



rule-comments@sec.gov

Kristina Wyatt, Senior Special Counsel, [REDACTED]

**COASTAL RISK CONSULTING, LLC, FEEDBACK, AND INPUT ON SEC
PROPOSED RULES AND GUIDANCE ON CLIMATE CHANGE DISCLOSURES**

Submitted by:

Coastal Risk Consulting, LLC

[REDACTED]

Albert J. Slap, President

[REDACTED]

Date: 05/03/2021

Dear Commissioner Lee:

Thank you for the opportunity to provide feedback and input to the SEC on Climate Change Disclosures. Coastal Risk Consulting is the developer of the RiskFootprint™ cloud-based, physical climate risk assessment technology, www.riskfootprint.com. RiskFootprint™ technology has recently been adopted by the US Green Building Council, as part of its platform for LEED and RELi certifications of green and resilient buildings in the United States. See, <https://arcskoru.com/new-tools-allow-arc-projects-understand-physical-risks>; and, <https://www.usgbc.org/articles/introducing-riskfootprint-enhancing-resilience-through-climate-risk-analysis>.

In your March 15, 2021 announcement, you wrote: “In light of demand for climate change information and questions about whether current disclosures adequately inform investors, public input is requested from investors, registrants, and other market participants on climate change disclosure.”

First and foremost, the SEC should understand that physical climate risks are actually one part of a two-sided coin. One side is the “carbon footprint” of physical assets (real estate, infrastructure) or “what a company’s CO2 emissions and carbon emitting activities are doing to the planet”. The other side of the same coin, however, is “what the planet is doing to the company’s physical assets.” See, “You Know Your Carbon Footprint, But Do You Know Your RiskFootprint?” <https://www.theinvadingsea.com/2020/10/04/you-know-your-carbon-footprint-but-do-you-know-your-riskfootprint/>.

Any new SEC climate impact disclosure requirements or guidance should address both sides of this coin. There are a number of software and software as a service platforms to assist companies in determining their carbon footprints (CO2 emissions), but not as many platforms that help companies understand the risks of floods, natural hazards, extreme weather, **and** climate change impacts. RiskFootprint™ is one of those new SaaS platforms. **See RiskFootprint™ Product Sheet attached as Exhibit 1.**

[REDACTED]

Beyond the disclosure of *qualitative* physical risks to buildings and properties of publicly-traded companies in the US (risk scores – low, medium, high), regulated entities also need to *quantify* those risks, as is reasonable, and report those quantified risks on an asset-by-asset basis. For those assets with high scores, the investing public should also understand what the owners of those assets are doing or planning to do in order to make the assets safer, more sustainable, and resilient. So, with the twin goals of “sustainability” and “resilience” in mind, the quantification of physical risks and the plans to reduce those risks should be as transparent and important to investors as are disclosures of CO2 emissions. Some thought leaders have remarked that “*resilience is the ultimate sustainability.*”

Simply disclosing to investors one side of the coin – namely, CO2 emissions and long-range threats from climate change – will not satisfactorily address current threats to public-company owned assets and the financial risks that extreme events impose on those companies if physical climate risks are concentrated in their portfolios.



The SEC has encouraged commenters to submit empirical data and other information in support of their comments. Original data from respondents, including academics, data providers, and other organizations, may assist in assessing the materiality of climate-related disclosures, and the costs and benefits of different regulatory approaches to climate disclosure.

Coastal Risk Consulting, LLC is providing responses below to the SEC’s Questions for Consideration:

1. How can the Commission best regulate, monitor, review, and guide climate change disclosures in order to provide more consistent, comparable, and reliable information for investors, while also providing greater clarity to registrants as to what is expected of them? Where and how should such disclosures be provided? Should any such disclosures be included in annual reports, other periodic filings, or otherwise be furnished?

Coastal Risk response: public companies in the US should be required by the SEC to undertake a careful and scientific review of their current and future CO2 emissions and the impact on their business operations from various future CO2 emission scenarios (RCPs).

Risks from future, global climate changes are important, but current and more near-term, physical climate risks, and consequent adverse financial impacts, may confront companies’ financial status much more immediately and substantially than what may happen 50–100 years from now. Public companies should be required to examine their complete portfolio of assets, now, to determine current flood risks, natural hazards (wind, tornado, wildfire, earthquake), extreme weather (tropical cyclones, extreme rain events, winter weather/freeze) **and** future (2050) climate impact risks, such as tidal flooding and sea level rise, future extreme heat, future extreme rainfall, and future risk of drought.



The SEC should identify “best available science” databases and methods to conduct such assessments, as well as existing public and private risk assessment tools, such as RiskFootprint™, which are currently available to assist public companies in these efforts. To the extent that such risks are identified in public companies’ portfolios, and those risks reach a level of financial impact that SEC deems material, then, the companies should also disclose their plans to mitigate those risks over time and identify capital expenditures required to make the assets safer, more sustainable, and resilient. Also, assets in corporate portfolios change over time and, databases and models of risk change, as well. So, it is prudent for SEC to require that public companies review physical climate risks to their assets at least annually.

Finally, more and more companies (public and private) are examining the resiliency of the cities and towns in which their facilities are located, as this may affect the financial health of corporate assets. In many cases, a locality’s public infrastructure is impacted by physical climate risks. How localities are dealing with these current and future risks and how resilient they are or are becoming is a major factor in the assessing the materiality of physical climate risks to public company assets located in those places and how viable those investments are over time.



2.

A. What information related to climate risks can be quantified and measured?

The RiskFootprint™ Report currently quantifies:

Flood risks from a variety of sources: pluvial, fluvial, poor drainage, tidal flooding, hurricane storm surge, tsunami, and FEMA regulatory flood zones.

Wind, tornado, wildfire, and earthquake; FEMA Community Rating Score (CRS); Future (2050) risks to buildings from extreme heat, extreme rainfall and risks of drought.

RiskFootprint™ will also be adding risks from FEMA’s new, National Risk Index (<https://www.fema.gov/flood-maps/products-tools/national-risk-index>), which now covers 18 specific natural hazards:

The FEMA NRI considers 18 natural hazards.

Avalanche	Hurricane	Tsunami
Coastal Flooding	Ice Storm	Volcanic Activity
Cold Wave	Landslide	Wildfire
Drought	Lightning	Winter Weather
Earthquake	Riverine Flooding	
Hail	Strong Wind	
Heat Wave	Tornado	

A copy of a RiskFootprint™ Report for the US Securities and Exchange Commission in Washington, DC, is attached as Exhibit 2.

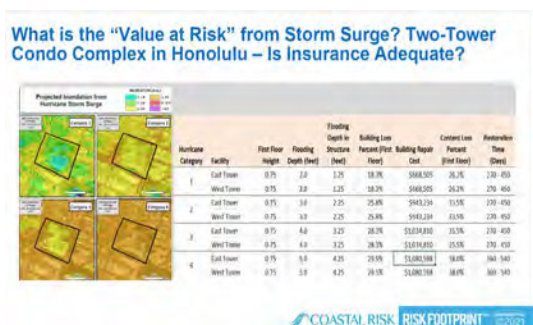


B. How are markets currently using quantified information?

While the RiskFootprint™ is a new product/service, it has been used by NOAA and the National Weather Service (NWS) to risk assess all of their buildings in the US, including Alaska, Hawaii, and Puerto Rico, as a part of regular and required property condition assessments (PCAs). Public REITs and Commercial Real Estate companies, as well as public banks and lending institutions, have used the quantified risk assessments to assist with:

- Portfolio risk management;
- New acquisitions and dis-acquisitions;
- Cost-benefit analysis of risk mitigation investments at the building level;
- Adequacy of insurance coverages;
- Loan underwriting – loan term, loan guarantees, loan-to-value, borrower insurance requirements;
- Planning for risk mitigation capex;
- Reporting programs such as UN’s Principles for Responsible Investment (PRI), Task Force on Climate Disclosures (TCFD), Sustainable Accounting Standards Board (SASB), etc. **A Whitepaper on how the RiskFootprint™ Climate Impact Risk Meters are used in PRI/TCFD Reporting programs is attached as Exhibit 3;**
- US Green Building Council LEED and RELi Certification Programs;
- Insurance broking – better explanation of risks to insurance customers.

In order for commercial real estate to determine if it should make physical climate risk mitigation investments (hardening assets), it needs to understand the “value at risk”. This is the “avoidable loss” or benefit part of a cost-benefit analysis. So, once physical climate risk assessments identify assets at highest risk, then, companies need to use the quantified risks (e.g., depth of inundation) to determine the avoidable loss. A “value at risk” table looks something like this:



C. Are there specific metrics on which all registrants should report (such as, for example, scopes 1, 2, and 3 greenhouse gas emissions, and greenhouse gas reduction goals)?

Examples of the following metrics can be obtained from RiskFootprint™:

- Percentage of portfolio properties that have high aggregate scores for physical climate risks;
- Percentage of portfolio properties that have high scores for specific, physical climate risks and that are material to the financial well-being of companies;
- Specific plans (and time frames) that companies have prepared to make “at risk” properties safer, more sustainable, and resilient.

D. What quantified and measured information or metrics should be disclosed because it may be material to an investment or voting decision?

- Aggregate physical climate risks in the portfolio of assets;
- Flood inundation risks in buildings in the portfolio;
- Impacts of current and future physical climate risks to the property and neighborhood around the assets;
- The resilience or lack thereof of the communities in which the assets are located.

E. Should disclosures be tiered or scaled based on the size and/or type of registrant)? If so, how?

- With new, fast and accurate assessment technologies, such as RiskFootprint™, public companies can easily and affordably assess both portfolios and individual buildings.
- RiskFootprint™ Reports are available in seconds for any property and any neighborhood in the US.
- The cost of the RiskFootprint™ Report starts at \$200/building, with the RiskFootprint™ Dashboard subscription, and costs/report are lower as volume increases.
- This price per property should be affordable for any public company.

F. Should disclosures be phased in over time? If so, how?

- Physical climate risk reports like RiskFootprint™ should be performed at least annually because both the assets in the portfolios and the databases and risk models change, as well. RiskFootprint™ physical climate risk reports are available now for every property, every building, and every piece of infrastructure (pipelines, electric grids, refineries, etc.) for a very reasonable cost.

G. How are markets evaluating and pricing externalities of contributions to climate change?

- While our experience is subjective and somewhat limited to our own client base, it appears that “early adopter” companies are using physical climate impact assessments (RiskFootprint™) to help make the following types of decisions:
 - whether or not to purchase an asset;
 - how to price the asset, given the risks;
 - capex needed to mitigate risk or renovate the property;
 - determine what loan underwriting requirements should be;
 - determine adequacy of past and future insurance coverages and premiums.

What's Automated Risk Assessment Good For, Anyway?

- 1 Buying - Are we paying too much?
- 2 Selling/Divesting - preparing a property for sale
- 3 Investing - Is this property a good investment?
- 4 Borrowing - Are Lender requirements reasonable?
- 5 Insuring- Are insurance coverages adequate?
- 6 Protecting - Protect value; Minimize business interruptions;
- 7 Disclosing - ESG/PRI/TCFD/SASB/SEC(?)



H. Do climate change related impacts affect the cost of capital, and if so, how and in what ways?

- In our limited experience, a few residential and commercial lenders have begun using RiskFootprint™ reports in their underwriting processes. It is yet unclear if or how this has affected the cost of capital in these specific use cases.

I. How have registrants or investors analyzed risks and costs associated with climate change?

- As stated previously, public companies, particularly REITs and Commercial Real Estate, are using the RiskFootprint™ physical climate risk assessments in the following ways, among others:
 - Acquisitions and dis-acquisition decision-making;
 - Capex planning for risk mitigation;
 - Evaluating insurance adequacy;
 - Reporting to PRI/TCFD, etc.;
 - Portfolio risk management;
 - Sizing up new markets for entry and location.

J. What are registrants doing internally to evaluate or project climate scenarios, and what information from or about such internal evaluations should be disclosed to investors to inform investment and voting decisions?

- All of the above, to our knowledge. Risk assessments that meet SEC's materiality threshold should be disclosed.

K. How does the absence or presence of robust carbon markets impact firms' analysis of the risks and costs associated with climate change?

- The presence or absence of a carbon market is not an issue to our clients who are ordering RiskFootprint™ Reports and using them in the ways described herein.

L. What are the advantages and disadvantages of permitting investors, registrants, and other industry participants to develop disclosure standards mutually agreed by them?

- The main problem with this approach is that physical climate risk disclosures should be based on the "best available science". Industry standard setting bodies often take a long time to set and revise standards and, in many cases, are not able to keep standards current, due to lack of resources. If the SEC requires that the registrants use "best available science" and outlines the types of information and metrics that it wants to see considered, then, the registrants will have greater flexibility to keep their assessments and actions current and up-to-date.

M. Should those standards satisfy minimum disclosure requirements established by the Commission?

- Yes



N. How should such a system work?

- The SEC could establish standard criteria and guidance for physical climate risk assessments and disclosures of material and relevant metrics (e.g., physical climate risk assessments must include portfolio level qualitative and building-level quantitative risk assessment for the following risks – pluvial flooding, fluvial flooding, hurricane storm surge, tidal flooding and sea level rise, wind, tornado, wildfire, earthquake, community resilience, etc.).
- The US Green Building Council sets standards and guidance for resilience in buildings (RELi standard). Standards like these could be used to establish criteria for risk assessments and minimum disclosure requirements (e.g., what percent of facilities that are critical to your company’s finances are in areas within the 500-year floodplain and within NOAA Category 2 storm surge inundation areas? What percentage of your critical assets are in a high-risk, tornado zone?)



