



CLIMATE

What the National Climate Assessment Means for Business

June 20, 2019

EROSION

FLOOD



Benefits of NAEM Community

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Actionable Strategies that Empower Corporate
EHS&S Leaders to Make an Impact



A diverse community for EHS&S leaders



Today's Speakers



Van Hilderbrand, Jr.,
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Senior Director, EH&S
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Stanley Black & Decker
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Principal
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Nick Kell,
Emergency
Preparedness Project
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Ball Aerospace

Have a question?

**Type it into the
chat box in the
lower right-hand
corner.**



FOURTH NATIONAL CLIMATE ASSESSMENT – BUSINESS IMPLICATIONS



June 20, 2019



Firm Overview

Miles & Stockbridge P.C. is a leading law firm with offices in the mid-Atlantic region, including offices in Baltimore, Virginia and Washington, D.C. Its lawyers help global, national, local and emerging business clients preserve and create value by helping them solve their most challenging problems.

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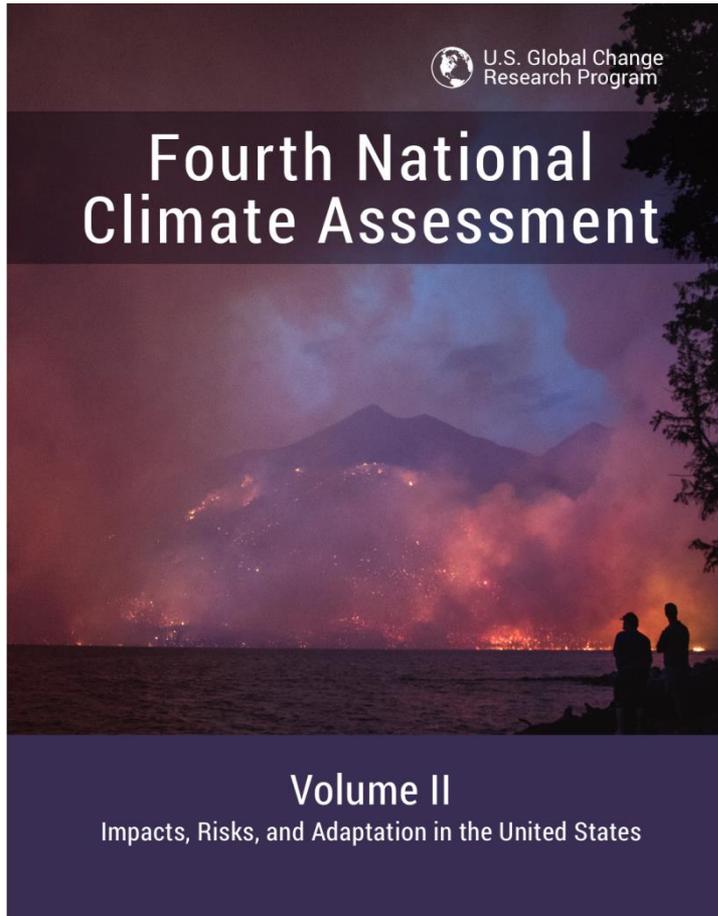
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Fourth National Climate Assessment



- **1,500 page report by the U.S. Global Change Research Program released on 11/23/2018**
- **Covers 16 national topic chapters**
- **10 regional chapters**
- **2 chapters on mitigation & adaptation**
- **12 Summary Findings Addressing**
 - Communities
 - **Economy**
 - Interconnected Impacts
 - Actions to Reduce Risks
 - Water
 - Health
 - Indigenous Peoples
 - Ecosystems & Ecosystem Services
 - Agriculture & Food
 - Infrastructure
 - Oceans & Coasts
 - Tourism & Recreation

2nd Summary Finding on Economy

“Without substantial and sustained global mitigation and regional adaptation efforts, climate change is expected to cause growing losses to American infrastructure and property and impede the rate of economic growth over this century.”

Predicts that rising temperatures, sea level rise and changes in extreme events are expected to disrupt and damage ---

- Critical Infrastructure
- Property
- Labor productivity
- Vitality of Communities
- Regional Economies and industries dependent on natural resources and favorable climate conditions, such as agriculture, tourism and fisheries
- Reduced efficiency of power generations with increasing energy demands and higher utility costs



