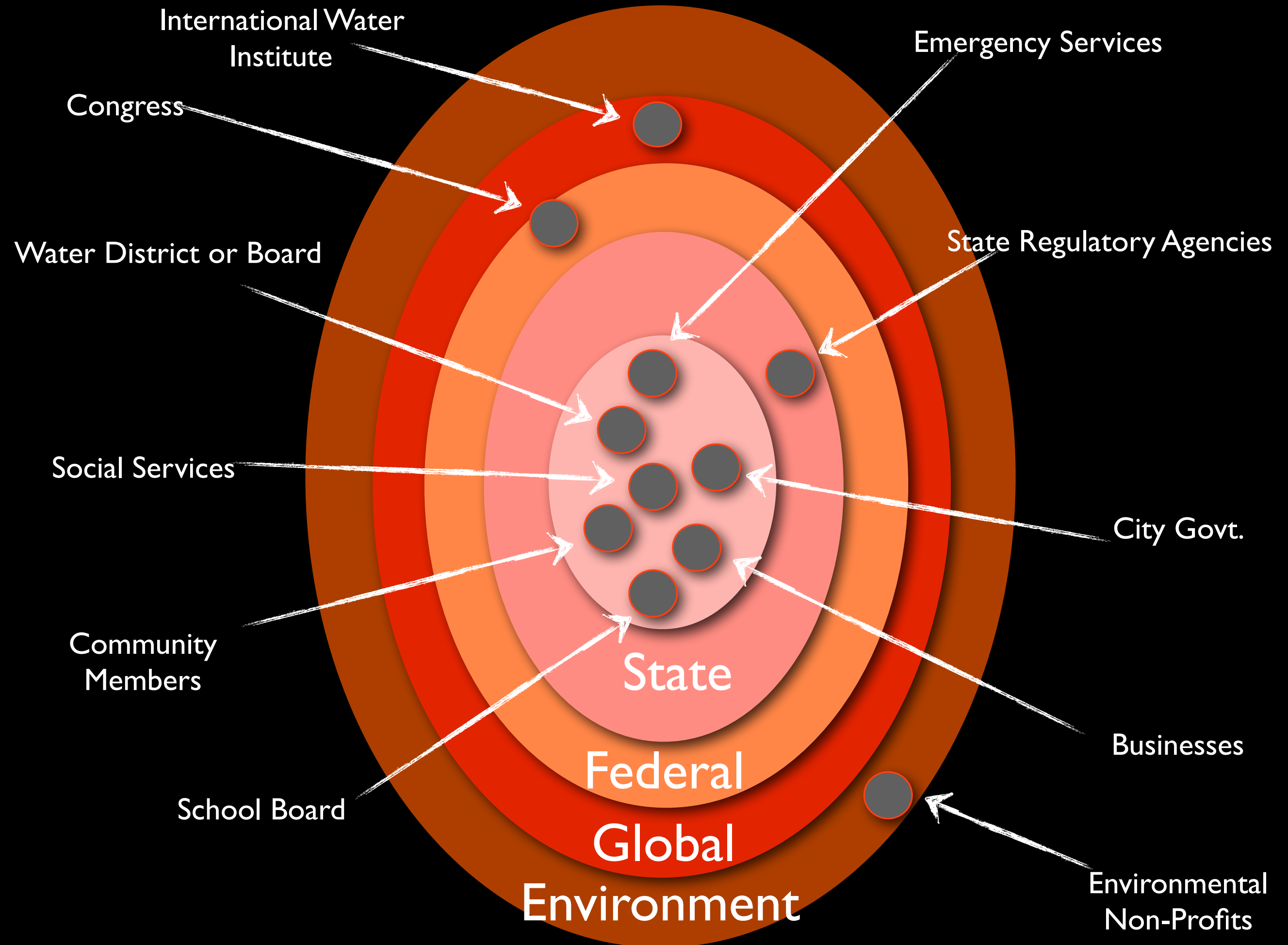


Stakeholders

and

Allies





Environmental

Stormwater
management
Conference in
London

Environmental

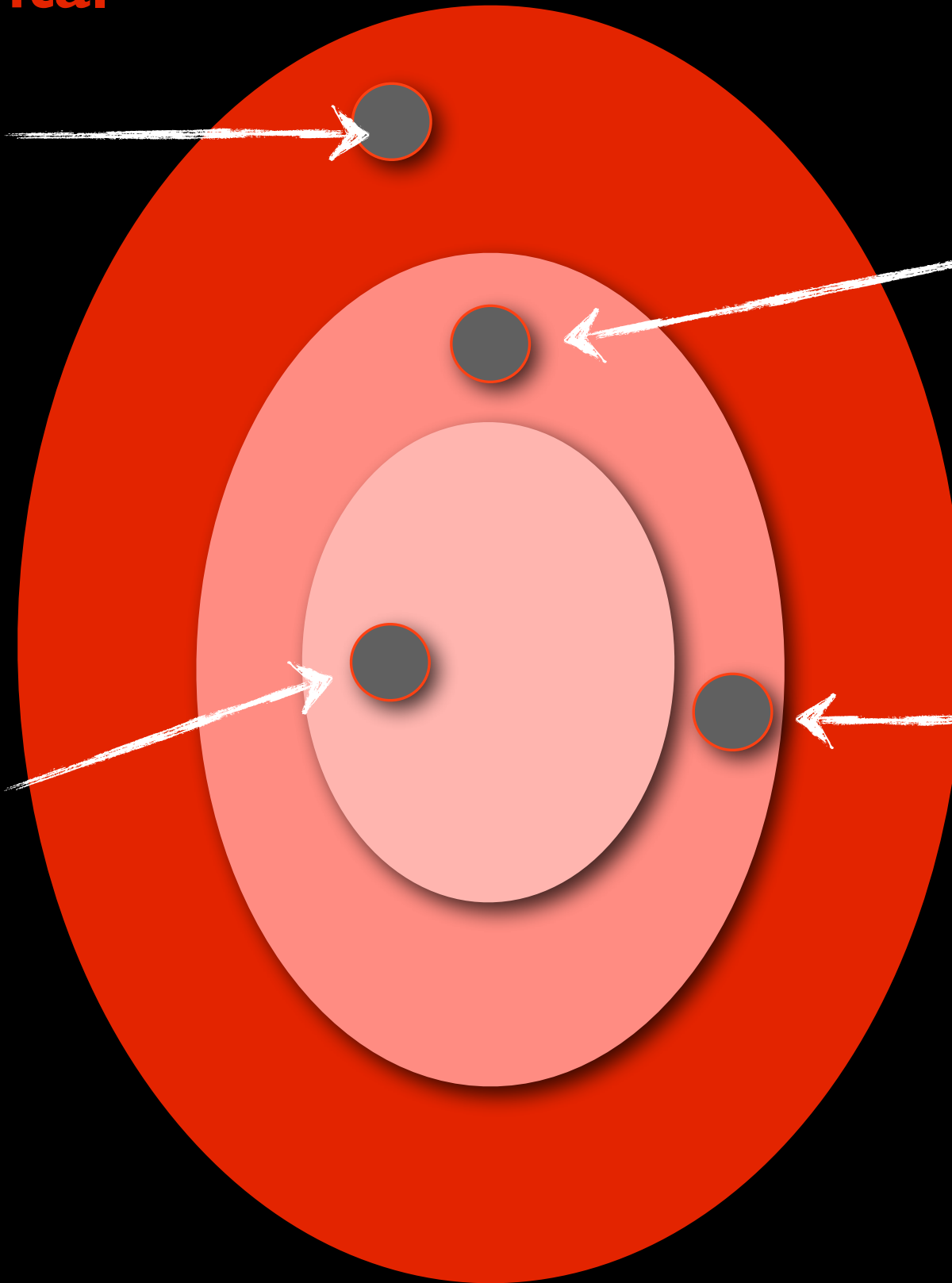
State University
Floodwater
Experts

Political

City Government

Banks,
FEMA

Economic



100 yr floods projected to increase to every 10 years

PESTEL

Social

Work with
community over
water
contamination
concerns

Legal

Coordinate w/
USEPA

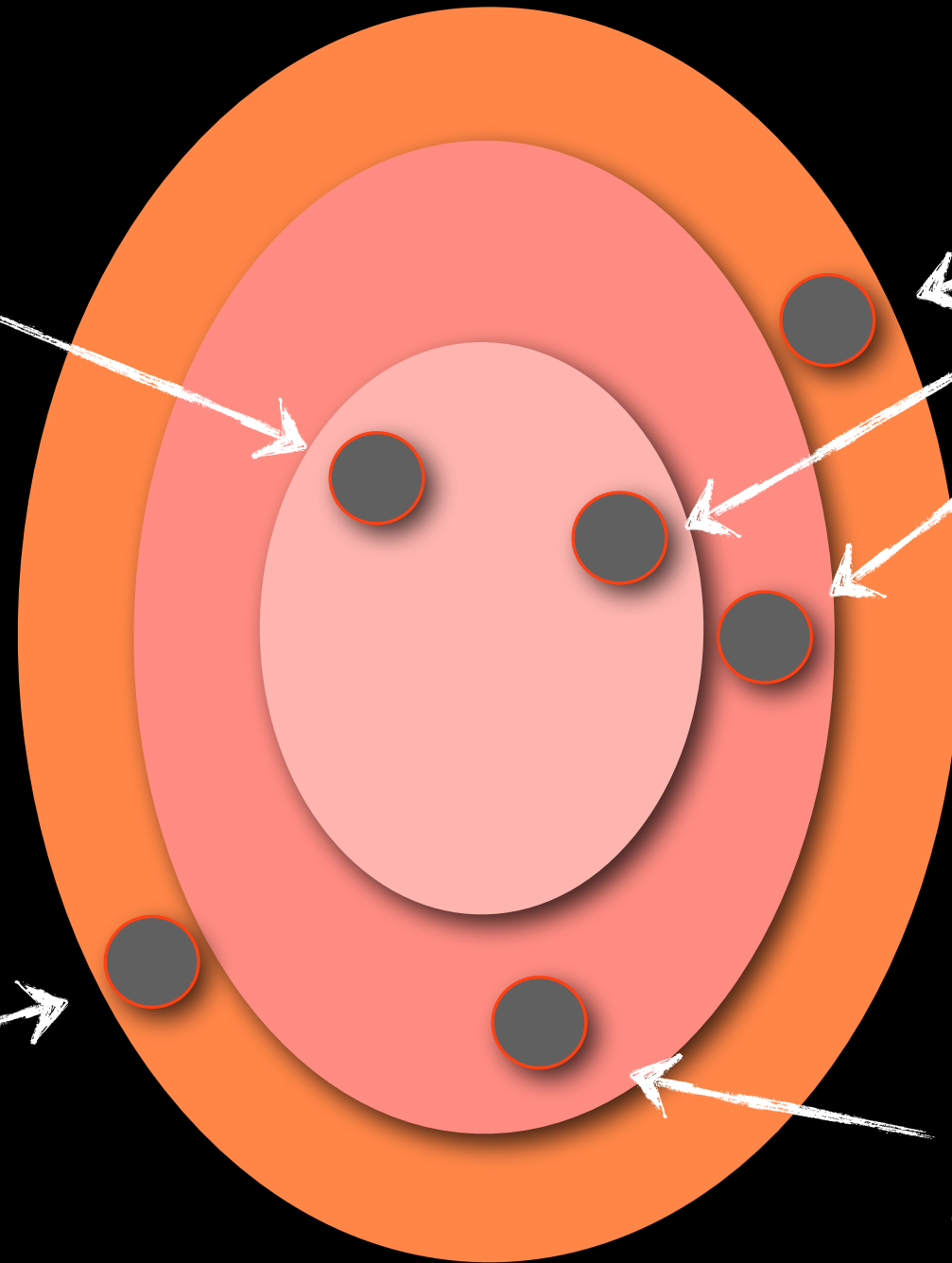
Economic

Hire new
employees

Legal

Coordinate with
State Water Agency

Fracking boom

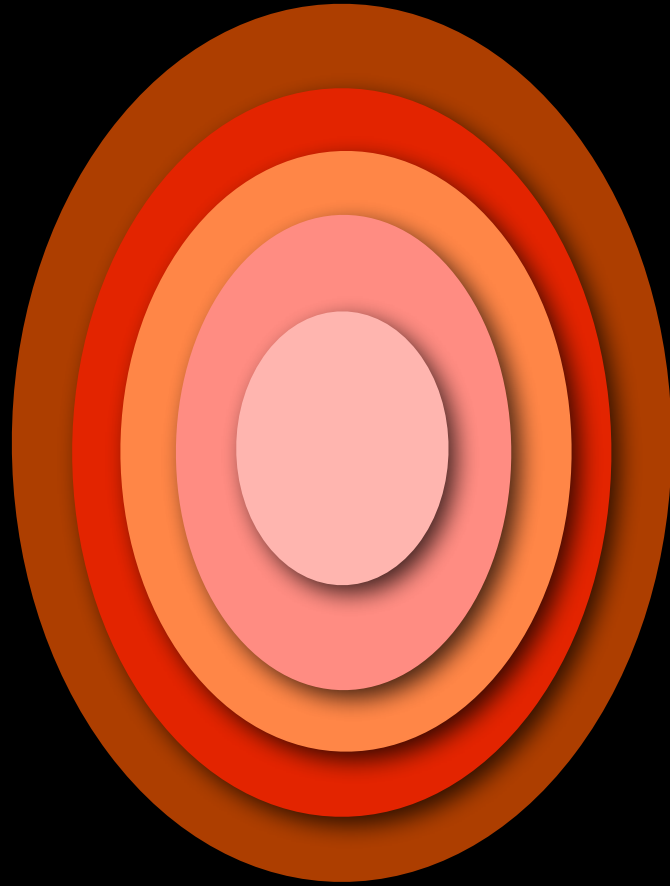


Team Activity