O. What minimum disclosure requirements should the Commission establish if it were to allow industry-led disclosure standards?

- The minimum disclosure requirements should be the same.

P. What level of granularity should be used to define industries (e.g., two-digit SIC, four-digit SIC, etc.)?

- When dealing with physical climate risk disclosures, if an industry has physical assets that are material to its finances, then the risk assessments and disclosures should be the same regardless of which SIC code.

Q. What are the advantages and disadvantages of establishing different climate change reporting standards for different industries, such as the financial sector, oil and gas, transportation, etc.?

- See above

R. How should any such industry-focused standards be developed and implemented?

- See above

S. What are the advantages and disadvantages of rules that incorporate or draw on existing frameworks, such as, for example, those developed by the Task Force on Climate-Related Financial Disclosures (TCFD), the Sustainability Accounting Standards Board (SASB), and the Climate Disclosure Standards Board (CDSB)?

- All of these disclosure schemes mentioned are a good start. They seem to be “works in progress” and some, like SASB are undergoing substantial reviews, now, in order to bring them more in line with the “best science”.



- The SEC can set standards and guidance that are more flexible and allow for quicker uptake of “best science” in terms of models and databases. For example, SASB asks under “Climate Change Adaptation” for the “Area of properties located in FEMA Special Flood Hazard Areas or foreign equivalent by property subsector.” REAL ESTATE OWNERS, DEVELOPERS & INVESTMENT TRUSTS Sustainability Accounting Standard, March 2016, Provisional Standard. See attached as Exhibit 4.

It is widely acknowledged, even by FEMA itself, that the current FEMA Special Flood Hazard Areas have primary relevance to National Flood Insurance Program (NFIP) risk underwriting and premium setting and are not true, comprehensive flood risk models. For example, the FEMA flood zones do not include heavy rainfall flooding, NOAA storm surge inundation depths, tidal flooding, sea level rise, climate change, tsunami risks, rising groundwater, and poor drainage (local “run-on/run-off” models). These issues have been brought to SASB’s attention and, it is our understanding that SASB committees are reviewing its current standard (see below).

Climate Change Adaptation	Area of properties located in FEMA Special Flood Hazard Areas or foreign equivalent, by property subsector	Quantitative	Square feet (ft²)	IF0402-13
	Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks	Discussion and Analysis	n/a	IF0402-14

- Note that the RiskFootprint™ Report for the SEC Building located at 100 F Street Northeast, Washington, DC, attached as Exhibit 2, shows significant, heavy rainfall risks at the site and poor drainage, yet the building is squarely in the FEMA X zone or lowest FEMA flood risk area. So, if SEC registrants were advised to only report buildings in the FEMA 100-year flood zones, they would not report buildings with exposure to flooding from heavy rainfall (or tidal flooding and sea level rise). This reporting would, therefore, understate flood risks and be potentially misleading to investors seeking to better understand the impact of physical climate risks on their investments in public companies.

T. Are there any specific frameworks that the Commission should consider? If so, which frameworks and why?

- The RiskFootprint™ is a good template for the Commission to use to describe what “best science” assessments look like for physical climate risk assessments. See RiskFootprint™ Report for SEC Building, Exhibit 2.

U. How should any disclosure requirements be updated, improved, augmented, or otherwise changed over time?

- Again, the “best science” approach, with some standards and guidance from the SEC, provides the most flexibility and openness to updated databases and models, as the science and knowledge of our changing climate improves over time.



V. Should the Commission itself carry out these tasks, or should it adopt or identify criteria for identifying other organization(s) to do so?

- In our view, it would be best for the SEC to set its own standards and guidance using a flexible, “best science” approach. Other standard-setting organizations, such as ASTM, ASHRAE, USGBC, etc., have different missions that they are trying to fulfill. Some of those missions for particular standards may be broader or narrower than the SEC mission and focus.

W. If the latter, what organization(s) should be responsible for doing so, and what role should the Commission play in governance or funding?

- See approach described above.

X. Should the Commission designate a climate or ESG disclosure standard setter?

- See approach described above.

Y. If so, what should the characteristics of such a standard setter be?

- See approach described above.

Z. Is there an existing climate disclosure standard setter that the Commission should consider?

- See approach described above.

AA. What is the best approach for requiring climate-related disclosures? For example, should any such disclosures be incorporated into existing rules such as Regulation S-K or Regulation S-X, or should a new regulation devoted entirely to climate risks, opportunities, and impacts be promulgated? Should any such disclosures be filed with or furnished to the Commission?

- No comment.

BB. How, if at all, should registrants disclose their internal governance and oversight of climate-related issues? For example, what are the advantages and disadvantages of requiring disclosure concerning the connection between executive or employee compensation and climate change risks and impacts?

- No comment.

CC. What are the advantages and disadvantages of developing a single set of global standards applicable to companies around the world, including registrants under the Commission’s rules, versus multiple standard setters and standards?



- Here in the US, we have both proprietary and open-source datasets and models that may be more advanced, more granular, more accurate, more updated, and more actionable than those available in other countries. We should use all of these datasets and models to make the SEC physical climate risk disclosure standards and guidance the closest to “best science” possible and help both registrants and investors make better decisions.

DD. If there were to be a single standard setter and set of standards, which one should it be?

- See comments above.

EE. What are the advantages and disadvantages of establishing a minimum global set of standards as a baseline that individual jurisdictions could build on versus a comprehensive set of standards? If there are multiple standard setters, how can standards be aligned to enhance comparability and reliability?

- See comments above.

FF. What should be the interaction between any global standard and Commission requirements? If the Commission were to endorse or incorporate a global standard, what are the advantages and disadvantages of having mandatory compliance?

- See comments above.

GG. How should disclosures under any such standards be enforced or assessed? For example, what are the advantages and disadvantages of making disclosures subject to audit or another form of assurance? If there is an audit or assurance process or requirement, what organization(s) should perform such tasks?

- No comment.

HH. What relationship should the Commission or other existing bodies have to such tasks? What assurance framework should the Commission consider requiring or permitting?

- No comment.

II. Should the Commission consider other measures to ensure the reliability of climate-related disclosures? Should the Commission, for example, consider whether management’s annual report on internal control over financial reporting and related requirements should be updated to ensure sufficient analysis of controls around climate reporting? Should the Commission consider requiring a certification by the CEO, CFO, or other corporate officer relating to climate disclosures?

- No comment.



JJ. What are the advantages and disadvantages of a “comply or explain” framework for climate change that would permit registrants to either comply with, or if they do not comply, explain why they have not complied with the disclosure rules? How should this work? Should “comply or explain” apply to all climate change disclosures or just select ones, and why?

- No comment.

KK. How should the Commission craft rules that elicit meaningful discussion of the registrant’s views on its climate-related risks and opportunities? What are the advantages and disadvantages of requiring disclosed metrics to be accompanied with a sustainability disclosure and analysis section similar to the current Management’s Discussion and Analysis of Financial Condition and Results of Operations?

- No comment.

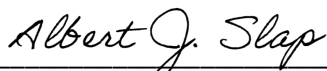
LL. What climate-related information is available with respect to private companies, and how should the Commission’s rules address private companies’ climate disclosures, such as through exempt offerings, or its oversight of certain investment advisers and funds?

- No comment.

MM. In addition to climate-related disclosure, the staff is evaluating a range of disclosure issues under the heading of environmental, social, and governance, or ESG, matters. Should climate-related requirements be one component of a broader ESG disclosure framework? How should the Commission craft climate-related disclosure requirements that would complement a broader ESG disclosure standard? How do climate-related disclosure issues relate to the broader spectrum of ESG disclosure issues?

- See discussion, above. By and large, ESG disclosures in the “E” category, have focused on the first side of the two-sided coin described above, namely, CO2 emissions, and not physical climate risks that are impacting or may impact real estate assets in the future.

Respectfully submitted,



Albert J. Slap, President
Coastal Risk Consulting, LLC



NEW! ARE PHYSICAL CLIMATE RISKS
CONCENTRATED IN MY PORTFOLIO?
FIND OUT WITH THE RISKFOOTPRINT™ PORTAL.



Ex. 1

The Future of Physical Climate Risk Reporting for Asset & Portfolio Analysis Is Here

We provide quick and accurate comprehensive assessments of floods, natural hazards, and climate change impacts for properties anywhere you own real estate. Our state-of-the-art reports combined with our industry leading advisors help you to accelerate climate resilience.



Asset Level
Reports



Portfolio View
& Analysis

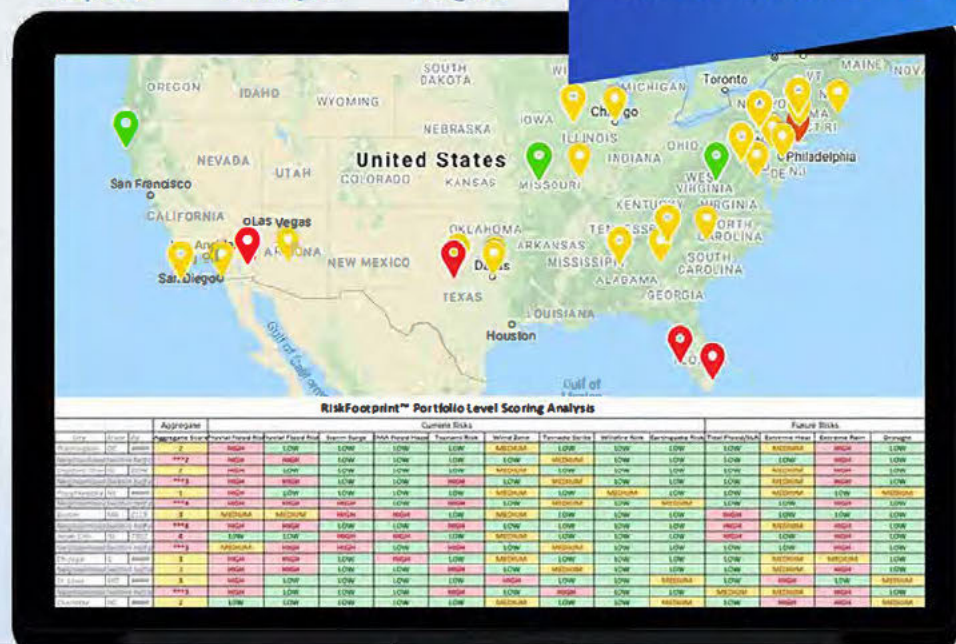


Actionable
Insights

Tailor-Made for REITs,
Commercial Real Estate
Owners, Operators &
Investors, ESG Funds and
Commercial Lenders

Real Estate Portfolio Risk Report Dashboard

Improve your due diligence with a fully integrated dashboard tailor-made to empower REITs, Commercial Real Estate Owners, Operators & Investors, ESG Funds, Commercial Lenders with actionable data & reports for your portfolio. Our proprietary technology determines your physical climate risks and vulnerability.



Interactive Map
Clickable map displays assets and qualitative risk score

Instant Reports
Enter new property locations to access new reports in just a few clicks

Secure Data
Private & Secure web portal with Amazon Cloud

24/7 Access
Access your private dashboard, data and reports anytime

Current Risks
9 Nine Columns of Current Risk Quantitative & Qualitative Data

Future Risks
4 Four Columns of Current Risk Quantitative & Qualitative Data

Aggregate Score
1 One Aggregate Score for your Portfolio and Acquired Assets



Understand Your Portfolio Risks and Asset Specific Solutions

We provide an easy-to-use, private and secure website portal subscription, with a customer dashboard providing access to proprietary RiskFootprint™ Reports for each asset in your portfolio. Our reports help you make informed decisions about buying, selling, insuring, and protecting your real estate assets.

Existing Assets & New Acquisitions

Are you in the process of acquiring properties with significant physical climate risks? Your web portal subscription provides actionable data on both your existing portfolio and serves as a resource in identifying the climate risk exposure of assets under consideration and potential acquisitions.

Asset Reports & Metrics

Our secure web portal subscription provides you with both portfolio and asset-level analysis and reporting. We also provide qualitative Spreadsheets, and quantitative reporting through our RiskFootprint™ Reports. No other tool provides a risk assessment for specific properties and neighborhoods, and individual RiskFootprint™ Reports for each real estate asset in your portfolio.

Geographically Mapped Assets

View existing assets on an interactive map with tabulated data, color-coded by individual or aggregate risks below. Reports outline current and future vulnerability for each asset in your portfolio of real estate, businesses, commercial loans or industrial sites, organized by neighborhood, municipality, or geographic region.

Compare & Contrast Reports

Compare and contrast results with Elevation Certificates, FEMA flood maps, and your own construction drawings. Evaluate results property-to-property, or review your portfolio comprehensively.

Actionable Insights

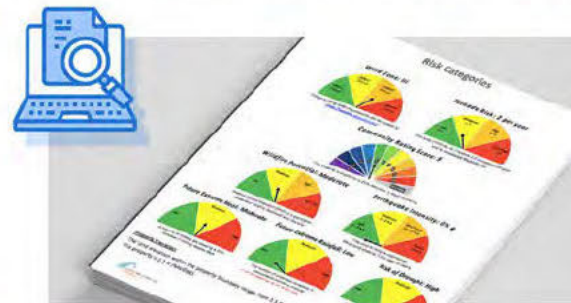
Through our robust reporting, you save time and potential costs with quantitative, property-specific reports, improving decision-making and risk mitigation for your portfolio of investments. Need more? Our industry-leading advisors can help you with our 6-step B-Resilient™ process.