Billion-Dollar Weather and Climate Disaster Events

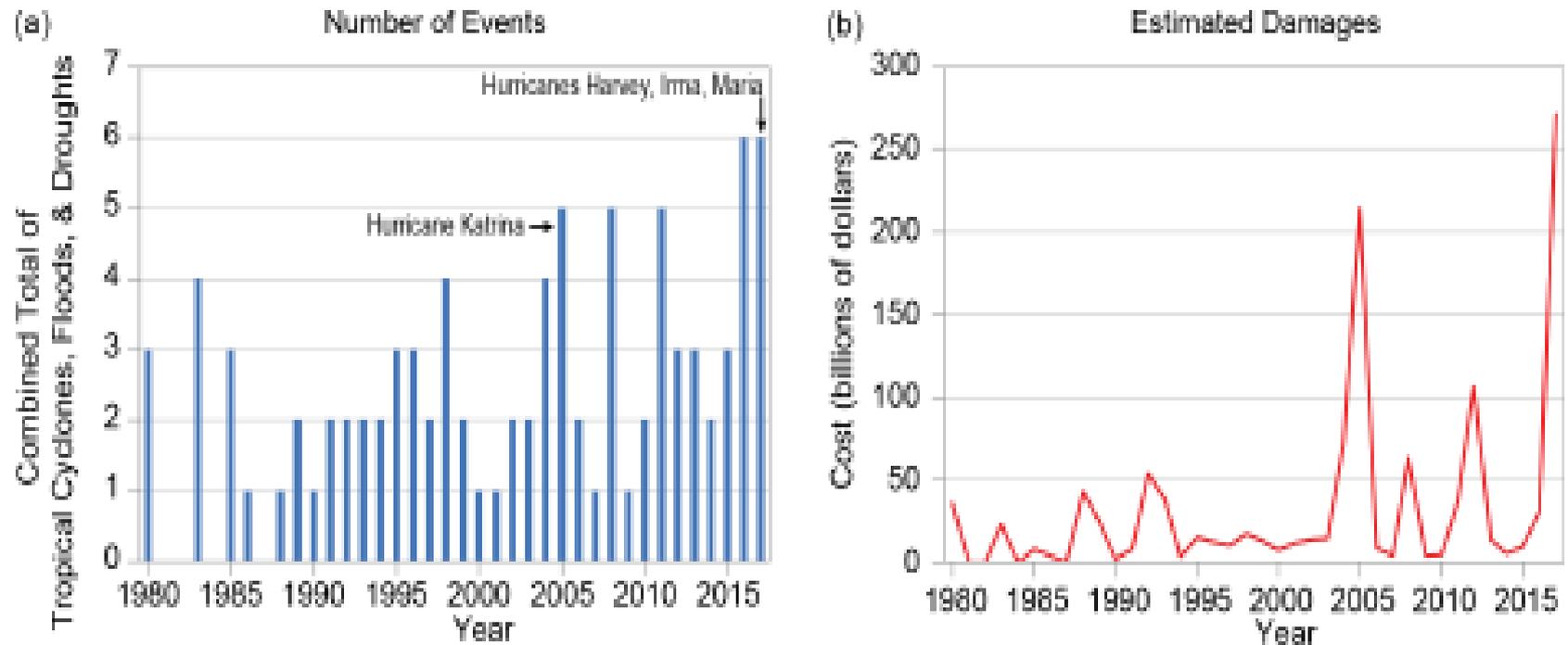
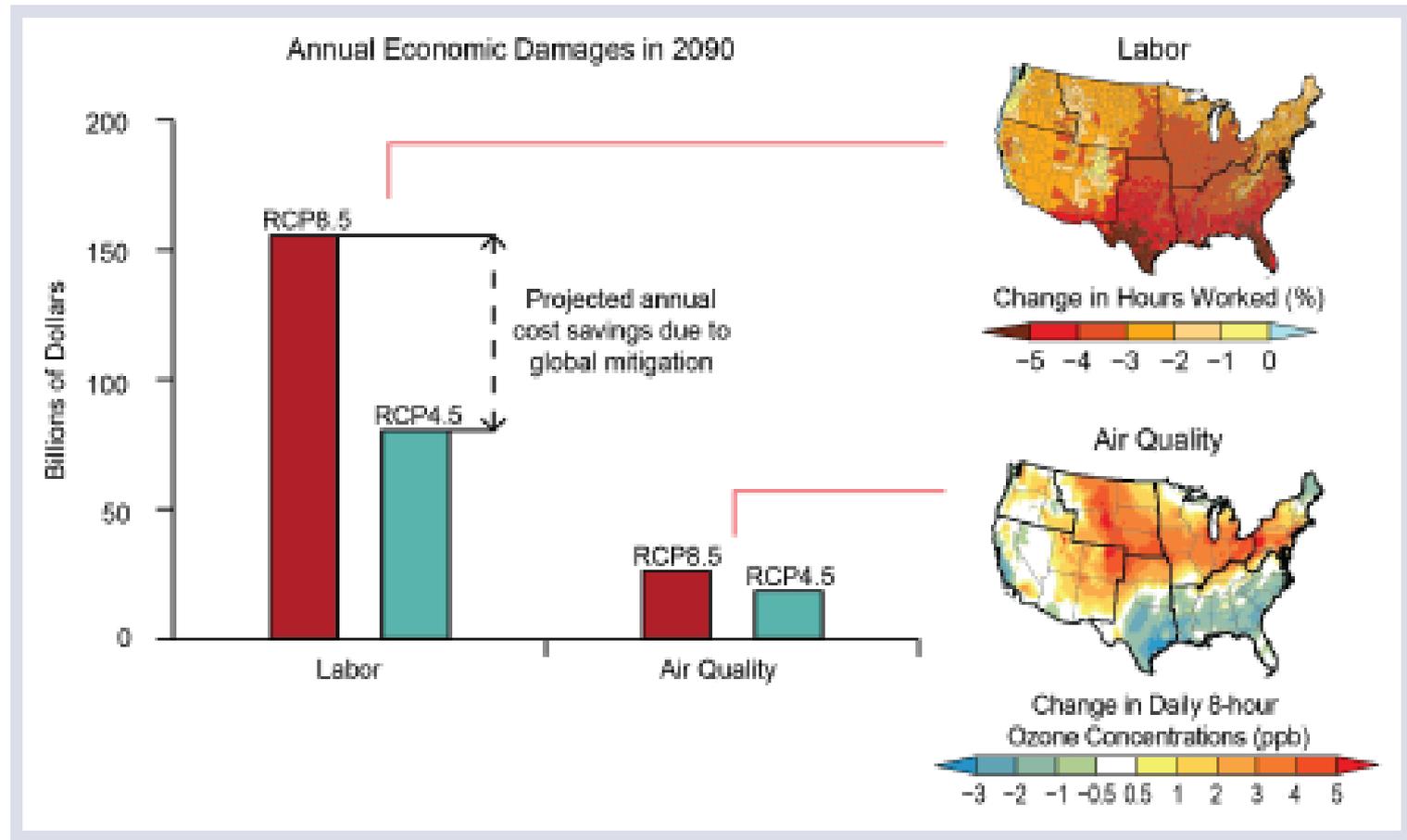