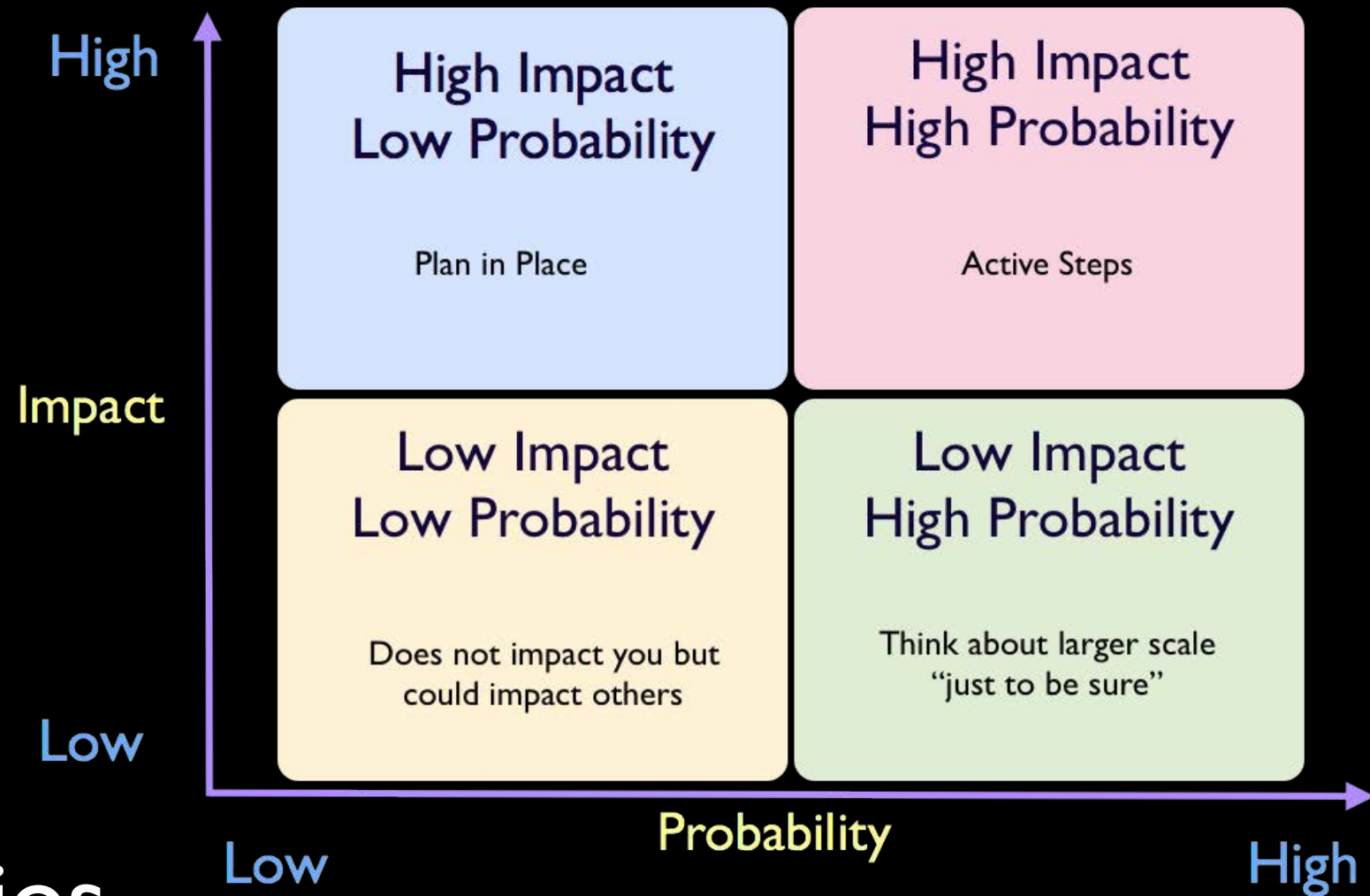


I. Develop at least 2 scenarios for:

(P)
(E)
(S)
(T)
(E)
(L)



Headline Scenarios



2. Prioritize all scenarios

3. Identify stakeholders for each scenario



Test Your S Against Future Scenarios

Your Scenarios (Headlines)

	P	E	S	T	E	L
2026	2% Tax on Water Bills Creates new Statewide Water Agency	Bark Beetle Crashes Lumber Industry	Increase in Ag Production Brings Huge Influx of Farmworkers to Community	Desalination Technology Becomes Cheap and Easy	Cyber Attack Cuts Internet Access for 2 Months	Water System is Privatized
Mayor's Office						
Utilities						