When it comes to climate risk, knowledge is power.

The more informed you are, the more proactive you can be in taking steps to protect your investment portfolios' market value, reputation and bottom line. No other risk assessment tech company provides all of this actionable data and analytics in one platform, plus resilience-accelerating advisory services ready and at your service.



City	Aggregate Risk	Physical Flood Risk	Physical Flood Risk	Storm Surge	Total Flood Risk	Current Risk	FEMA Flood Map
1	High	High	High	High	High	High	High
2	High	High	High	High	High	High	High
3	High	High	High	High	High	High	High
4	High	High	High	High	High	High	High
5	High	High	High	High	High	High	High
6	High	High	High	High	High	High	High
7	High	High	High	High	High	High	High
8	High	High	High	High	High	High	High
9	High	High	High	High	High	High	High
10	High	High	High	High	High	High	High
11	High	High	High	High	High	High	High
12	High	High	High	High	High	High	High
13	High	High	High	High	High	High	High
14	High	High	High	High	High	High	High
15	High	High	High	High	High	High	High
16	High	High	High	High	High	High	High
17	High	High	High	High	High	High	High
18	High	High	High	High	High	High	High
19	High	High	High	High	High	High	High
20	High	High	High	High	High	High	High



Coastal Risk is the first, and only, company with a proven track record of professional-grade flood and climate risk analysis at an individual property and portfolio level.
2385 NW Executive Center Drive, Suite 100, Boca Raton, FL 33431

WE'RE HERE TO HELP

RISK FOOTPRINT™ REPORT

Accelerate Your Resilience

PROPERTY DETAILS:**REPORT DATE & DETAILS:**

Date: May 1, 2021

Status: Complete



weather.gov



noaa.gov

Washington, District of Columbia



		Current Risks										2050 Risks			
		Aggregate	Pluvial	Fluvial	Storm Surge	FEMA	Tsunami	Wind Zone	Tornado	Wildfire	Earthquake	Tidal Flood/SLR	Extreme Heat	Extreme Rain	Drought
Property:	2	High	Low	Low	Low	Low	Medium	Medium	Low	Low	Low	High	Medium	Low	
Neighborhood:	3	High	High	Low	Medium	Low	Medium	Medium	Low	Low	Low	High	Medium	Low	

REPORT SUMMARY

Heavy Rainfall Flood Risk | Poor Drainage Areas

Riverine Flood Risk | FEMA Flood Hazard Zones

Risk Categories and Ratings

Tidally Influenced Flooding Potential

Storm Surge and Inundation Risk

RiskFootprint™ Glossary & References

QUESTIONS?

WE'RE HERE TO HELP

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RISK FOOTPRINTTM REPORT



5/1/2021

Dear US Securities and Exchange Commission,

Thank you for purchasing the RiskFootprintTM Report. You have taken an important step to better understand the flood, natural hazard, and climate change risks facing your property. Information contained in this report will empower you to make your property safer and more resilient and protect its market value in a changing environment.

The RiskFootprintTM Report is generated from our automated, proprietary model that screens properties for a variety of potential hazards and provides actionable intelligence for typical due diligence and risk mitigation decisions concerning buying, selling, investing, lending, insuring or protecting properties.

If your RiskFootprintTM Report indicates that your property faces risks, our Advisory Services team of professionals can assist you with our six-step, [B-ResilientTM](#) process to take appropriate cost-effective mitigation and adaptation actions.

If you would like to find out more about our cutting-edge products and services, contact [REDACTED].

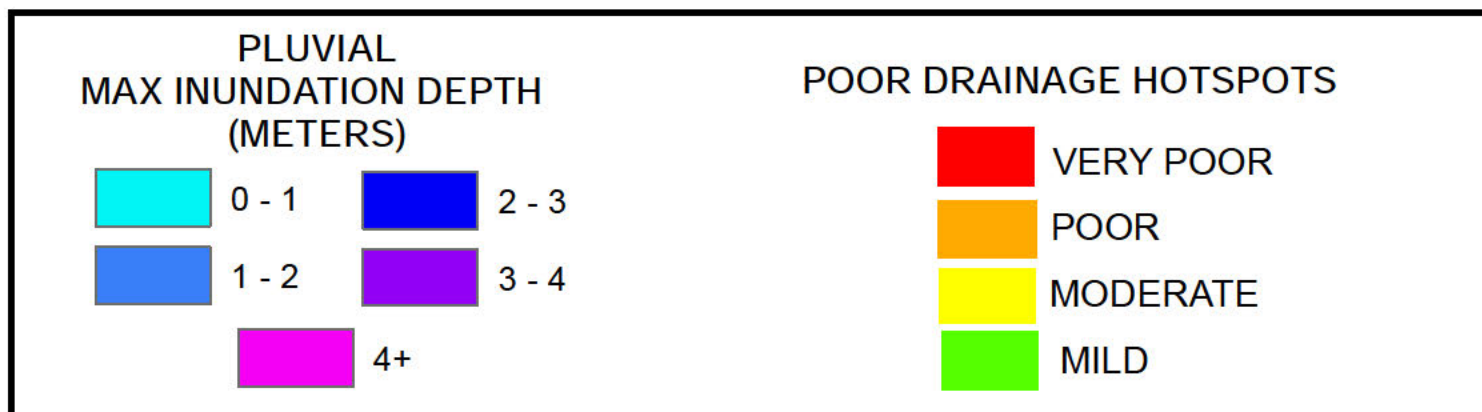
Sincerely,

Albert J. Slap, President

[REDACTED]

www.riskfootprint.com

HEAVY RAINFALL (PLUVIAL) FLOOD RISK and POOR DRAINAGE AREAS



1000-Year Interval Pluvial Flood Risk*

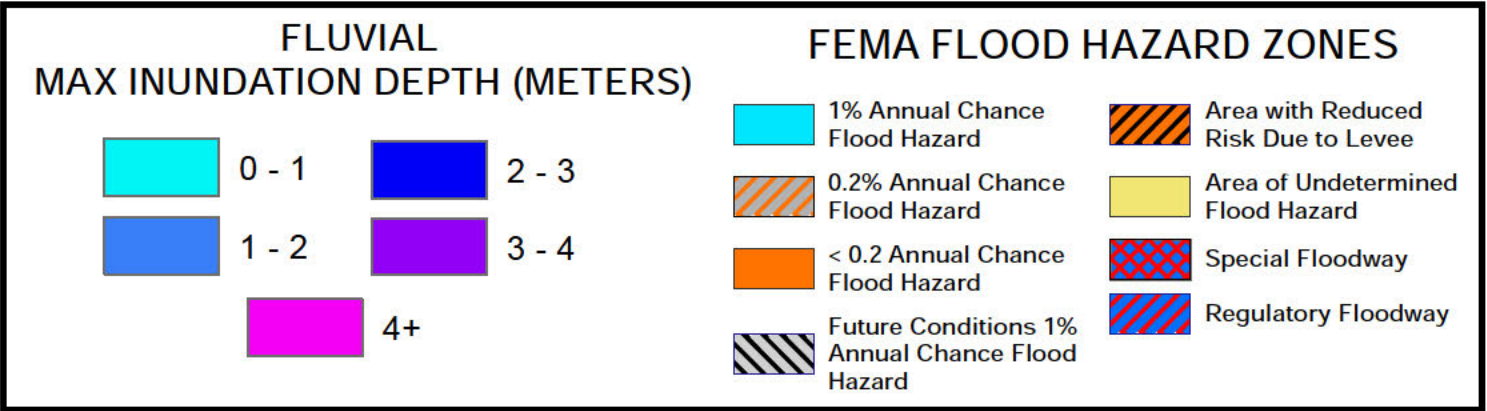
See note re: Fathom Maps on page 8



Poor Drainage Hotspots

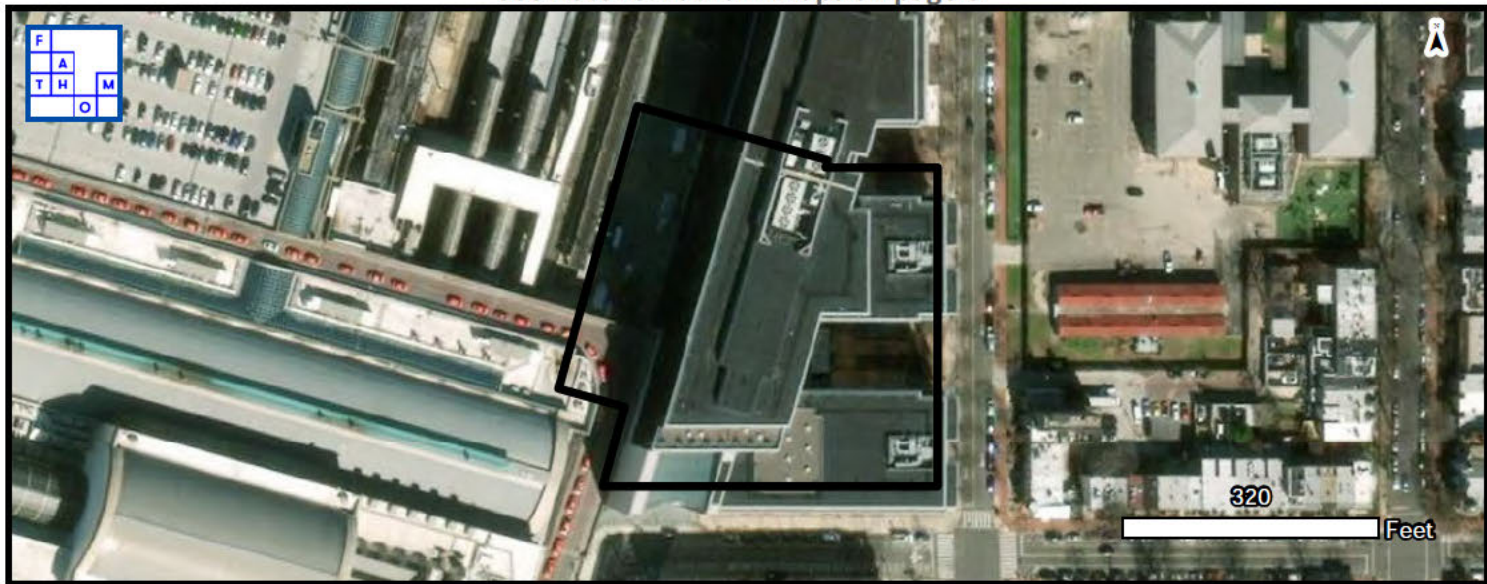


RIVERINE (FLUVIAL) FLOOD RISK and FEMA FLOOD HAZARD ZONES



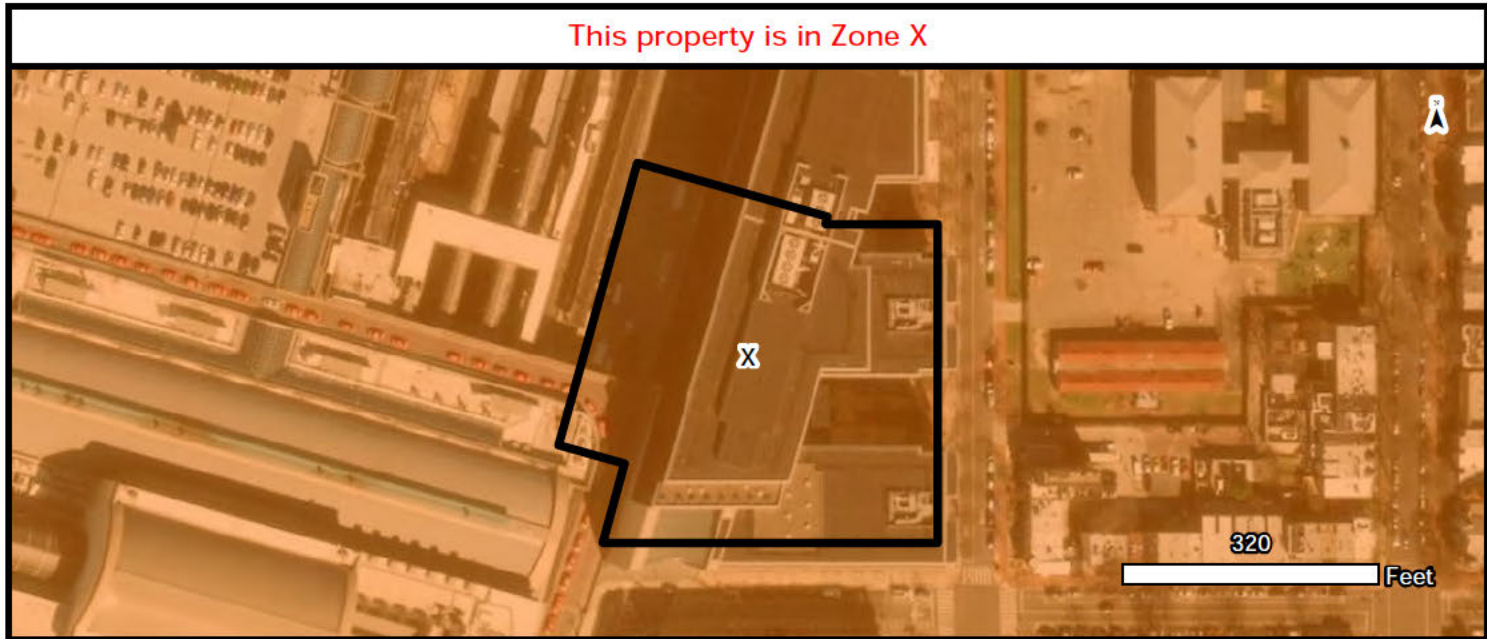
1000-Year Interval Fluvial Flood Risk*

See note re: Fathom Maps on page 8



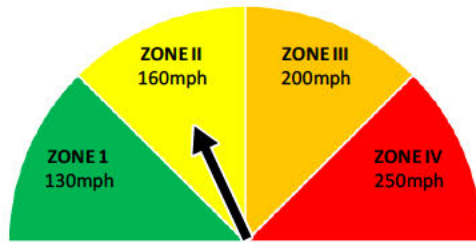
FEMA Flood Hazard Zones

This property is in Zone X

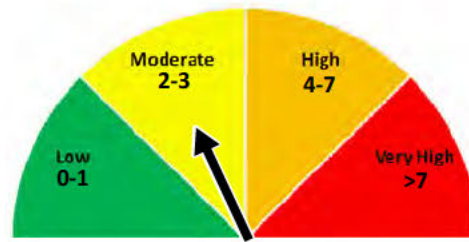


Natural Hazards and Climate Change Impacts

Wind Zone: II



Tornado Risk: 3 occurrence(s)