Figure 3.1: The figure shows (a) the total number of water-related billion-dollar disaster events (tropical cyclones, flooding, and droughts combined) each year in the United States and (b) the associated costs (in 2017 dollars, adjusted for inflation). Source: adapted from NOAA NCEI 2018.¹⁹

New Economic Impact Studies

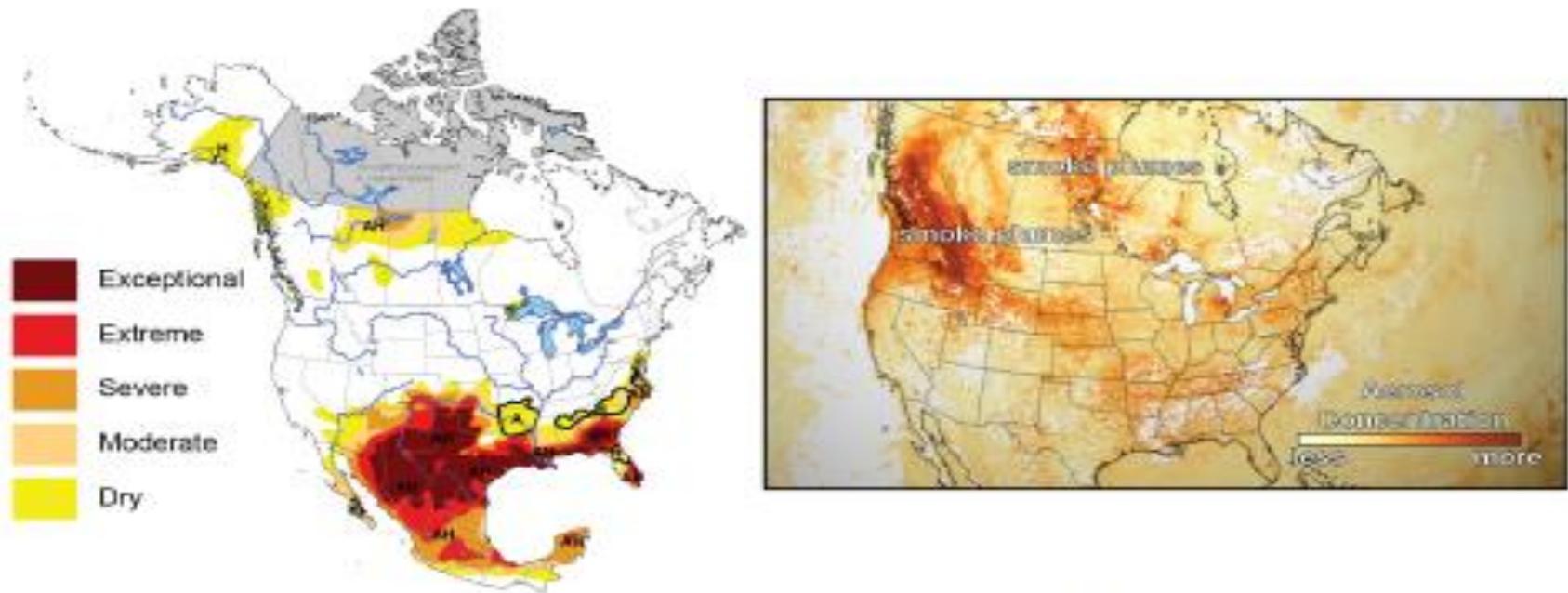


International Impacts

- Increasing adverse effects on trade and economy
- Import and export prices
- U.S. businesses with overseas operations and supply chains
- Annual losses in some economic sectors are projected to reach hundreds of billions of dollars by end of the century – more than the current gross domestic product of many U.S. states.



Transboundary Climate-Related Impacts



Shown here are examples of climate-related impacts spanning U.S. national borders. (left) The North American Drought Monitor map for June 2011 shows drought conditions along the U.S.–Mexico border. Darker colors indicate greater intensity of drought (the letters A and H indicate agricultural and hydrological drought, respectively). (right) Smoke from Canadian wildfires in 2017 was detected by satellite sensors built to detect aerosols in the atmosphere. The darker orange areas indicate higher concentrations of smoke and hazy conditions moving south from British Columbia to the United States. From Figure 16.4 (Sources: [left] adapted from NOAA 2018,¹¹⁴ [right] adapted from NOAA 2018¹¹⁵).

Transboundary Adverse Impacts

- U. S. trade and economy, including import and export prices and businesses with overseas operations and supply chains;
- Undermining international aid and investments by slowing or reversing social and economic progress in developing countries and increasing need for humanitarian aid and disaster relief;
- U.S. national security with the exacerbation of conflicts and damage to military infrastructure;
- Transboundary resources, such as migration of fish species, impacts from increase in intensity of dust storms and wildfires, transport of smoke;
- Water, wildlife, trade, transportation, infrastructure, energy, natural resources, food security, human migration, cultural resources and shared water resources and global health.

