



G R E S B[®]

2019

Resilience Reference Guide

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Disclaimer: 2019 GRESB Resilience Module Reference Guide

The 2019 GRESB Real Estate and Infrastructure Resilience Module Reference Guide (“Reference Guide”) accompanies the 2018 GRESB Real Estate Resilience Module and is published both as a standalone document and in the GRESB Portal alongside each Module indicator. The Reference Guide reflects the opinions of GRESB and not of our members. The information in the Reference Guide has been provided in good faith and is provided on an “as is” basis. We take reasonable care to check the accuracy and completeness of the Reference Guide prior to its publication. While we do not anticipate major changes, we reserve the right to make modifications to the Reference Guide. We will publicly announce any such modifications. The Reference Guide is not provided as the basis for any professional advice or for transactional use. GRESB and its advisors, consultants and sub-contractors shall not be responsible or liable for any advice given to third parties, any investment decisions or trading or any other actions taken by you or by third parties based on information contained in the Reference Guide. Except where stated otherwise, GRESB is the exclusive owner of all intellectual property rights in all the information contained in the Reference Guide.

Introduction

Worldwide, the frequency, size and cost of disasters is increasing, driven by climate change, population growth, rapid urbanization, and other factors. Sustainability efforts are critical in helping mitigate these factors, including action to reduce greenhouse gas emissions; increase the use of clean, renewable energy sources; conserve water resources; and plan safe, equitable communities. These efforts are essential and must be continued and expanded. At the same time, businesses or communities must prepare for the changes that lie ahead. Organizations need to identify hazards, assess risks, and systematically adapt to a changing climate and changing world.

Long-term, global trends including population growth, urbanization, and climate change ensure that efforts to manage property and infrastructure in the future cannot entirely rely on past experience. Scientific evidence points to significant change, along with great uncertainty about local and regional impacts. The challenges of this dynamic future are daunting, but they also provide significant business opportunities. Scientists can already make reliable predictions about many types of impacts, along with information needed to identify the most vulnerable places and people. In parallel, new technologies and strategies are emerging that can mitigate local hazards, reduce risks, and protect life and property. The availability of this understanding and opportunities for positive action create the need to understand how property and infrastructure companies are acting to use these tools to manage risk and, in some cases, seize business opportunities.

These circumstances have motivated the development of the new GRESB Resilience Module. The Module has two primary goals:

1. Meet investor demand for information about the resilience of property and infrastructure companies and funds; *and*
2. Provide more information about strategies used by property and infrastructure companies to assess and manage climate risks and resilience.

Definitions

The Resilience Module addresses two fundamental dimensions of climate risk and resilience identified by the Financial Stability Board's [Task Force on Climate-related Financial Disclosures](#) (TCFD) recommendations, including:

1. Transition risk
2. Physical risk

Transition risk are a set of vulnerabilities related to the ongoing shift to a low carbon economy necessary to achieve the goals of the United Nations [Paris Agreement](#). This transition will create new opportunities for companies capable of providing low-carbon solutions, such as energy efficient buildings powered by renewable energy. This transition may also create new liabilities for companies reliant on inefficient, carbon-intensive technologies. Companies with these liabilities may be at risk from future regulation and competitive disadvantages (e.g., U.K. Minimum Energy Efficiency Standards for leased property).

Climate-related physical risks are associated with a myriad of shocks and stresses, such as those addressed by the global [100 Resilient Cities](#) program. Resilience to these issues includes both preparation for changing conditions and short-term responses to disruptive shocks (e.g., fire, flood events) and chronic stresses (e.g., changing heating and cooling degree days, precipitation levels).

While the Resilience Module has a primary focus on climate risk and resilience, it takes a broader perspective than TCFD. The Resilience Module provides opportunities to report and score other resilience-related factors beyond transition and physical climate risk. Notably, the Module provides indicators related to social resilience and physical security, categorized as Social risks. These issues include assessment and business strategies related to social shocks and stressors, such as labor disruption, inequity, terrorism, among others.

For the purpose of 2019 reporting, the Resilience Module provides relevant, actionable information related to transition, physical, and social risks and opportunities facing real estate and infrastructure companies around the world.