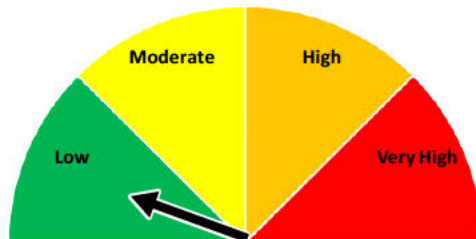
The 1,000-square-mile area surrounding the property has recorded 3 EF2 or higher tornadoes in the past 30 years

Community Rating Score: 0



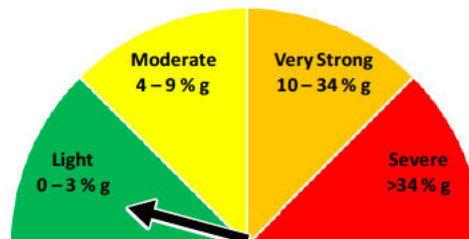
This property is not eligible for a reduction in flood insurance

Wildfire Potential: Low



Wildfire Potential is a measure of wildfire likelihood and intensity

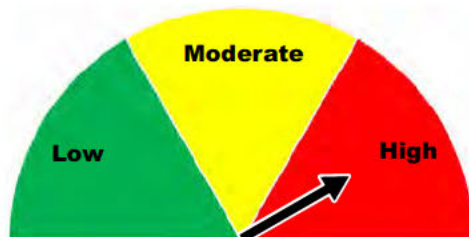
Earthquake Intensity: 1% g



This area is likely to experience Light ground shaking in the next 50 years

Future Climate Change Impacts

2050 Extreme Heat: High



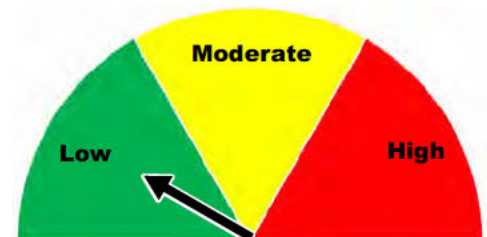
More than 75% of models are predicting a 20% increase in cooling degree days.

2050 Extreme Rainfall: Moderate



25% to 75% of models are predicting a 20% increase in the number of 5-year or greater precipitation events.

2050 Drought: Low



Less than 25% of models are predicting a 5% increase in drought months.

Property Elevation:

The land elevation within the property boundary ranges from 31 ft to 42.5 ft. The average elevation of this property is 38.1 ft. Elevations using North American Vertical Datum of 1988 (NAVD 88)

Tidally-Influenced Flooding Potential*

*The RiskFootprint™ model assumes no levees, berms, or barriers (sea walls) or sub-surface storm water systems (active or passive) to stop tidal water intrusion in the highlighted area.

Maximum Inundation Due to Sea Level Rise

Maximum Inundation represents the highest modeled value of tidal waters within property boundary

Flood Days are reported when at least 10% of property has been inundated

INUNDATION (AGL)

0 - 1 ft	4 - 8 ft
1 - 2 ft	8 - 12 ft
2 - 4 ft	> 12 ft

NAVD88 - North American Vertical Datum of 1988 AGL - Above Ground Level



Storm Surge

Maximum Possible Hurricane Storm Surge (2021)

Per data from the US National Hurricane Center:
Annual probability of Category 1 winds and higher: **N/A**
Annual probability of Category 3 winds and higher: **N/A**

INUNDATION (AGL)



NAVD88 - North American Vertical Datum of 1988 AGL - Above Ground Level



RiskFootprint™ Glossary and References

Page 3 – PLUVIAL (HEAVY RAINFALL) FLOOD RISK. Potential for heavy rainfall flooding above ground level (AGL) of the property with 0.1% probability. The term “1,000-year flood” means that, statistically speaking, a flood of that magnitude (or greater) has a 1 in 1,000 chance of occurring in any given year. In terms of probability, the 1,000-year flood has a 0.1% chance of happening in any given year. These statistical values are based on observed data. https://www.usgs.gov/faqs/what-a-1000-year-flood?qt-news_science_products=0#qt-news_science_products.

Page 3 - POOR DRAINAGE HOTSPOTS – “Poor Drainage Hotspots” identifies hyper-local areas of a property where water from heavy rainfall will tend to pond and fail to drain properly, sometime resulting in standing water for days. The RiskFootprint™ report uses a high-resolution elevation model along with soil and groundwater data from the Natural Resources Conservation Service to assign risk within our proprietary, flood hotspot methodology ([NRCS drainage classes](#)).

FATHOM PLUVIAL (HEAVY RAINFALL) & FLUVIAL (RIVERINE) FLOOD PROBABILITY

(<https://www.fathom.global>). Fathom has pioneered methods using leading research and the latest datasets to model flood risks for both fluvial and pluvial perils. The dataset we use from Fathom-US incorporates the latest available inputs and the methodology has been validated via the peer-review process and published in world-leading journals. Fathom-US was validated against the entire FEMA flood hazard catalogue, identifying that current FEMA data misses around two thirds of total flood exposure nationwide. Fathom’s pluvial models also represent flash-flooding nationwide. While representing flood defenses is important in dimensioning risks, existing defense datasets are substantially incomplete. Flood defense datasets will be updated as available. **NOTE THAT FLOOD DEFENSES IN THE MODELS MAY INDICATE A LOWER RISK OF FLOODING AT A PARTICULAR LOCATION. FLOOD DEFENSES, HOWEVER, MAY OR MAY NOT BE OPERATIONAL OR COMPETENT AT ANY GIVEN TIME AND, FLOOD WATERS MAY OVERTOP DEFENSES, THEREBY FLOODING AREAS WITH LOWER MODELLED RISKS.**

Page 4 – FLUVIAL (RIVERINE) FLOOD RISK. Potential for river flooding above ground level (AGL) of the property with 0.1% probability as a result of an overflowing river.

FEMA FLOOD HAZARD BOUNDARIES– ([overview](#)) ([definitions](#)) These zones are derived from the National Flood Hazard Layer (NFHL) depicted on a community's Flood Insurance Rate Map (FIRM), or, where available, derived from the FEMA Preliminary Flood Hazard Data Each zone reflects the severity or type of flooding in the area. This updated version of FEMA maps includes areas that FEMA has determined are protected by levees or other flood defenses. **NOTE THAT FLOOD DEFENSES IN THE FEMA MAPS MAY INDICATE A LOWER RISK OF FLOODING AT A PARTICULAR LOCATION. FLOOD DEFENSES, HOWEVER, MAY OR MAY NOT BE OPERATIONAL OR COMPETENT AT ANY GIVEN TIME AND, FLOOD WATERS MAY OVERTOP DEFENSES, THEREBY FLOODING AREAS WITH LOWER MODELED RISKS.**

While the RiskFootprint™ Report helps you dimension risk of loss from flood hazards and better understand insurance needs, it is not appropriate for insurance placement using the National Flood Insurance Program (NFIP), which exclusively utilizes effective FEMA flood maps for underwriting. Because FEMA flood maps change frequently and may be in the process of being updated, we recommend that you check with FEMA or your insurance agent to obtain the most up-to-date FEMA flood zone determination for your property. However, most commercial and industrial buildings do not rely on NFIP insurance. So, FEMA flood maps are only one view of flood risks among others presented herein. Note that older buildings may not have their first-floor heights (FFE) above the FEMA Base Flood Elevation (BFE).

Page 5 – NATURAL HAZARD AND CLIMATE CHANGE RISK METERS

FEMA WIND ZONES – ([website](#)) The United States is divided into four Wind Zones created by FEMA for construction purposes throughout the country. Buildings in their respective wind zones must be able to withstand the maximum wind speed as indicated by FEMA. Note that older buildings may not have been designed to these standards.

COMMUNITY RATING SYSTEM – ([website](#)) The Community Rating System (CRS) awards points for steps taken by municipalities to manage the flood plain to reduce the community's risk. Flood insurance rates are discounted for participating municipalities that have accumulated points, thereby saving homeowner’s on NFIP flood insurance premiums. You should make sure your insurance agent is providing you with the appropriate discount.

WILDFIRE POTENTIAL – ([website](#)) Based on the US Forest Service’s 2020 Wildfire Risk to Communities Product, Risk to Potential Structures dataset

TORNADO FREQUENCY – ([website](#)) Tornado historical data is based on the NOAA National Weather Service (NWS) Storm Prediction Center’s (SPC) severe report database which compiles tornado occurrences.

EARTHQUAKE INTENSITY – ([website](#)) Based on the USGS Earthquake Hazard Program - National Seismic Hazard Mapping Project (NSHMP) and depicts areas using peak ground acceleration (PGA) as its parameter and standard gravity (g) as its measure.

Resilient Analytics Climate Risk Projections (<https://resilient-analytics.com/>) - In order to make future climate risk projections more actionable and relevant to building owners/operators/investors, Resilient Analytics has developed a proprietary, building component and engineering-based, climate risk assessment methodology that combines engineering guidelines with IPCC-approved climate models. The dataset used in this process is generated through peer-reviewed and published methodologies and is based on the latest climate projections, current engineering approaches, and the latest Department of Energy models.

2050 Extreme Heat

This meter indicates extreme heat risks related to the increase in energy requirements to cool buildings from 2021 to 2050. This methodology employs an annual analysis of LOCA-downscaled projected temperatures resulting in increased cooling requirements compared with historical averages. The projected cooling degree days generate an increase in cooling energy demand at the local site. Cooling degree days measure how much (in degrees), and for how long (in days), outside air temperature is higher than 65°F. For example, on a day when the average outdoor temperature is 85° F, reducing the indoor temperature to 65°F would require 20 degrees of cooling multiplied by 1 day, or 20 cooling degree days. The number of cooling degree days is one input for estimating future demand for energy to maintain comfortable indoor environments.

2050 Extreme Rainfall

This meter indicates extreme rainfall risk from 2021 to 2050 related to heavy rainfall and localized flooding from events that produce more rain than a once-in-five-year rain event. As the projected number of precipitation events increases, the risk of façade and roof damage and localized flooding increases. This methodology employs an annual analysis of LOCA downscaled projected rainfall events focusing on events resulting in a minimum of a once-in-five-year flood risk, compared with historical localized flood events.

2050 Risk of Drought

This methodology employs a model related to deviations from the historical average of drought months and precipitation levels based on the Standard Precipitation. Increased drought could place a building at risk for increased water costs and reduced water availability. The Index is derived from daily LOCA-downscaled precipitation projections to determine 12-month averages and projected risk levels.