Presenter & Moderator



Marian C. Hwang – (410) 385-3604 – mhwang@milesstockbridge.com

Marian Hwang has been an environmental attorney with the firm since 1987 and chairs its Environmental Practice Group. She represents multinational and national clients, who seek her counsel for practical solutions to complex issues, whether involving complex enforcement cases, real estate/corporate acquisitions or divestitures or commercial financing matters to complex multi-defendant toxic tort claims, litigation, and multi-facility compliance matters. Marian works extensively with and appears before Federal and State regulators and courts, has been certified as a LEED Green Associate by the U.S. Green Building Council, and has served as outside national environmental counsel to the firm's major clients. Miles & Stockbridge has been an affiliate council member of NAEM since 2009.



Van P. Hilderbrand, Jr. – (202) 524-8052 – vhilderbrand@milesstockbridge.com

Van P. Hilderbrand, Jr. focuses his practice on environmental litigation, regulatory compliance issues, and advising on the environmental aspects of business and real estate transactions. His work also includes consulting on renewable energy project development and project finance transactions, conducting due diligence and assisting with permitting issues. He represents clients in a wide range of industries, including energy, manufacturing, consumer products, pharmaceuticals, chemicals, transportation, technology and real estate.



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Leading With
Purpose **175** YEARS
AND BEYOND

Using Change to Accelerate Impact

Gretchen Hancock
Senior Director, EHS & CSR

FOR THOSE WHO MAKE THE WORLD

Inspiring Makers and Innovators to Create a More Sustainable World



EMPOWER MAKERS

Enable **10 Million** Creators And Makers To Thrive In A Changing World



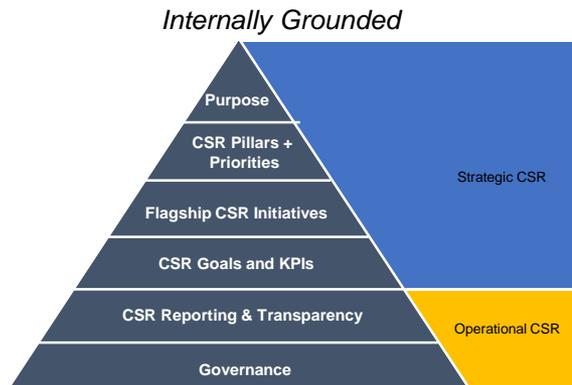
INNOVATE WITH PURPOSE

Innovate Our Products To Enhance The Lives Of **500 Million** People And Improve Environmental Impacts