Scope and Purpose

The Resilience Module provides investors with information needed to understand how real estate and infrastructure companies and funds are preparing for potentially disruptive events and changing conditions, assessing long-term trends, and becoming more resilient over time. The Module seeks to evaluate the capacity of organizations to assess and respond to risks and opportunities related to climate, environmental, social, economic, technological and geopolitical changes through asset resilience and the organization's management capacity.

The Resilience Module does not attempt to assess or communicate specific risks to individual assets, such as homes or buildings. Rather, the Resilience Module provides an entity-level framework to report on the processes used to conduct such risk assessments and use the results to manage risk and create value. Stakeholders interested in asset-level risk assessment and management are referred to a growing number of tools such as those identified in the [GRESB \(2018\) Special Report on Real Assets and Resilience](#).

Timeline

The GRESB Resilience Module is a three-year effort to improve reporting and benchmarking for climate risk and resilience by property and infrastructure companies. The 2019 Module makes incremental improvements in reporting indicators based on first-year experience with an emphasis on increasing alignment with recommendations from the TCFD. Changes to the 2019 Module also attempt to provide more quantitative and objective indicators that can be more easily compared across participants. After 2020, selected climate risk and resilience indicators will be moved into the core Real Estate and Infrastructure Assessments.

- 2018: An initial high-level screen intended to raise awareness, motivate internal discussion, and provide a basic level of transparency for investors. Results from 2018 Real Estate and Infrastructure Assessments are available in the GRESB (2018) report [Real Assets & Resilience](#).
- 2019: Build upon the high-level criteria with more rigor with respect to the contents and quality of evidence. Increase alignment with TCFD recommendations. Open Resilience Module for participation by Infrastructure Funds.
- 2020: Increase stringency of validation, test additional performance indicators, and, where appropriate, align indicators and evidence requirements with industry standards and guidelines. This is the last year a distinct Resilience Module will be offered.
- 2021: Migrate selected indicators to the core GRESB assessments. Climate risk and resilience will be scored and reported as part of the core GRESB assessments.

Structure

The 2019 Resilience Module has four sections:

1. Leadership and Governance
2. Risk Assessment
3. Business Strategy
4. Performance Metrics and Targets

New in 2019, the Resilience Module is also available for us with the Infrastructure Fund Assessment.

The Resilience Module contains indicator structures familiar to users of GRESB Real Estate or Infrastructure. Each item consists of a "Yes or No" question. Either choice provides the option of providing additional text comments. Selecting "Yes" provides a set of sub-questions to refine the response and the option to provide supporting evidence in the form of an uploaded document or hyperlink.

Data Access

Participants in the Resilience Module can control access to Module results via the GRESB Portal by checking a box to confirm whether they wish to share their Module results with their investors. If a participant shares its Module results, these will appear as a separate section in that participant's GRESB Scorecard and Benchmark Report. If a participant does not share its results, Resilience Module results will not appear in the Scorecard and Benchmark Report. This selection can be changed upon request to info@gresb.com. Aggregated

information from all Resilience Module participants will be used as the basis for a market report and related research.

GRESB Resilience Indicators

RS0 Would you like to participate in the Resilience Module?

- Yes
- No

Not scored

RS1 Does the organization have a senior employee responsible for climate risk and other resilience-related issues associated with this entity?

- Yes

The most senior employee responsible for resilience is:

- The same individual as the senior decision-maker responsible for sustainability (identified in the Management Aspect of the main GRESB Assessment).
- A different individual(s) from the senior decision-maker responsible for sustainability.

Provide the details for the most senior of these employees

Name: _____

Job title: _____

E-mail: _____

LinkedIn profile (optional): _____

Describe the individual's resilience-related qualifications (maximum 250 words)

- No

Provide additional context for the answer provided (maximum 250 words)

3 points

Intent

Assess entity's leadership and governance for transition, physical climate, and social risks and opportunities. Qualified, empowered senior leadership is a necessary prerequisite for effective and coordinated action to mitigate risk and create value.

Requirements

The requirement for maximum score in 2019 is an answer "Yes" and filling in all relevant information.

RS2 Does the organization have a systematic process for communication and review of resilience-related information by the most senior governance body with responsibility for the entity?