RESILIENT ANALYTICS SOURCES:

LOCA (Localized Constructed Analogs) is a statistical downscaling technique that uses historical data to add improved fine-scale detail to global climate models. LOCA was used to downscale 32 global climate models from the CMIP5 archive at a 1/16th degree spatial resolution, from Central Mexico through Southern Canada. Loca.ucsd.edu

ASHRAE Climate Zone Definitions – [Determining-ASHRAE-Climate-Zones](#)

Page 6 – TIDALLY-INFLUENCED FLOODING POTENTIAL – Potential for “sunny day flooding” on the property in 2020, 2035 and 2050, modeled in terms of “flood days” – days when 10% or more of the property is inundated above ground level because of high tides and sea level rise (website). The RiskFootprint™ Report applies local NOAA tidal gauge data to model inundation onto your property due to tidal flooding in correspondence with future projected sea level rise using the NOAA Regional Sea Level Rise Model.

https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf. The RiskFootprint™ model assumes no levees, berms, or barriers (sea walls) or sub-surface storm water systems (active or passive) to stop tidal water intrusion in the highlighted area. **THE MODEL, THEREFORE, MAY SHOW CURRENT OF FUTURE RISKS TO A PROPERTY THAT ARE OR WILL BE AMELIORATED BY PUBLIC OR PRIVATE RISK MITIGATION INVESTMENTS.**

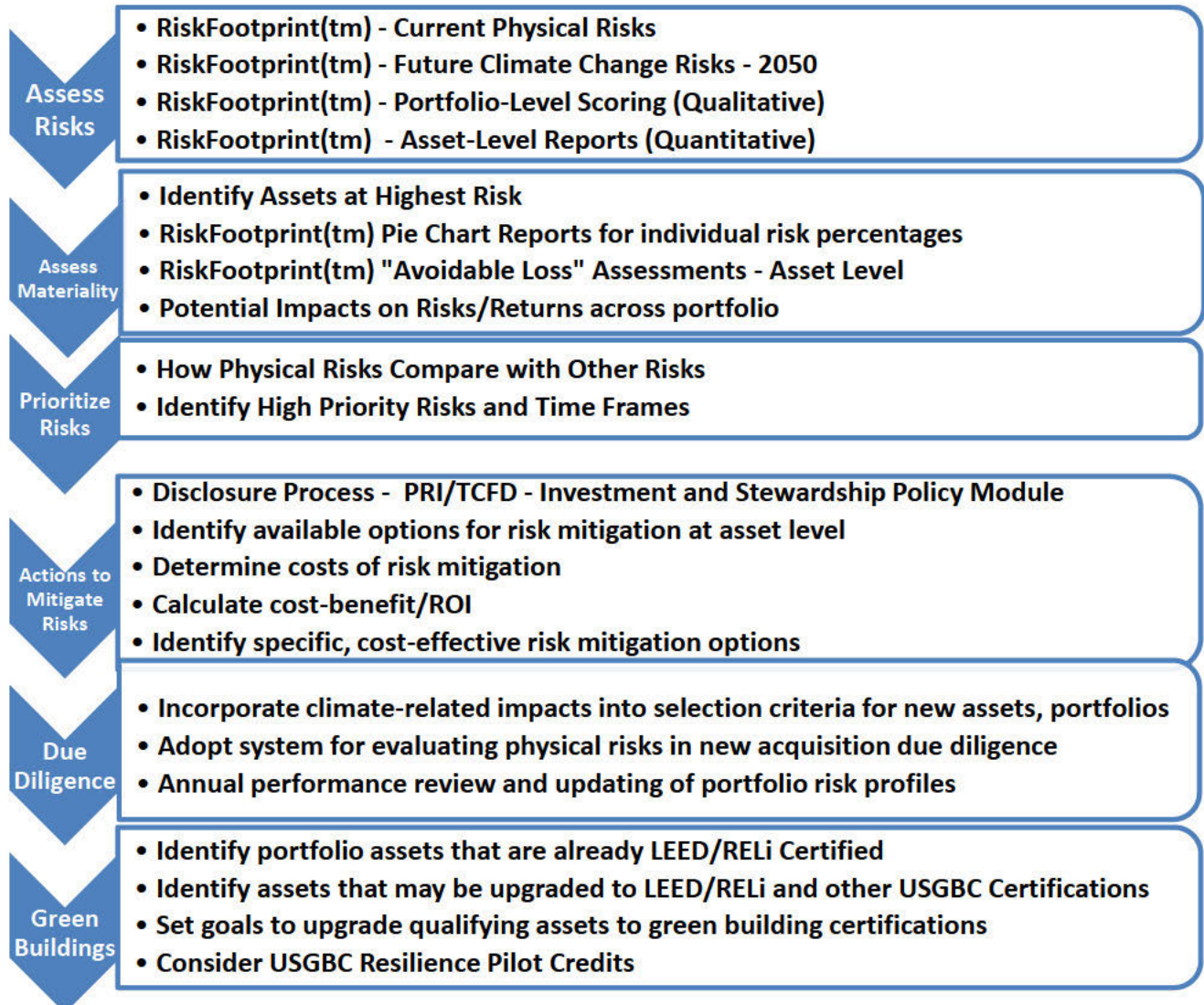
Page 7 - HURRICANE STORM SURGE – Potential for current flooding on the property in 2020 because of the wind field that drives hurricane storm surge ([overview](#)). The RiskFootprint™ Report utilizes NOAA National Storm Surge Maps (Ver. 2) to identify maximum inundation levels for each property above the ground level. The data is derived from The Sea, Lake and Overland Surges from Hurricanes (SLOSH) model that estimates storm surge heights resulting from hurricanes by considering the atmospheric pressure, size, forward speed, and track data. <https://www.nhc.noaa.gov/nationalsurge/>.

HISTORIC HURRICANE STRIKE PROBABILITY – The Risk Footprint™ Hurricane Strike statistics are derived from 110 years of climatological data from the National Hurricane Center. <https://www.nhc.noaa.gov/aboutnhcprobs5.shtml>.



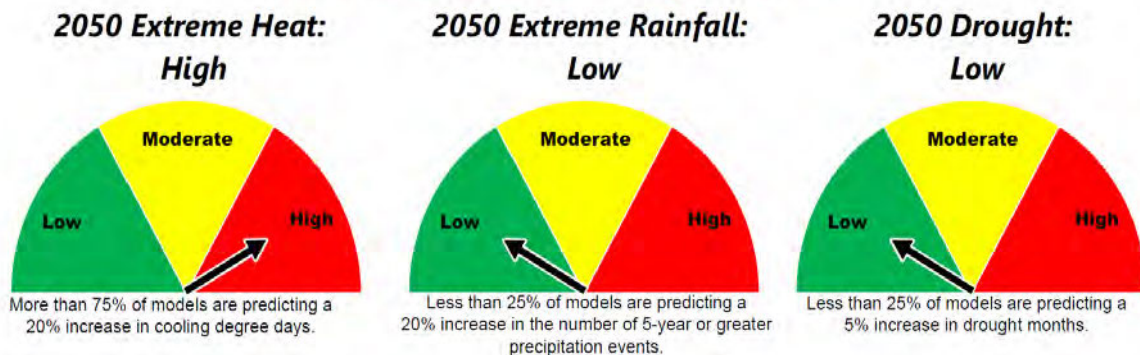
RISK FOOTPRINT™

How the RiskFootprint™ Integrates Into the PRI/TCFD Process



RISKFOOTPRINT™ AND PRI/TCFD SCENARIO REPORTING

Future Climate Change Impacts



Here is how the RiskFootprint™ 3 Climate Change Impact Meters (2050) relate to the PRI/TCFD scenario analyses in the Investment and Stewardship Policy Module (ISP 33 and ISP 33.1):

The RiskFootprint™ Climate Meters are created from a meta-analysis of >30 climate studies using RCPs. The Climate Meters enable organizations to meet the scenario planning considerations detailed in the reporting requirements for TCFD¹ and PRI². The meters include the scenario projections for: 1) a below 2-degree temperature increase; 2) a 2–4-degree temperature increase; and, 3) a greater than 4-degree increase. The combined scenarios in the RiskFootprint™ Climate Meters provide actionable, planning tools for asset owners, managers, investors, and others regarding future climate change projections. The Climate Meters provide a starting point for developing scenario-based action plans at 5-year (short-term), 10-year (medium-term), and 15-year (long-term) planning horizons. The combination of these multiple scenarios and multiple planning horizon considerations provides an initial filter to determine if facilities are prepared for the environmental impacts of climate change and, they enable organizations to successfully report on climate-based vulnerabilities and strategies.

¹ TCFD specifically recommends using 2 degree or lower scenario as well as two or three other scenarios most relevant to the organization circumstance.

² PRI requires three scenarios be considered to qualify for points in Core Indicator ISP 33.

The level of risk indicated on each meter provides an indication of how planning needs to occur. HIGH ratings indicate an immediate need to start preparing for potential impacts to properties. The specific areas of concerns for each meter are as follows. An example RiskFootprint™ Report is attached as Exhibit “A”.

Future Extreme Precipitation Risks -

A HIGH level on the meter projects that the facility will have impacts to the physical structure as well as potential water infiltration into basement and foundation zones. Planning, maintenance, and operational plans should be put in place within the next five years to effectively upgrade the facility against these 1-in-5 year or greater events. Then a plan that is 10-15 years out should be put in place for replacing systems and increasing capacity once the large increases are projected after 2030. The lower levels on the meters do not mean to ignore these actions, but rather the 5-year plan should be developed and be put in reserve in case the projections are moving to the actual case.

Future Extreme Heat Risks –

As with precipitation, 5-year and then 10-15-year plans should be developed as soon as possible. However, this requires additional considerations for energy availability, potential opportunities to integrate alternative energy, and possibly considering the sale of an asset, if the risk of energy availability is too great. This also requires an identification of potential hazardous impacts on workers who are exposed to increasing temperatures. This means two implementation plans - one for the building, physical equipment, and energy impacts and one for human asset exposure.

Future Risk of Drought –

This meter indicates to a company that planning needs to occur, if the facilities are at risk for water availability – either irrigation for landscaping and/or potable water supplies.



As with all of the environmental risk scores and quantifications in the RiskFootprint™ Dashboard, they are products of screening level models. Thus, they are meant to be the beginning of proper due diligence evaluations, not the end. The RiskFootprint™ portfolio scoring and reports must also be put into the proper context by factoring in: (1) all of the physical hazards; (2) the specific property/building and its unique strengths and vulnerabilities; (3) the people and companies involved and their financial strength (and insurance coverages); and (4) the resilience of the community in which the property is located (or lack thereof).

Resilient Analytics Climate Risk Projections (<https://resilient-analytics.com/>) - In order to make future climate risk projections more actionable and relevant to building owners/operators/investors, Resilient Analytics has developed a proprietary, building component and engineering-based, climate risk assessment methodology that combines engineering guidelines with IPCC-approved climate models. The dataset used in this process is generated through peer-reviewed and published methodologies and is based on the latest climate projections, current engineering approaches, and the latest Department of Energy models.

2050 Extreme Heat

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2050 Extreme Rainfall

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2050 Risk of Drought

This methodology employs a model related to deviations from the historical average of drought months and precipitation levels based on the Standard Precipitation. Increased drought could place a building at risk for increased water costs and reduced water availability. The Index is derived from daily LOCA-downscaled precipitation projections to determine 12-month averages and projected risk levels.

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Sources:

Loca.ucsd.edu

ASHRAE Climate Zone Definitions – [Determining-ASHRAE-Climate-Zones](#)



RISK FOOTPRINT™ REPORT

Accelerate Your Resilience

PROPERTY DETAILS:

REPORT DATE & DETAILS:

Date: February 17, 2021

Status: Complete

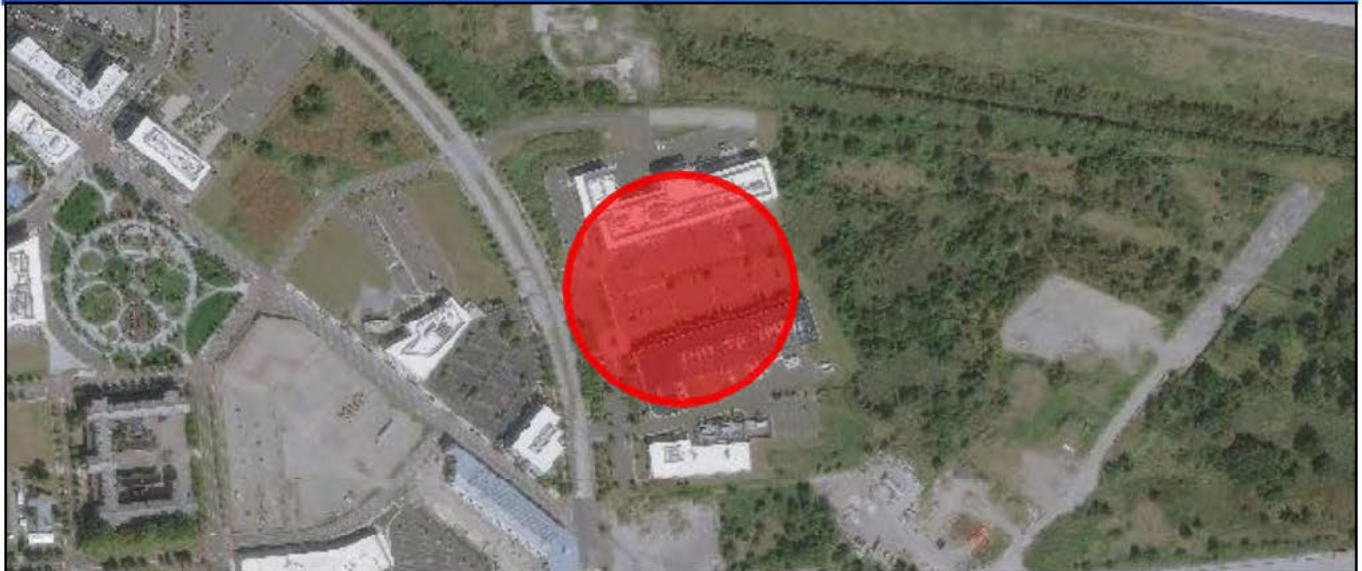


weather.gov



noaa.gov

Philadelphia, Pennsylvania 19112



		Current Risks										2050 Risks				
		Aggregate	Pluvial	Fluvial	Storm Surge	FEMA	Tsunami	Wind Zone	Tornado	Wildfire	Earthquake	Tidal Flooding	SLR	Extreme Heat	Extreme Rain	Drought
Property:	5	Medium	High	Medium	High	Low	Medium	Medium	Low	Low	High	High	High	Low		
Neighborhood:	7	High	High	High	High	Low	Medium	Medium	Medium	Low	High	High	High	Low		

REPORT SUMMARY

Heavy Rainfall Flood Risk | Poor Drainage Areas

Riverine Flood Risk | FEMA Flood Hazard Zones

Risk Categories and Ratings

Tidally Influenced Flooding Potential

Storm Surge and Inundation Risk

RiskFootprint™ Glossary & References

QUESTIONS?

WE'RE HERE TO HELP

CALL:

RISK FOOTPRINT™



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RISK FOOTPRINTTM REPORT



2/17/2021

Dear Customer,

Thank you for purchasing the RiskFootprintTM Report. You have taken an important step to better understand the flood, natural hazard, and climate change risks facing your property. Information contained in this report will empower you to make your property safer and more resilient and protect its market value in a changing environment.