CREATE A MORE SUSTAINABLE WORLD

Positively Impact The Environment Through Our Operations by becoming Carbon Positive, Zero Waste to Landfill



Create A More Sustainable World

2030 AMBITION: POSITIVELY IMPACT THE ENVIRONMENT THROUGH OUR OPERATIONS

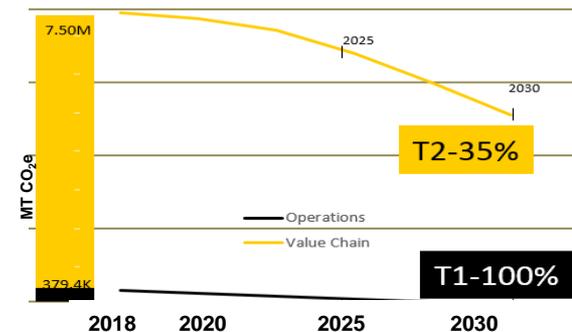
Our Priorities

- Improve Our Environmental Impacts Related To Green House Gas Emissions, Water And Waste



Our Goals

- Carbon Positive Operations
- Sustainable Water Use
- Zero Waste to Landfill



Climate Risks & Opportunities

Used 2018 CDP inputs and TCFD* categories for Climate Risk & Opportunity

Brainstormed scenarios, incorporated outcomes from scenario brainstorm

Risk-ranked each scenario based on the following factors:

- Time horizon until the risk or opportunity would be realized
- Likelihood of the risk or opportunity being realized by SBD
- Magnitude of financial impact of risk or opportunity

Applied weighting** to each factor in an algorithm to create a Risk Probability Number

Top PRI Signatories

BLACKROCK

Amundi Pioneer
ASSET MANAGEMENT

GEODE
Capital Management, LLC

Janus Henderson
INVESTORS


STATE STREET


Invesco

 Dimensional

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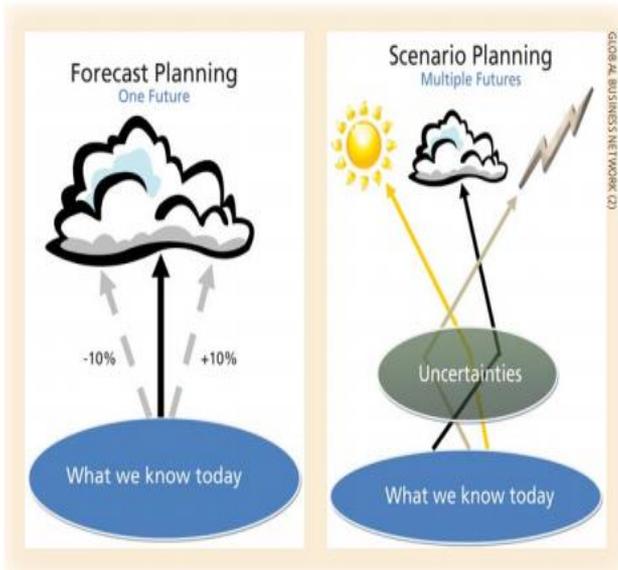
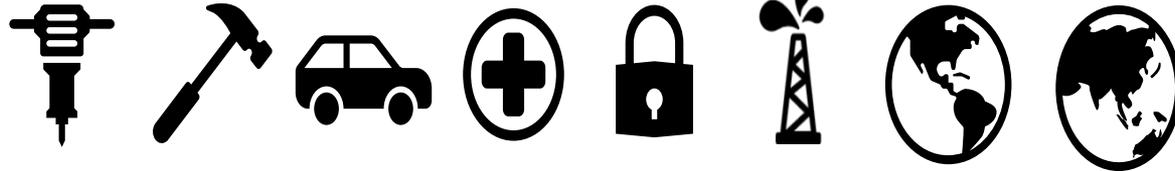
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Scenario Analysis