Yes

Climate-related transition risks

- The process is in routine use across the organization
- The process informs the highest level decision maker or decision making body with responsibility for the entity
- The process is documented
- The process includes (select all that apply)
 - Written communications
 - Presentations or briefings
 - Briefing documents for review by the Board of Directors
 - Other: _____

Physical risks

- The process is in routine use across the organization
- The process informs the highest level decision maker or decision making body with responsibility for the entity
- The process is documented
- The process includes (select all that apply)
 - Written communications
 - Presentations or briefings
 - Briefing documents for review by the Board of Directors
 - Other: _____

Social risks

- The process is in routine use across the organization
- The process informs the highest level decision maker or decision making body with responsibility for the entity
- The process is documented
- The process includes (select all that apply)
 - Written communications
 - Presentations or briefings
 - Briefing documents for review by the Board of Directors
 - Other: _____

UPLOAD or URL_____

Indicate where in the evidence the relevant information can be found_____

No

Provide additional context for the answer provided (maximum 250 words)

3 points

Intent

Assess the internal communication of resilience-related risks and opportunities to senior decision makers. This indicator is broadly aligned with TCFD recommendations for governance.

Requirements

2019: Maximum score for this indicator requires:

1. An answer "Yes";
2. An affirmative answer for each of the three major sub-questions (transition-, physical-, and social-risks);
3. The selection of at least one answer choice for each sub-question; and
4. Provision of relevant supporting evidence.

2020: No change expected

Evidence

2019 Information will be evaluated for evidence of operational processes related to transition-, physical-, and social-risks. Information will be used to support claims related to routine use, communication mechanisms, and other answer choices.

2020: No change expected

Does the organization have a systematic process to assess the entity's exposure to climate-related transition risk? Yes

- The process is in routine use across the organization
- The process is documented
- The process is based on a science-based target
- The process considers scenarios (select all that apply)

 Representative Concentration Pathway 2.6 Representative Concentration Pathway 4.5 Representative Concentration Pathway 8.5 Other: _____

- The process evaluates climate-related transition opportunities and risk factors including (select all that apply)

 Policy and legal issues (select all that apply)

- Increased pricing of GHG emissions, natural gas or electricity
- Enhanced environmental-reporting obligations
- Increasingly stringent building and energy codes (e.g., EPC requirements)
- Other: _____

 Technology issues (select all that apply)

- Write-offs and early retirement of inefficient building attributes
- Capital investments to replace "brown" or inefficient equipment (e.g., installation of a heat pump)
- Other: _____

 Market issues (select all that apply)

- Reduced investor demand for assets with low scoring energy labels/ratings and/or green building certifications
- Abrupt and/or unexpected shifts in energy costs
- Re-pricing of "brown" assets
- Reduction in capital availability
- Other: _____

 Asset labels and certifications (select all that apply)

- Building energy labels/ratings
- Building certifications

Other: _____

Other: _____

The process evaluates potential outcomes including (select all that apply)

Risk to asset value;

Risk to tenants;

Risk to communities (particularly vulnerable populations);

Risk to continuity of operations;

Risk to individuals working with or for the entity

Other

-

Results from the risk assessment are available for investors (select all that apply)

At the entity level

At the asset level

For some assets

For all assets

UPLOAD or URL _____

Indicate where in the evidence the relevant information can be found _____

No

Provide additional context for the answer provided (maximum 250 words)

3 points

Intent

Assess the organization's approach to assessing, analyzing, and communicating transition risk. This indicator is broadly aligned with TCFD recommendations for risk management.

Requirements

2019: Maximum score requires an affirmative answer for each of the sub-questions and the selection of at least one answer choice under each sub-question.

2020: No change anticipated.

Evidence

2019: Evidence will be evaluated to understand the scope of transition risk assessment at the entity level.

2020: In addition to Year 2 criteria, evidence will be evaluated for information about alignment with a recognized third-party standard or guidelines.

References

[Green Star, Asset Resilience Innovation Challenge](#)

[United Nations Office of Disaster Risk Reduction PreventionWeb “Components of Risk”](#)

[International Disaster Database](#)

[Motivated by the Intergovernmental Panel on Climate Change \(2018\) Special Report: Global Warming of 1.5°C - Summary for Policymakers](#)

[Adapted from the International Disaster Database](#)

RS4 Does the organization have a systematic process to assess the entity's exposure to social risks?