The RiskFootprintTM Report is generated from our automated, proprietary model that screens properties for a variety of potential hazards and provides actionable intelligence for typical due diligence and risk mitigation decisions concerning buying, selling, investing, lending, insuring or protecting properties.

If your RiskFootprintTM Report indicates that your property faces risks, our Advisory Services team of professionals can assist you with our six-step, [B-ResilientTM](#) process to take appropriate cost-effective mitigation and adaptation actions.

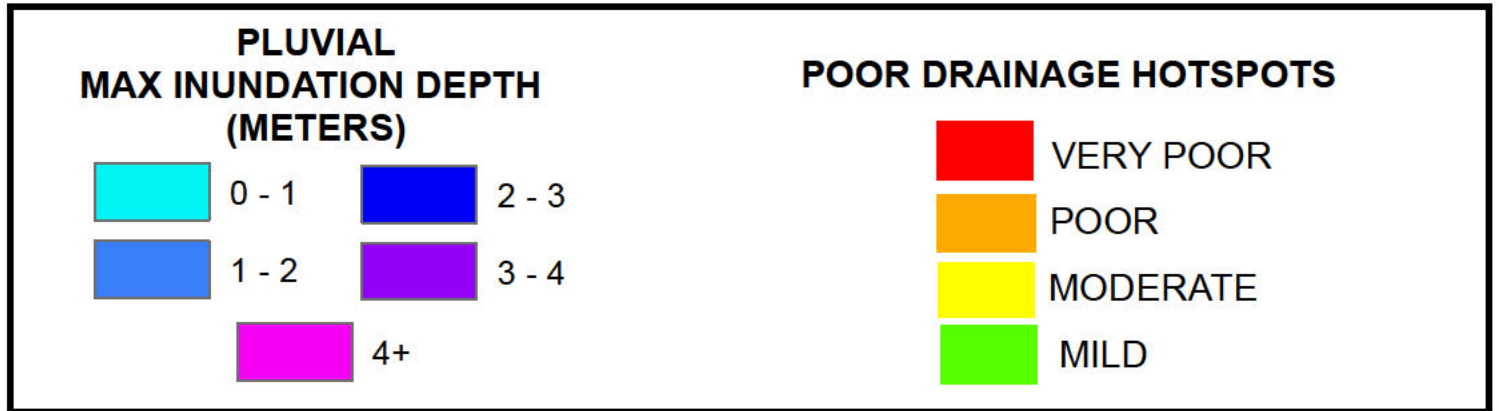
If you would like to find out more about our cutting-edge products and services, contact [REDACTED].

Sincerely,

Albert J. Slap, President
[REDACTED]

www.coastalriskconsulting.com

HEAVY RAINFALL (PLUVIAL) FLOOD RISK and POOR DRAINAGE AREAS



1000-Year Interval Pluvial Flood Risk*

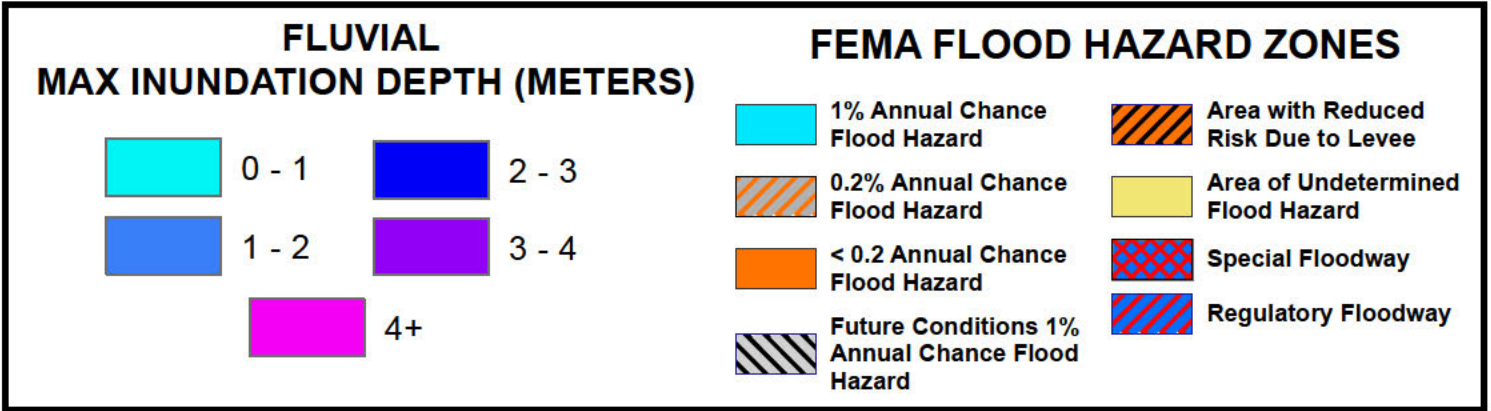
See note re: Fathom Maps on page 8



Poor Drainage Hotspots

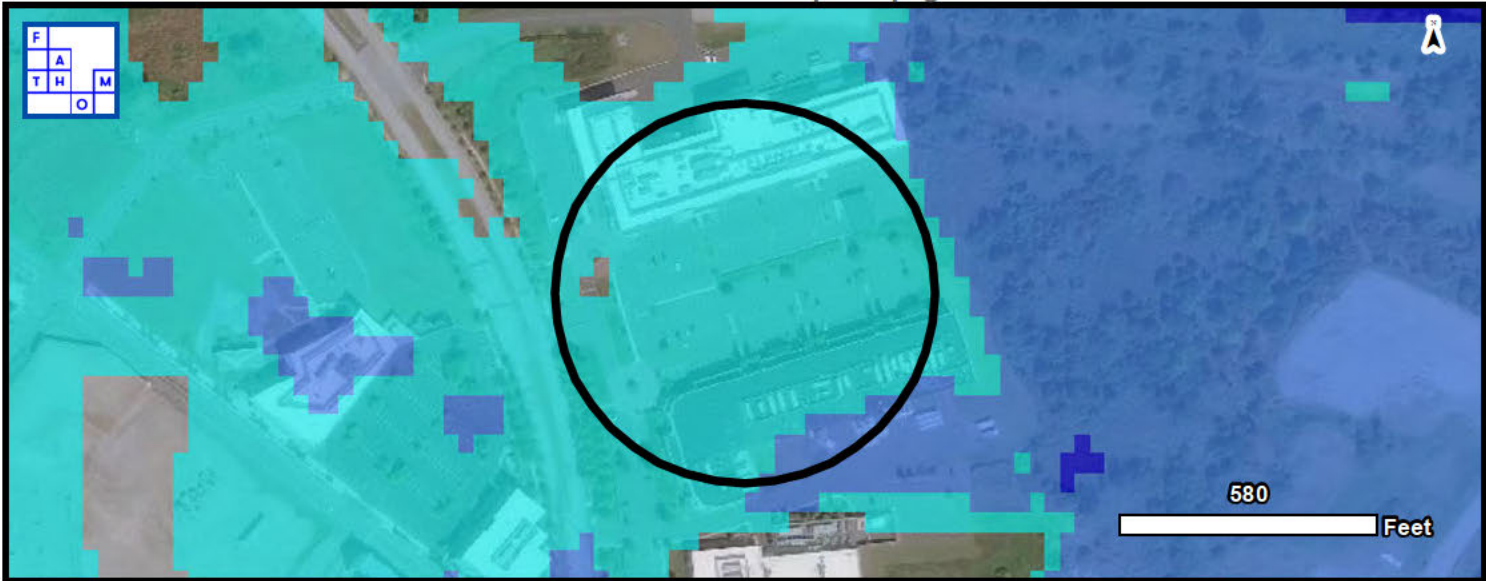


RIVERINE (FLUVIAL) FLOOD RISK and FEMA FLOOD HAZARD ZONES



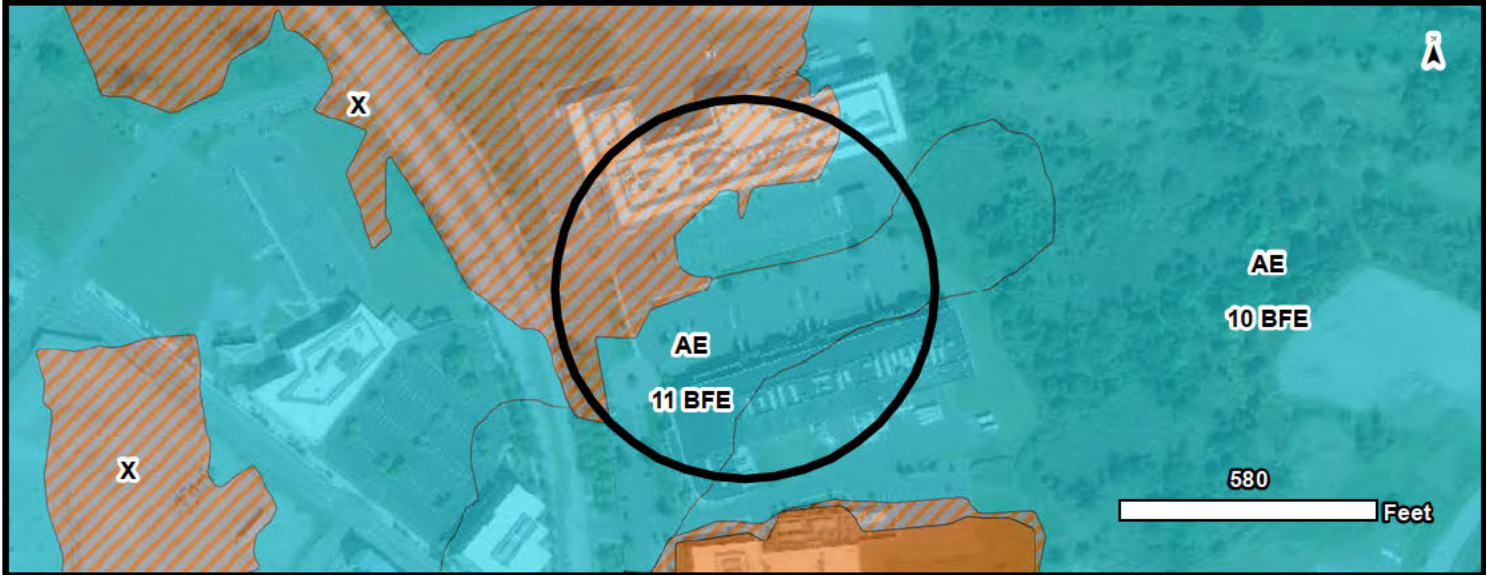
1000-Year Interval Fluvial Flood Risk*

See note re: Fathom Maps on page 8



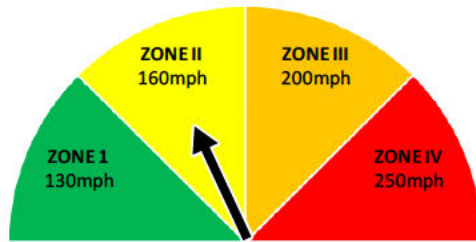
FEMA Flood Hazard Zones

A portion of this property is in Zone AE with a BFE of 11.0 Feet (NGVD29)

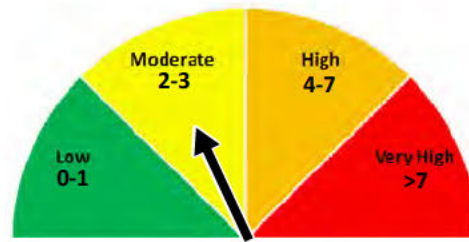


Natural Hazards and Climate Change Impacts

Wind Zone: II



Tornado Risk: 2 occurrence(s)



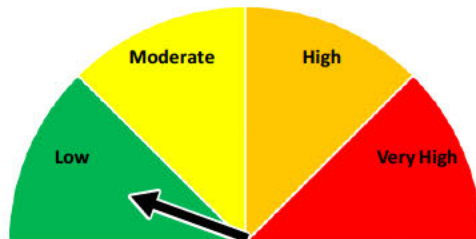
The 1,000-square-mile area surrounding the property has recorded 2 EF2 or higher tornadoes in the past 30 years

Community Rating Score: 0



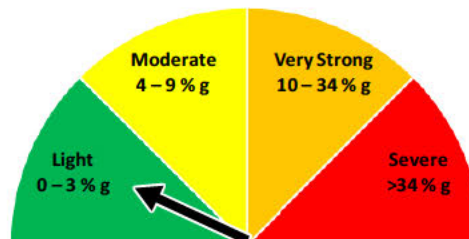
This property is not eligible for a reduction in flood insurance

Wildfire Potential: Low



Wildfire Potential is a measure of wildfire likelihood and intensity

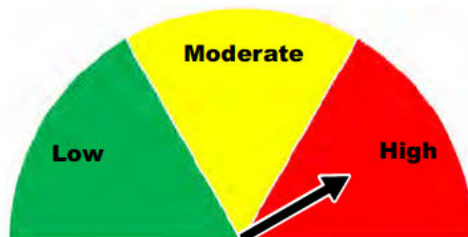
Earthquake Intensity: 2% g



This area is likely to experience Light ground shaking in the next 50 years

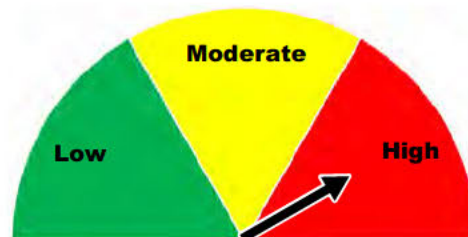
Future Climate Change Impacts

2050 Extreme Heat: High



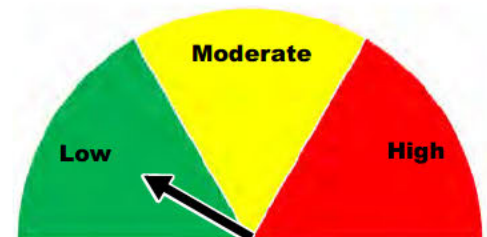
More than 75% of models are predicting a 20% increase in cooling degree days.