Community Residents	Your stakeholders in the room					
Businesses						
Emergency Services						

2026	P	P	S	E	E	L
Mayor's Office						
Utilities						
Community Residents						
Businesses						
Emergency Services						

You may not need
to test a full
PESTEL

What does your community look like under various futures?

(Political)

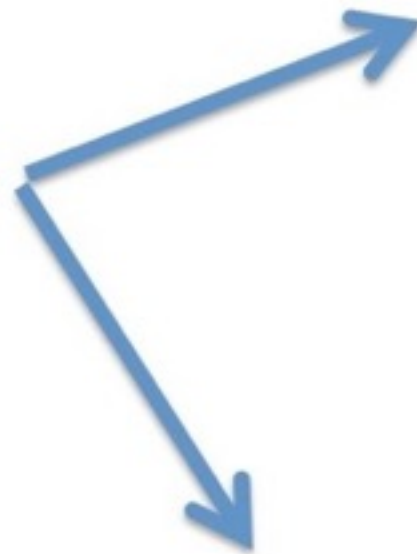
New
administration in
government

(Environmental)

Bark Beetle crashes
lumber industry

(Social)

Huge influx of
non-english
speaking immigrants
moves to your
community



2020	State agrees to 100% increase in wheat, corn & soy exports to China (Political)	Region entering 5 th year of drought (Environmental)	Due to China deal, Nebraska sees huge influx of immigrant farm workers (Social)	Antibiotics become ineffective for livestock use (Technological)	Commodity prices reach highest level in history (Economic)	EPA creates Water Rate Cap rule - no more than 1% of household income (Legal)	Resilient!
Water System							
Emergency Services							
Social Services							
State DEQ							
Schools							

2020	State agrees to 100% increase in commodity exports to China (Political)	
Water System	<div>Agricultural demand for increased water is stressing system's old pipes</div> <div>New farm labor moving to area, creates new housing & new water hookups</div>	<div>Water system will need at least three new employees</div> <div>Higher levels of pesticide/fertilizer in agricultural runoff impacts water quality</div>

Resilient?

The ability of a community to **grow, resist, absorb, respond** and/or **recover** in a timely and efficient manner, preserving or restoring its essential basic structures, functions and identity.

Political

Environmental

Social

Technological

Economic

Legal/Regulatory

Develop two
scenarios for
each
element of
PESTEL

Headline Scenarios