Yes

- The process is in routine use across the organization
- The process is documented
- The process is based on a science-based target
- The process considers scenarios
 - Representative Concentration Pathway 2.6
 - Representative Concentration Pathway 4.5
 - Representative Concentration Pathway 8.5
 - Other: _____
- The process evaluates social factors including (check all that apply)
 - Physical security
 - Cybersecurity
 - Social disruption
 - Public health
 - Poverty
 - Modern slavery
 - Other: _____
- The process considers outcomes including (check all that apply)
 - Risk to asset value
 - Risk to tenants/customers
 - Risk to communities (particularly vulnerable populations)
 - Risk to continuity of operations
 - Risk to individuals working with or for the entity
 - Other: _____
- Results from the risk assessment are available for investors (select all that apply)
 - At the entity level
 - At the asset level
 - For some assets
 - For all assets

UPLOAD or URL_____

Indicate where in the evidence the relevant information can be found_____

No

Provide additional context for the answer provided (maximum 250 words)

3 points

Intent

Assess the organization's approach to assessing, analyzing, and communicating social risk. This indicator is broadly aligned with TCFD recommendations for risk management.

Requirements

2019: Maximum score requires evidence of a systematic process to evaluate and communicate social risk for the entity. Social risks include:

1. Physical security: terrorism, loss prevention, etc.
2. Cybersecurity: data security, privacy, etc.
3. Social disruption: labor relations, community relations, etc.
4. Public health: acute or chronic disease, social and environmental determinants of health, etc.
5. Poverty: income inequality, workforce training and capabilities, etc.

2020: No change anticipated.

Evidence

2019: Full credit requires an affirmative answer for each of the sub-questions and the selection of at least one answer choice under each sub-question.

2020: In addition to Year 2 criteria, evidence will be evaluated for information about alignment with a recognized third-party standard or guidelines.

References

[Green Star, Asset Resilience Innovation Challenge](#)

[United Nations Office of Disaster Risk Reduction PreventionWeb "Components of Risk"](#)

[International Disaster Database](#)

[Motivated by the Intergovernmental Panel on Climate Change \(2018\) Special Report: Global Warming of 1.5°C - Summary for Policymakers](#)

Does the organization have a systematic process to assess the entity's exposure to physical environmental risks?

Yes

- The process is in routine use across the organization
- The process is documented
- The process is based on a science-based target
- The process considers scenarios

Representative Concentration Pathway 2.6

Representative Concentration Pathway 4.5

Representative Concentration Pathway 8.5

Other: _____

The process evaluates environmental factors including (check all that apply)

Biological

Climatological

Geophysical

Hydrological

Meteorological

Other: _____

The process considers outcomes including (check all that apply)

Risk to asset value

Risk to tenants/customers

Risk to communities (particularly vulnerable populations)

Risk to continuity of operations

Risk to individuals working with or for the entity

Other: _____

Results from the risk assessment are available for investors (select all that apply)

At the entity level

At the asset level

For some assets

For all assets

UPLOAD or URL _____

Indicate where in the evidence the relevant information can be found _____

No

Provide additional context for the answer provided (maximum 250 words)

3 points

Intent

Assess the organization's approach to assessing, analyzing, and communicating physical, climate-related risk. This indicator is broadly aligned with TCFD recommendations for risk management.

Requirements

2019: Maximum score requires an affirmative answer for all of the sub-questions and the selection of at least one answer choice under each sub-question.

2020: No change anticipated.

Evidence

2019: Evidence will be evaluated to understand the scope of physical risk assessment at the entity level. Physical risks include but are not limited to:

- Biological: epidemics, insect/animal infestations
- Climatological: extreme temperatures, drought, wildfire
- Geophysical: earthquakes, landslides, volcanoes, tsunamis
- Hydrological: floods, avalanches
- Meteorological: hurricanes, cyclones, storms, wave surges

2020: In addition to Year 2 requirements, evidence will be evaluated for information about alignment with a recognized third-party standard or guidelines.

References

[Green Star, Asset Resilience Innovation Challenge](#)

[United Nations Office of Disaster Risk Reduction Web Components of Risk](#)

[International Disaster Database](#)

[Task Force on Climate-related Financial Disclosures](#)

[Motivated by the Intergovernmental Panel on Climate Change \(2018\) Special Report: Global Warming of 1.5°C - Summary for Policymakers](#)

RS6 Has the organization implemented resilience-related business strategies covering its assets during the last four years?