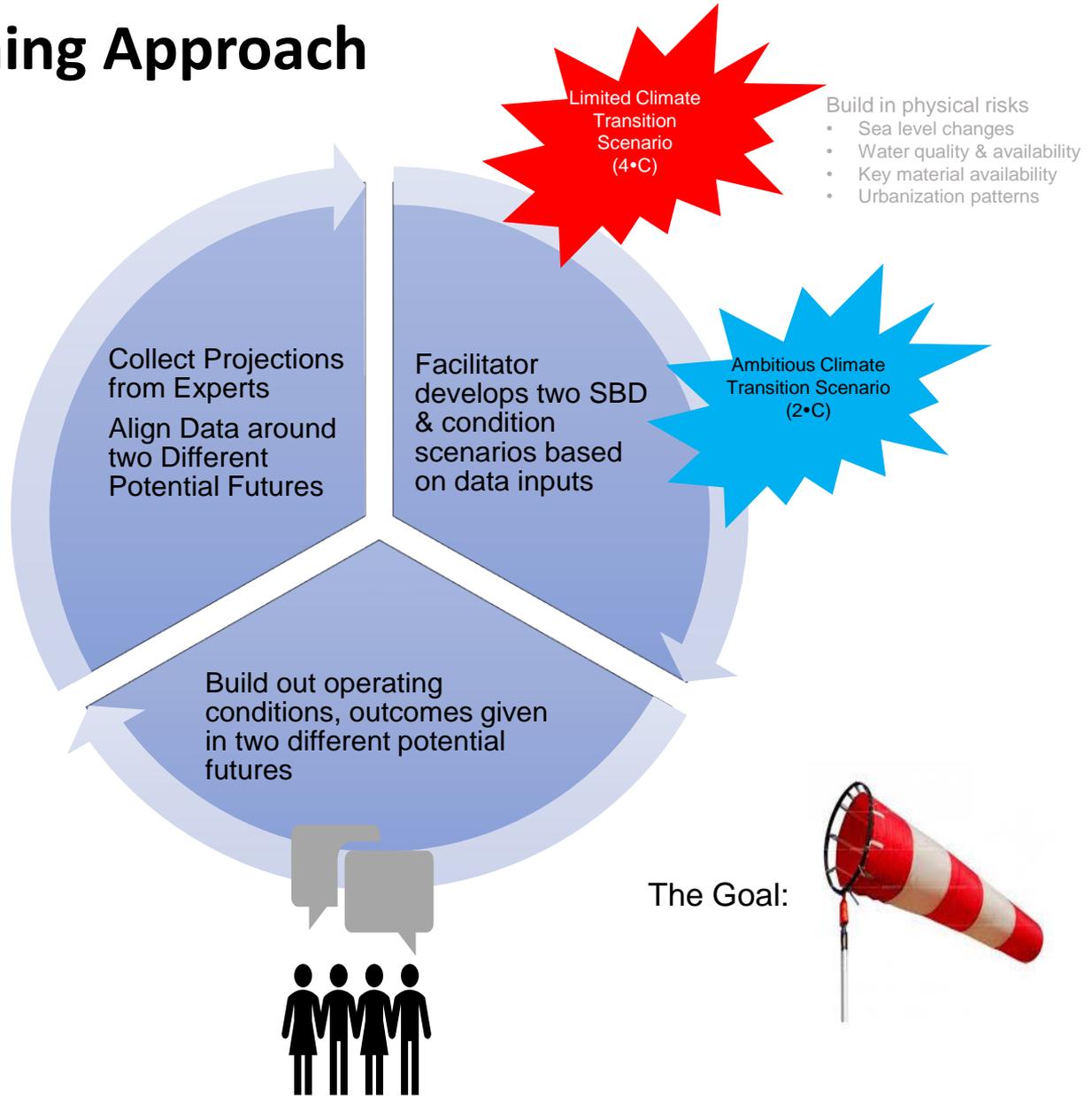
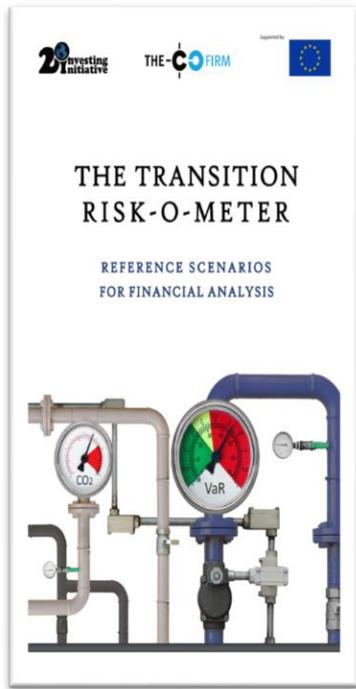
Know your business...