2050 Extreme Rainfall: High



More than 75% of models are predicting a 20% increase in the number of 5-year or greater precipitation events.

2050 Drought: Low



Less than 25% of models are predicting a 5% increase in drought months.

Property Elevation:

The land elevation within the property boundary ranges from 5.2 ft to 10.7 ft. The average elevation of this property is 8.8 ft. Elevations using North American Vertical Datum of 1988 (NAVD 88)

Tidally-Influenced Flooding Potential*

*The RiskFootprint™ model assumes no levees, berms, or barriers (sea walls) or sub-surface storm water systems (active or passive) to stop tidal water intrusion in the highlighted area.

Maximum Inundation Due to Sea Level Rise

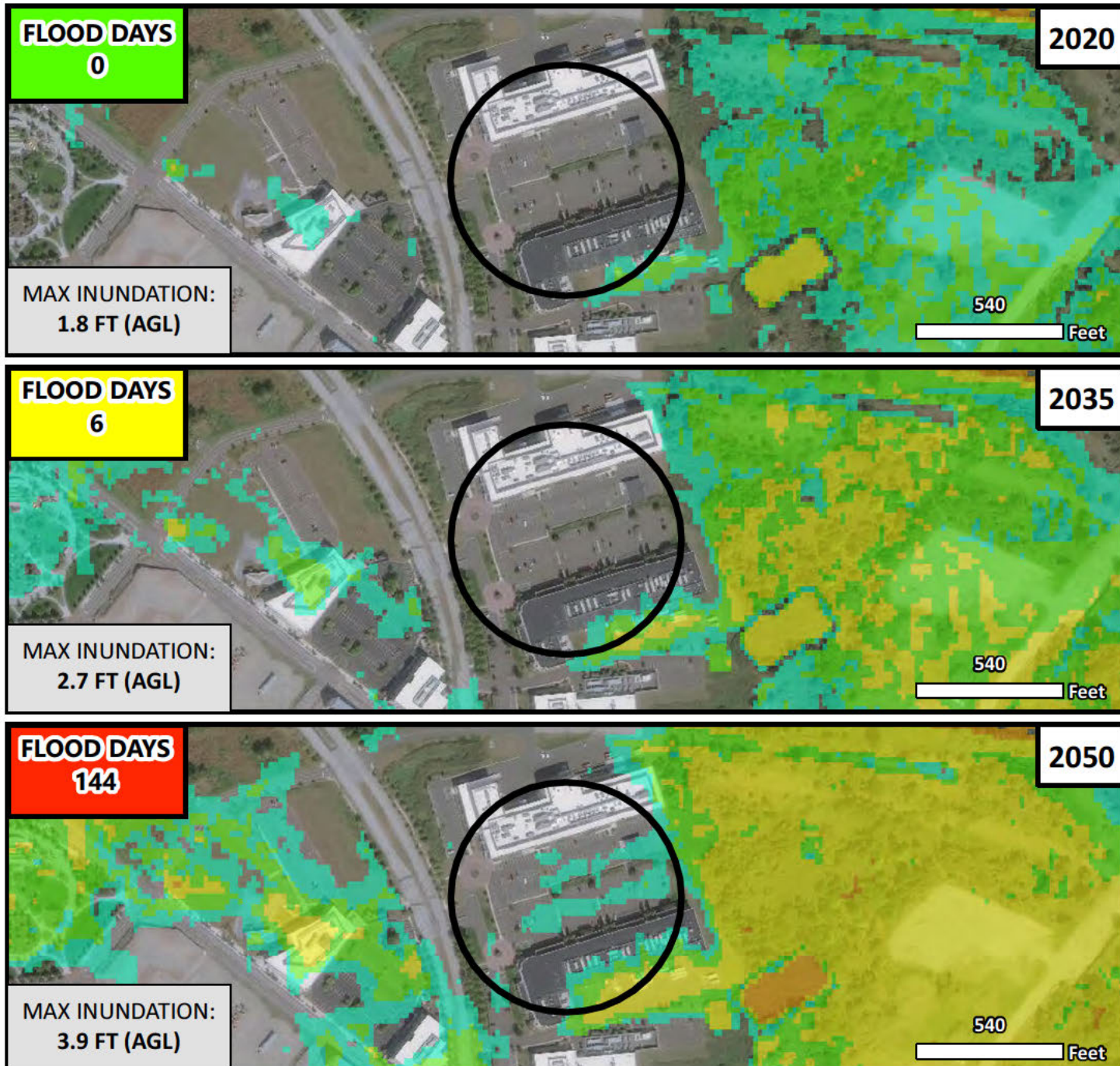
Maximum Inundation represents the highest modeled value of tidal waters within property boundary

Flood Days are reported when at least 10% of property has been inundated

INUNDATION (AGL)

0 - 1 ft	4 - 8 ft
1 - 2 ft	8 - 12 ft
2 - 4 ft	> 12 ft

NAVD88 - North American Vertical Datum of 1988 AGL - Above Ground Level



Storm Surge

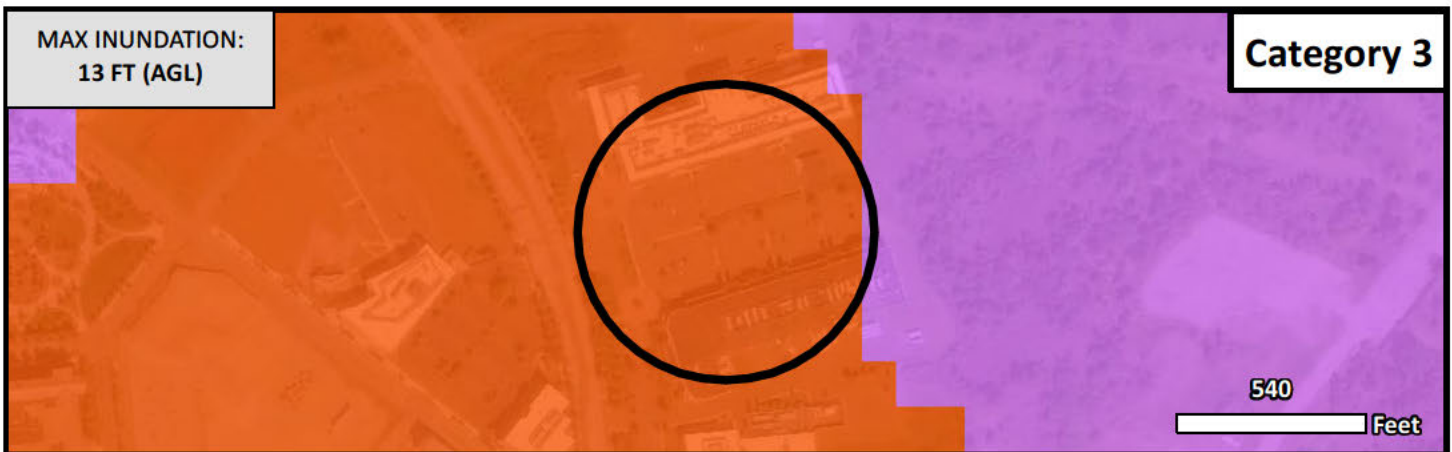
Maximum Possible Hurricane Storm Surge (2021)

Per data from the US National Hurricane Center:
Annual probability of Category 1 winds and higher: 1.0%
Annual probability of Category 3 winds and higher: N/A

INUNDATION (AGL)



NAVD88 - North American Vertical Datum of 1988 AGL - Above Ground Level



RiskFootprint™ Glossary and References

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Page 3 - POOR DRAINAGE HOTSPOTS – “Poor Drainage Hotspots” identifies hyper-local areas of a property where water from heavy rainfall will tend to pond and fail to drain properly, sometime resulting in standing water for days. The RiskFootprint™ report uses a high-resolution elevation model along with soil and groundwater data from the Natural Resources Conservation Service to assign risk within our proprietary, flood hotspot methodology ([NRCS drainage classes](#)).

FATHOM PLUVIAL (HEAVY RAINFALL) & FLUVIAL (RIVERINE) FLOOD PROBABILITY

(<https://www.fathom.global>). Fathom has pioneered methods using leading research and the latest datasets to model flood risks for both fluvial and pluvial perils. The dataset we use from Fathom-US incorporates the latest available inputs and the methodology has been validated via the peer-review process and published in world-leading journals. Fathom-US was validated against the entire FEMA flood hazard catalogue, identifying that current FEMA data misses around two thirds of total flood exposure nationwide. Fathom’s pluvial models also represent flash-flooding nationwide. While representing flood defenses is important in dimensioning risks, existing defense datasets are substantially incomplete. Flood defense datasets will be updated as available. **NOTE THAT FLOOD DEFENSES IN THE MODELS MAY INDICATE A LOWER RISK OF FLOODING AT A PARTICULAR LOCATION. FLOOD DEFENSES, HOWEVER, MAY OR MAY NOT BE OPERATIONAL OR COMPETENT AT ANY GIVEN TIME AND, FLOOD WATERS MAY OVERTOP DEFENSES, THEREBY FLOODING AREAS WITH LOWER MODELLED RISKS.**

Page 4 – FLUVIAL (RIVERINE) FLOOD RISK. Potential for river flooding above ground level (AGL) of the property with 0.1% probability as a result of an overflowing river.

FEMA FLOOD HAZARD BOUNDARIES– ([overview](#)) ([definitions](#)) These zones are derived from the National Flood Hazard Layer (NFHL) depicted on a community's Flood Insurance Rate Map (FIRM), or, where available, derived from the FEMA Preliminary Flood Hazard Data. Each zone reflects the severity or type of flooding in the area. This updated version of FEMA maps includes areas that FEMA has determined are protected by levees or other flood defenses. **NOTE THAT FLOOD DEFENSES IN THE FEMA MAPS MAY INDICATE A LOWER RISK OF FLOODING AT A PARTICULAR LOCATION. FLOOD DEFENSES, HOWEVER, MAY OR MAY NOT BE OPERATIONAL OR COMPETENT AT ANY GIVEN TIME AND, FLOOD WATERS MAY OVERTOP DEFENSES, THEREBY FLOODING AREAS WITH LOWER MODELED RISKS.**

While the RiskFootprint™ Report helps you dimension risk of loss from flood hazards and better understand insurance needs, it is not appropriate for insurance placement using the National Flood Insurance Program (NFIP), which exclusively utilizes effective FEMA flood maps for underwriting. Because FEMA flood maps change frequently and may be in the process of being updated, we recommend that you check with FEMA or your insurance agent to obtain the most up-to-date FEMA flood zone determination for your property. However, most commercial and industrial buildings do not rely on NFIP insurance. So, FEMA flood maps are only one view of flood risks among others presented herein. Note that older buildings may not have their first-floor heights (FFE) above the FEMA Base Flood Elevation (BFE).

Page 5 – NATURAL HAZARD AND CLIMATE CHANGE RISK METERS

FEMA WIND ZONES – ([website](#)) The United States is divided into four Wind Zones created by FEMA for construction purposes throughout the country. Buildings in their respective wind zones must be able to withstand the maximum wind speed as indicated by FEMA. Note that older buildings may not have been designed to these standards.

COMMUNITY RATING SYSTEM – ([website](#)) The Community Rating System (CRS) awards points for steps taken by municipalities to manage the flood plain to reduce the community's risk. Flood insurance rates are discounted for participating municipalities that have accumulated points, thereby saving homeowner’s on NFIP flood insurance premiums. You should make sure your insurance agent is providing you with the appropriate discount.

WILDFIRE POTENTIAL – ([website](#)) Based on the US Forest Service’s 2020 Wildfire Risk to Communities Product, Risk to Potential Structures dataset

TORNADO FREQUENCY – ([website](#)) Tornado historical data is based on the NOAA National Weather Service (NWS) Storm Prediction Center’s (SPC) severe report database which compiles tornado occurrences.

EARTHQUAKE INTENSITY – ([website](#)) Based on the USGS Earthquake Hazard Program - National Seismic Hazard Mapping Project (NSHMP) and depicts areas using peak ground acceleration (PGA) as its parameter and standard gravity (g) as its measure.

Resilient Analytics Climate Risk Projections (<https://resilient-analytics.com/>) - In order to make future climate risk projections more actionable and relevant to building owners/operators/investors, Resilient Analytics has developed a proprietary, building component and engineering-based, climate risk assessment methodology that combines engineering guidelines with IPCC-approved climate models. The dataset used in this process is generated through peer-reviewed and published methodologies and is based on the latest climate projections, current engineering approaches, and the latest Department of Energy models.

2050 Extreme Heat

This meter indicates extreme heat risks related to the increase in energy requirements to cool buildings from 2021 to 2050. This methodology employs an annual analysis of LOCA-downscaled projected temperatures resulting in increased cooling requirements compared with historical averages. The projected cooling degree days generate an increase in cooling energy demand at the local site. Cooling degree days measure how much (in degrees), and for how long (in days), outside air temperature is higher than 65°F. For example, on a day when the average outdoor temperature is 85° F, reducing the indoor temperature to 65°F would require 20 degrees of cooling multiplied by 1 day, or 20 cooling degree days. The number of cooling degree days is one input for estimating future demand for energy to maintain comfortable indoor environments.