Yes

Please select asset type related strategies to manage risk and/or create value (select all that apply):

- New construction projects
 - Transition risk and value creation strategies
 - Energy demand management
 - Energy efficiency
 - Energy supply
 - Energy storage
 - Other: _____
 - Social risk and value creation strategies
 - Physical security
 - Cybersecurity
 - Social disruption
 - Public health
 - Poverty
 - Modern slavery
 - Other: _____
 - Physical risk and value creation strategies
 - Biological
 - Climatological
 - Geophysical
 - Hydrological
 - Meteorological
 - Other: _____
- Standing investments
 - Transition risk and value creation strategies
 - Energy demand management
 - Energy efficiency
 - Energy supply

Energy storage

Other: _____

Social risk and value creation strategies

Physical security

Cybersecurity

Social disruption

Public health

Poverty

Modern slavery

Other: _____

Physical risk and value creation strategies

Biological

Climatological

Geophysical

Hydrological

Meteorological

Other: _____

New acquisitions

Transition risk and value creation strategies

Energy demand management

Energy efficiency

Energy supply

Energy storage

Other: _____

Social risk and value creation strategies

Physical security

Cybersecurity

Social disruption

Public health

Poverty

Modern slavery

Transition strategy

Other: _____

Physical risk and value creation strategies

Biological

Climatological

Geophysical

Hydrological

Meteorological

Other: _____

UPLOAD or URL _____

Indicate where in the evidence the relevant information can be found _____

No

Not Applicable

Provide additional context for the answer provided (maximum 250 words)

3 points

Intent

Assess the organization's approach to managing climate risk and resilience for new construction projects, standing investments or new acquisitions. This indicator is broadly aligned with TCFD recommendations for business strategy.

Requirements

2019: Maximum score for this indicator requires:

- An answer "Yes";
- An affirmative answer for each of the three major sub-questions (transition-, physical-, and social-risks);
- The selection of at least one answer choice for each sub-question; and
- Provision of relevant supporting evidence.

2020: In addition to 2019 requirements, GRESB anticipates adding expectations for alignment with third-party standards and guidelines.

Evidence

2019: Evidence will be evaluated to find support selected transition-, physical-, and social-strategies.

2020: In addition to Year 2 requirements, GRESB anticipated adding expectations for alignment with third-party standards and guidelines.

RS7 Did the entity have specific climate risk and resilience targets or goals during the reporting period?

Yes

Please describe

Transition risk and value creation

Targets or goals: _____

Social risk and value creation

Targets or goals: _____

Physical risk and value creation

Targets or goals: _____

UPLOAD or URL _____

Indicate where in the evidence the relevant information can be found _____

No

Not Applicable

Provide additional context for the answer provided (maximum 250 words)

3 points

Intent

Assess the organization's approach to establishing resilience-related targets and goals. This indicator is broadly aligned with TCFD recommendations for performance measurement.

Requirements

2019: Maximum score for this indicator requires:

1. An answer "Yes";
2. An affirmative answer for each of the three major sub-questions (transition-, physical-, and social-risks);
3. Provision of relevant supporting evidence.

Terms used in this indicator include:

- Transition risk or value creation targets for goals: These targets and goals can be the reduction in vulnerability to policies and economic factors associated with decarbonization (e.g., the fraction of building with E or F energy labels). It may also include value creation goals, such as increasing tenancy or rental income from high performance properties.
- Social risk or value creation targets or goals: These targets and goals can be the reduction in vulnerability to social risk (e.g., public health, inequality). It may also include value creation goals, such as increasing tenancy or rental income from high performance properties.
- Physical risk or value creation targets or goals: These targets and goals can be the reduction in vulnerability to physical, climate-related risk (e.g., flood, fire, rising temperature). It may also include value creation goals, such as increasing tenancy or rental income from high performance properties.

Not Applicable should be used only in cases such as when the entity does not have any physical facilities during the reporting period (e.g., Developer Assessment participants).

Evidence

2019 [New]: Any relevant evidence supporting the description of the entity's goals and/or targets will be accepted.

2020: In addition to 2019 requirements, GRESB anticipated adding expectations for alignment with third-party standards and guidelines.

RS8 How did the entity measure resilience-related performance and/or outcomes during the last four years?