Example Factors	Type	Stakeholder
Steel Price	Input cost	Sourcing
NG/Oil market analysis	Market op, input cost	Commercial
Electricity price	Input cost	Sourcing
Renewables deployment	Material scarcity	Commercial
Carbon price	Input cost	Finance, EHS-CSR
EV deployment	Pace, geography, scarcity	Commercial
Consumer spend+housing starts	Market op	Commercial

Anticipate potential **futures** and identify indicator signals to monitor

Scenario Planning Approach



THANK YOU

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Polling Questions

1. Does your company have board-level oversight of climate change?
2. Is climate integrated into your company's business strategy?
3. Does your company conduct scenario analyses?
4. Does your company have an integrated multi-disciplinary or company-wide risk management process, involving legal, risk, and financial departments?
5. Has your Company established absolute and/or intensity targets?

Polling Comparison with 2018 CDP Data from 6,937 Companies

1. Does your company have board-level oversight of climate change?
73% of 6,937 respondents said "YES"
2. Is climate integrated into your company's business strategy?
72% of 6,937 respondents said "YES"
3. Does your company conduct scenario analyses?
42% of 3,397 respondents said "YES"
4. Does your company have an integrated multi-disciplinary or company-wide risk management process, involving legal, risk, and financial departments?
54.5% of 3,783 respondents said "YES"
5. Has your Company established absolute and/or intensity targets?
50% of 6,937 respondents said "YES"

<https://www.cdp.net/en/research/global-reports/global-climate-change-report-2018>



Mitigation and Adaptation to a Changing Environment

Nick Kell
Emergency Management Coordinator
Ball Aerospace



Adaptation, Mitigation, and Resiliency



- Adaptation – activities to lower the risks posed by the consequences of climatic changes.
- Mitigation – addresses root cause by reducing greenhouse gas emissions.
- Climate Resilience – ability to absorb stresses and evolve into a more prepared and sustainable system.

Value of Resiliency



- Regulatory or contractual compliance
 - Be aware of regulations and requirements within your markets
- Competitive Advantage
 - Ability to deliver uncompromised
 - Differentiator for proposals and negotiations
- Brand Reputation
 - Influence of social media
 - Community relationships
- Reactive vs. Proactive

Demonstrate the Value of Resiliency



■ Risk Identification

– Hazard and Vulnerability Assessment (HVA)

- ***Relative Risk = Probability x (Magnitude – Mitigation)***
- Leverage SMEs
- Tailor to your organization's environment and operations
- Foster discussion and build support



Demonstrate the Value of Resiliency



- Utilize HVA findings to drive informed decision making

Risk/Hazard	Adaptation Strategies	Mitigation Activities
Electrical Outage	<ul style="list-style-type: none">• Critical equipment on emergency generator power• Telework capability for employees	<ul style="list-style-type: none">• Dual electrical feeds• Onsite power generation

Demonstrate the Value of Resiliency



- Knowledge Capture and Consolidation
 - Collect and organize institutional knowledge
 - Locate existing plans, make them accessible in one place
 - Debrief and document incidents
 - Organize a timeline of events/actions
 - Define impacts to the organization
 - Identify and document the successes, opportunities for improvement, and corrective plans