Yes

Please describe metrics used to track outcomes during the last four years;

See also TCFD Guidance on this

Transition outcomes and performance measures

Describe metrics tracked: _____

Social risk measurement, select all that apply

Describe metrics tracked: _____

Physical risk measurement

Describe metrics tracked: _____

UPLOAD or URL _____

Indicate where in the evidence the relevant information can be found _____

No

Not Applicable

Provide additional context for the answer provided (maximum 250 words)

3 points

Intent

Assess the organization's approach to tracking progress toward resilience-related targets and goals. This indicator is broadly aligned with TCFD recommendations for performance measurement.

Requirements

2019 [New]: Describe metrics used to track each risk category and provide evidence of the use of each metric (e.g., illustration of data collection, analysis, or communication to decision makes). [TCFD guidance](#) provides a partial reference for the creation of metrics (note, it does not address social issues). Full credit will be given for responses that describe at least one metric in each of the three categories.

2020: To be determined.

Evidence

2019 [New]: Any relevant evidence supporting the metrics tracked by the entity will be accepted.

2020: To be determined.

Supporting Metrics - More information from the core assessments

The following indicators from the core assessments also provide valuable information about resilience. Responses to their indicators will be evaluated as part of the Resilience Module.

GRESB Real Estate Assessment indicators including:

MA3	Sustainability team structure and function
MA4	Leadership and responsibility
PD1	Sustainability policy, including resilience
PI1&2	Performance indicators for carbon, energy, renewables, etc.
RO3.1	Risk assessment for new acquisition
RO3.2	Risk assessment for standing assets
ME2	Data management
BC1	Building certifications

GRESB Infrastructure Assessment indicators, including

MA4/5	Leadership and responsibility
PD1	Sustainability policy, including resilience
RO1	Environmental risk assessments
RO2	Social risk assessments
PI3&4	Performance indicators for carbon, energy, renewables, etc.
CA1	Asset-level certification
CA2	Awards for ESG-related actions

Definitions

Adaptation: The ability of systems to adjust to changing conditions. This includes the ability for human or natural systems to respond to the impacts of climate change and continue functioning.

Capacity: The capability of an organization to proactively and positively manage change. Resilience capacity is a function of an organization's leadership, its ability to assess and understand threats and opportunities, its ability to plan and implement adaptive measures, and to continually improve. Capacity can be expanded in the context of an organization's physical, social and economic systems.

Community: Community means persons or groups of people economically, socially or environmentally impacted (positively or negatively) by the organization's operations. Communities are defined by association and connection, not geography. Resilience can be strengthened by supporting the bonds within and between communities.

Entity: The investable portfolio for which you are submitting the Resilience Module for.

Hazard: Potentially dangerous or harmful occurrence that may cause loss of life, injury, destruction of property, loss of livelihood, disruption of business, damage to the environment, etc

Mitigation: Actions that can be taken to lessen the likelihood or harmfulness of a potential hazard. Note that the word is used differently in the fields of climate change and risk management. In the climate change arena, mitigation generally refers to the reduction of greenhouse gas emissions and similar actions to reduce the causes of climate change, while actions taken to address the impacts of climate change (such as sea level rise or storm surge) are called adaptation. In the fields of risk management, mitigation refers to actions to reduce the likelihood or severity of risks on the ground, including hazards that are driven by climate change as well as those resulting from other causes (e.g. earthquakes). In the GRESB Resilience Module, the word is used in the latter context, referring to actions to lessen hazards from an operational standpoint.

New Construction: Includes all activities to obtain or change building or land- use permissions and financing. Includes construction work for the project with the intention of enhancing the property's value. Development of new buildings and additions to existing buildings that affect usable space can be treated as new construction. New Construction projects refer to buildings that were under construction at any time during the reporting period.

Preparedness: The level of readiness of an organization or community to disruptions and disasters, for example through emergency planning, training, drills, and communication protocols

Prevention: The stopping or avoidance of hazards. For example preventing flood damage by not building in a floodplain or by locating critical system components above potential flood levels.

Recovery: Efforts to restore (and ideally improve) full functionality of a business or community following a disaster.

Response: The ability of an organization to react to a disruption or disaster and provide in emergency efforts. Response activities typically include accounting and ensuring the safety of people, supporting those in need of rescue or assistance, protecting property and processes, communicating with emergency responders, etc.

Resilience: The capacity of companies and funds to survive and thrive in the face of social and environmental stressors and shocks.

Risk: The combination of the likelihood that a hazard will occur, the potential severity of its consequences, and the level of vulnerability of people, assets or systems that are exposed. For example, the frequency and severity of heat waves in many places is increasing, leading to increased risk. This risk is higher for the elderly because they are more vulnerable to the impacts of heat and more likely to be socially isolated.

Stressor: Underlying vulnerabilities within community, organization or place that reduce the capacity of the system to plan for, adapt to, cope with or recover from disasters. Can also be thought of as slow moving disasters on their own. Examples include poverty, unemployment, racial inequality, public health concerns, environmental pollution, crumbling or poorly planned infrastructure, changing climate, etc. Addressing underlying stressors is a fundamental component of resilience. See Shocks

Shock: Sudden, sharp, disruptive events that threaten a community, organization or place. Examples include hurricanes, fires, floods, earthquakes, violence, terrorism, economic collapse (see Hazard). There is some fluidity between shocks and stressors, for example, rising temperatures associated with climate change can be seen as a stressor (as the long term trend undermines the ability of communities to cope with a variety of challenges) and a shock (for example when sudden heat waves occur that cause direct health problems and deaths).

Stakeholder: A person or group that can be directly or indirectly affected by the operations of the organization, and that may require or be able to provide assistance during disasters.

Strategy: A plan or sets of plans which collectively intend to achieve a defined goal or target. Specifically over a period of time.

Vulnerable populations: Disadvantaged sub-sections of a community, such as the economically disadvantaged, racial and ethnic minorities, the uninsured, low-income children, the elderly, the homeless, people with disabilities or chronic illness, etc.)

Resources

- [100 Resilient Cities](#)
- [B-Ready Building Resilience Assessment Tool](#)
- [Building Resilience-LA](#)
- [City Resilience Index](#)
- [Global Adaptation & Resilience Investment Working Group](#)
 - [“Bridging the Adaptation Gap: Approaches to Measurement of Physical Climate Risk and Examples of Investment in Climate Adaptation and Resilience”](#)
- [Enterprise Green Communities Ready to Respond Toolkit](#)
- [Green Star, Asset Resilience Innovation Challenge innovation-challenges/](#)
- [Insurance Council of Australia Building Resilience Rating Tool](#)
- [Insurance Institute for Home and Business Safety](#)
 - [“The Mutual Benefits of Business Continuity and Community Resilience”](#)
 - [Fortified](#)
- [International Disaster Database](#)
- [International Standards Organization](#)
 - [22316: 2017-- Security and Resilience:](#)
 - [22301-- Organization Business Continuity](#)
 - [31000--Risk Management](#)
- [Resilient Design](#)
- [Social Equity](#)
- [National Institute of Building Sciences “Natural Hazard Mitigation Saves: 2017 Interim Report”](#)
- [National Institute of Standards and Technology](#)
 - [Community Resilience Planning Guide](#)
 - [Community Resilience Economic Decision Guide](#)
- [PEER](#)
- [RAND Corporation](#)
 - [Community Resilience Toolkits](#)
 - [Resilience in Action](#)
 - [Resilience Dividend Valuation Model](#)
- [Resilience-based Earthquake Design Initiative \(REDi\) Rating System](#)
- [Resilience Action List and Credit Catalogue \(RELi\)](#)
- [Resilient Design Institute](#)
- [SASB Standards to Inform Enterprise Risk Management \(ERM\)](#)
- [Social Economic Environmental Design \(SEED\) Network](#)
- [World Business Council for Sustainable Development Social Capital Protocol](#)
- [Task Force for Climate-Related Financial Disclosure](#)
- [US Chamber of Commerce, Building Resilience 101 Workbook](#)
- [U.S. Federal Emergency Management Administration, Comprehensive Preparedness Guide 201: Threat and Hazard Identification and Risk Assessment Guide](#)
- [U.S. Department of Homeland Security, Leaders in Business Community Resilience](#)
- [U.S. Department of Homeland Security, Business Continuity Planning Suite](#)
- [United Nations Office of Disaster Risk Reduction](#)
 - [PreventionWeb](#)
 - [Private Sector Alliance for Disaster Resilient Societies \(ARISE\)](#)