Demonstrate the Value of Resiliency



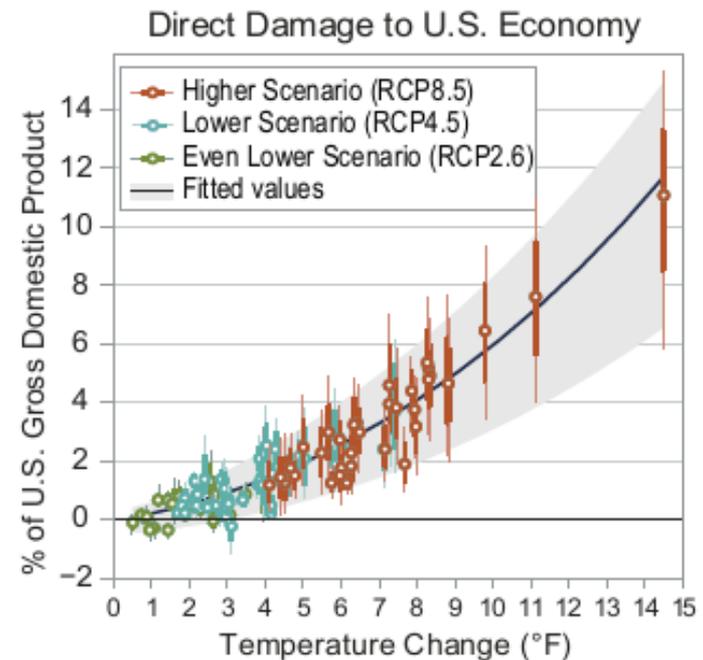
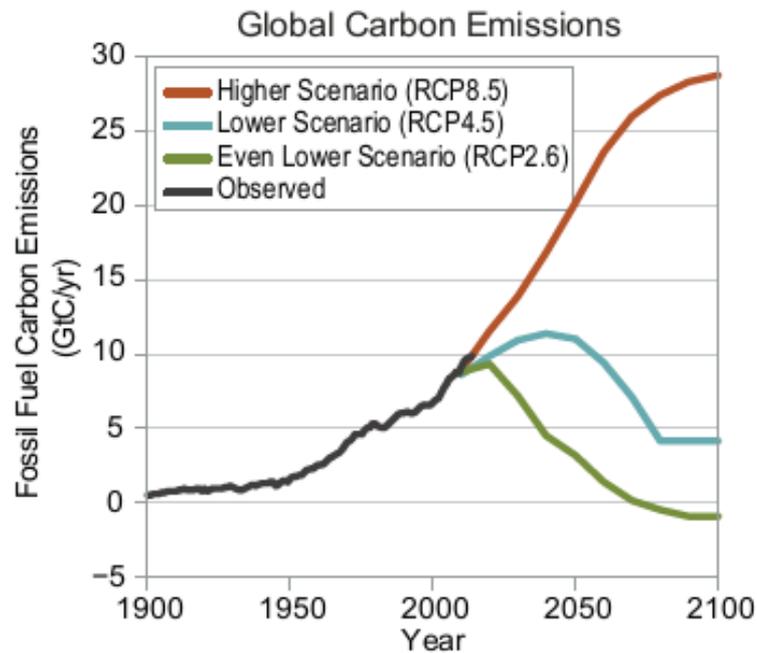
- Identify your team and generate awareness
- Notification and Activation
 - Standardize the first 30 minutes of an incident
 - How do you activate your response teams? What are your first actions?
 - How do you communicate emergency information to employees?
- Engage the community and build partnerships

Final Thoughts

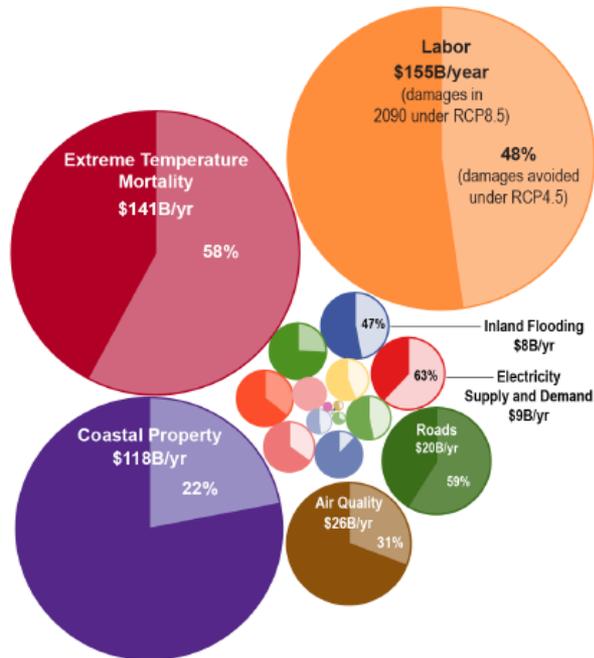


- A more resilient workforce creates a more resilient organization
- Don't overlook opportunities to train, educate, and prepare your employees at work and at home

Estimates of Direct Damage from Temperature Change



Projected Damages and Potential Risk Reduction by Sector



Annual Economic Damages in 2090		
Sector	Annual damages under RCP8.5	Damages avoided under RCP4.5
Labor	\$155B	48%
Extreme Temperature Mortality [∅]	\$141B	58%
Coastal Property [∅]	\$118B	22%
Air Quality	\$26B	31%
Roads [∅]	\$20B	59%
Electricity Supply and Demand	\$9B	63%
Inland Flooding	\$8B	47%
Urban Drainage	\$6B	26%
Rail [∅]	\$6B	36%
Water Quality	\$5B	35%
Coral Reefs	\$4B	12%
West Nile Virus	\$3B	47%
Freshwater Fish	\$3B	44%
Winter Recreation	\$2B	107%
Bridges	\$1B	48%
Munic. and Industrial Water Supply	\$316M	33%
Harmful Algal Blooms	\$199M	45%
Alaska Infrastructure [∅]	\$174M	53%
Shellfish*	\$23M	57%
Agriculture*	\$12M	11%
Aeroallergens*	\$1M	57%
Wildfire	-\$106M	-134%

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