2050 Extreme Rainfall

This meter indicates extreme rainfall risk from 2021 to 2050 related to heavy rainfall and localized flooding from events that produce more rain than a once-in-five-year rain event. As the projected number of precipitation events increases, the risk of façade and roof damage and localized flooding increases. This methodology employs an annual analysis of LOCA downscaled projected rainfall events focusing on events resulting in a minimum of a once-in-five-year flood risk, compared with historical localized flood events.

2050 Risk of Drought

This methodology employs a model related to deviations from the historical average of drought months and precipitation levels based on the Standard Precipitation. Increased drought could place a building at risk for increased water costs and reduced water availability. The Index is derived from daily LOCA-downscaled precipitation projections to determine 12-month averages and projected risk levels.

RESILIENT ANALYTICS SOURCES:

LOCA (Localized Constructed Analogs) is a statistical downscaling technique that uses historical data to add improved fine-scale detail to global climate models. LOCA was used to downscale 32 global climate models from the CMIP5 archive at a 1/16th degree spatial resolution, from Central Mexico through Southern Canada. Loca.ucsd.edu

ASHRAE Climate Zone Definitions – [Determining-ASHRAE-Climate-Zones](#)

Page 6 – TIDALLY-INFLUENCED FLOODING POTENTIAL – Potential for “sunny day flooding” on the property in 2020, 2035 and 2050, modeled in terms of “flood days” – days when 10% or more of the property is inundated above ground level because of high tides and sea level rise (website). The RiskFootprint™ Report applies local NOAA tidal gauge data to model inundation onto your property due to tidal flooding in correspondence with future projected sea level rise using the NOAA Regional Sea Level Rise Model.

https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf. The RiskFootprint™ model assumes no levees, berms, or barriers (sea walls) or sub-surface storm water systems (active or passive) to stop tidal water intrusion in the highlighted area. **THE MODEL, THEREFORE, MAY SHOW CURRENT OF FUTURE RISKS TO A PROPERTY THAT ARE OR WILL BE AMELIORATED BY PUBLIC OR PRIVATE RISK MITIGATION INVESTMENTS.**

Page 7 - HURRICANE STORM SURGE – Potential for current flooding on the property in 2020 because of the wind field that drives hurricane storm surge ([overview](#)). The RiskFootprint™ Report utilizes NOAA National Storm Surge Maps (Ver. 2) to identify maximum inundation levels for each property above the ground level. The data is derived from The Sea, Lake and Overland Surges from Hurricanes (SLOSH) model that estimates storm surge heights resulting from hurricanes by considering the atmospheric pressure, size, forward speed, and track data. <https://www.nhc.noaa.gov/nationalsurge/>.

HISTORIC HURRICANE STRIKE PROBABILITY – The Risk Footprint™ Hurricane Strike statistics are derived from 110 years of climatological data from the National Hurricane Center. <https://www.nhc.noaa.gov/aboutnhcprobs5.shtml>.



Ex. 4

SUSTAINABILITY ACCOUNTING STANDARD
INFRASTRUCTURE SECTOR

REAL ESTATE OWNERS, DEVELOPERS & INVESTMENT TRUSTS

Sustainability Accounting Standard

Sustainable Industry Classification System™ (SICS™) #IF0402

Prepared by the
Sustainability Accounting Standards Board®

March 2016
Provisional Standard

REAL ESTATE OWNERS, DEVELOPERS & INVESTMENT TRUSTS

Sustainability Accounting Standard

About SASB

The Sustainability Accounting Standards Board (SASB) provides sustainability accounting standards for use by publicly-listed corporations in the U.S. in disclosing material sustainability information for the benefit of investors and the public. SASB standards are designed for disclosure in mandatory filings to the Securities and Exchange Commission (SEC), such as the Form 10-K and 20-F. SASB is an independent 501(c)3 non-profit organization. Through 2016, SASB is developing standards for 79 industries in 10 sectors.

SUSTAINABILITY ACCOUNTING STANDARDS BOARD



www.sasb.org

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INTRODUCTION

Purpose & Structure

This document contains the SASB Sustainability Accounting Standard (SASB Standard) for the Real Estate Owners, Developers & Investment Trusts industry.

SASB Sustainability Accounting Standards are comprised of **(1) disclosure guidance and (2) accounting standards on sustainability topics** for use by U.S. and foreign public companies in their annual filings (Form 10-K or 20-F) with the U.S. Securities and Exchange Commission (SEC). To the extent relevant, SASB Standards may also be applicable to other periodic mandatory filings with the SEC, such as the Form 10-Q, Form S-1, and Form 8-K.

SASB Standards identify sustainability topics at an industry level, which may constitute material information—depending on a company's specific operating context—for a company within that industry. SASB Standards are intended to provide guidance to company management, which is ultimately responsible for determining which information is material and should therefore be included in its Form 10-K or 20-F and other periodic SEC filings.

SASB Standards provide companies with standardized sustainability metrics designed to communicate performance on industry level sustainability topics. When making disclosure on sustainability topics, companies can use SASB Standards to help ensure that disclosure is standardized and therefore decision-useful, relevant, comparable, and complete.

SASB Standards are intended to constitute “suitable criteria” as defined by AT 101.23 -. 32¹ and referenced in AT 701², as having the following attributes:

- *Objectivity*—Criteria should be free from bias.
- *Measurability*—Criteria should permit reasonably consistent measurements, qualitative or quantitative, of subject matter.
- *Completeness*—Criteria should be sufficiently complete so that those relevant factors that would alter a conclusion about subject matter are not omitted.
- *Relevance*—Criteria should be relevant to the subject matter.

Industry Description

The Real Estate Owners, Developers & Investment Trusts industry (the “Real Estate industry”) is composed of companies that own, develop, and generally operate income-producing real estate assets. Companies in this industry are commonly structured as real estate investment trusts (REITs) and operate in a wide range of segments within the real estate industry, including residential, retail, office, health care, industrial, and hotel properties. REITs typically focus on the direct ownership of real estate assets, thereby providing investors with the opportunity to obtain real estate exposure without direct asset ownership and management. Although REITs are often

¹ http://pcaobus.org/Standards/Attestation/Pages/AT101.aspx#at_101_fn7

² <http://pcaobus.org/Standards/Attestation/Pages/AT701.aspx>

concentrated in one segment of the real estate industry, many REITs are diversified through investment in multiple property types.

For tax purposes, real estate companies in the U.S. often prefer to be structured as REITs. To be classified as a REIT, companies must maintain most of their assets in real estate, derive most income from these assets, and distribute a minimum threshold of their annual taxable income to shareholders as dividends, among other requirements. Most U.S.-listed companies in the industry operate exclusively within the U.S., while some companies have broadened their real estate portfolio exposure internationally.

Guidance for Disclosure of Sustainability Topics in SEC Filings

1. Industry-Level Sustainability Topics

For the Real Estate Owners, Developers, & Investment Trusts industry, SASB has identified the following sustainability disclosure topics:

- Energy Management
- Water Management
- Management of Tenant Sustainability Impacts
- Climate Change Adaptation

2. Company-Level Determination and Disclosure of Material Sustainability Topics

Sustainability disclosures are governed by the same laws and regulations that govern disclosures by securities issuers generally. According to the U.S. Supreme Court, a fact is material if, in the event such fact is omitted from a particular disclosure, there is “a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of the information made available.”^{3,4}

SASB has attempted to identify those sustainability topics that are reasonably likely to have a material effect on the financial condition or operating performance of companies within each SICs industry. SASB recognizes, however, that each company is ultimately responsible for determining what information should be disclosed within the context of Regulation S-K and other guidance.

Regulation S-K, which sets forth certain disclosure requirements associated with Form 10-K and other SEC filings, requires companies, among other things, to describe in the Management’s Discussion and Analysis of Financial Condition and Results of Operations (MD&A) section of Form 10-K “any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations. If the registrant knows of events that will cause a material change in the relationship between costs and revenues (such as known future increases in costs of labor or materials or price increases or inventory adjustments), the change in the relationship shall be disclosed.”

³ TSC Industries v. Northway, Inc., 426 U.S. 438 (1976).

⁴ C.F.R. 229.303(Item 303)(a)(3)(ii).

Furthermore, Instructions to Item 303 state that the MD&A “shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition.”²

The SEC has provided guidance for companies to use in determining whether a trend or uncertainty should be disclosed. The two-part assessment prescribed by the SEC, based on probability and magnitude, can be applied to the topics included within this standard:

- First, a company is not required to make disclosure about a known trend or uncertainty if its management determines that such trend or uncertainty is not reasonably likely to occur.
- Second, if a company’s management cannot make a reasonable determination of the likelihood of an event or uncertainty, then disclosure is required unless management determines that a material effect on the registrant’s financial condition or results of operation is not reasonably likely to occur.

3. Sustainability Accounting Standard Disclosures in Form 10-K

a. Management’s Discussion and Analysis

For purposes of comparability and usability, companies should consider making disclosure on sustainability topics in the MD&A, in a sub-section titled “**Sustainability Accounting Standards Disclosures**.”⁵

b. Other Relevant Sections of Form 10-K

In addition to the MD&A section, it may be relevant for companies to disclose sustainability information in other sections of Form 10-K, including, but not limited to:

- **Description of business**—Item 101 of Regulation S-K requires a company to provide a description of its business and its subsidiaries. Item 101(c)(1)(xii) expressly requires disclosure regarding certain costs of complying with environmental laws:

Appropriate disclosure also shall be made as to the material effects that compliance with Federal, State and local provisions which have been enacted or adopted regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment, may have upon the capital expenditures, earnings and competitive position of the registrant and its subsidiaries.

- **Legal proceedings**—Item 103 of Regulation S-K requires companies to describe briefly any material pending or contemplated legal proceedings. Instructions to Item 103 provide specific disclosure requirements for administrative or judicial proceedings arising from laws and regulations that target discharge of materials into the environment or that are primarily for the purpose of protecting the environment.

⁵ SEC [Release Nos. 33-8056; 34-45321; FR-61] [Commission Statement about Management’s Discussion and Analysis of Financial Condition and Results of Operations](#): “We also want to remind registrants that disclosure must be both useful and understandable. That is, management should provide the most relevant information and provide it using language and formats that investors can be expected to understand. Registrants should be aware also that investors will often find information relating to a particular matter more meaningful if it is disclosed in a single location, rather than presented in a fragmented manner throughout the filing.”

- **Risk factors**—Item 503(c) of Regulation S-K requires filing companies to provide a discussion of the most significant factors that make an investment in the registrant speculative or risky, clearly stating the risk and specifying how a particular risk affects the particular filing company.

c. Rule 12b-20

Securities Act Rule 408 and Exchange Act Rule 12b-20 require a registrant to disclose, in addition to the information expressly required by law or regulation, “such further material information, if any, as may be necessary to make the required statements, in light of the circumstances under which they are made, not misleading.”

More detailed guidance on disclosure of material sustainability topics can be found in the **SASB Conceptual Framework**, available for download via <http://www.sasb.org/approach/conceptual-framework/>.

Guidance on Accounting for Sustainability Topics

For each sustainability topic included in the Real Estate Owners, Developers & Investment Trusts Industry Sustainability Accounting Standard, SASB identifies accounting metrics.

SASB recommends that each company consider using these sustainability accounting metrics when preparing disclosures on the sustainability topics identified herein;

As appropriate—and consistent with Rule 12b-20⁶—when disclosing a sustainability topic identified by this Standard, companies should consider including a narrative description of any material factors necessary to ensure completeness, accuracy, and comparability of the data reported. Where not addressed by the specific accounting metrics, but relevant, the registrant should discuss the following, related to the topic:

- The registrant’s **strategic approach** to managing performance on material sustainability issues;
- The registrant’s **relative performance** with respect to its peers;
- The **degree of control** the registrant has;
- Any **measures the registrant has undertaken or plans to undertake** to improve performance; and
- Data for the registrant’s **last three completed fiscal years** (when available).

SASB recommends that registrants use SASB Standards specific to their primary industry as identified in the [Sustainable Industry Classification System \(SICSTM\)](#). If a registrant generates significant revenue from multiple industries, SASB recommends that it also consider sustainability topics that SASB has identified for those industries and disclose the associated SASB accounting metrics.

⁶ SEC Rule 12b-20: “In addition to the information expressly required to be included in a statement or report, there shall be added such further material information, if any, as may be necessary to make the required statements, in the light of the circumstances under which they are made, not misleading.”

In disclosing to SASB Standards, it is expected that registrants disclose with the same level of rigor, accuracy, and responsibility as they apply to all other information contained in their SEC filings.

Users of the SASB Standards

The SASB Standards are intended to provide guidance for companies that engage in public offerings of securities registered under the Securities Act of 1933 (the Securities Act) and those that issue securities registered under the Securities Exchange Act of 1934 (the Exchange Act),⁷ for use in SEC filings, including, without limitation, annual reports on Form 10-K (Form 20-F for foreign issuers), quarterly reports on Form 10-Q, current reports on Form 8-K, and registration statements on Forms S-1 and S-3. Disclosure with respect to the SASB Standards is not required or endorsed by the SEC or other entities governing financial reporting, such as FASB, GASB, or IASB.

Scope of Disclosure

Unless otherwise specified, SASB recommends:

- That a registrant disclose on sustainability issues and metrics for itself and for entities that are consolidated for financial reporting purposes as defined by accounting principles generally accepted in the United States for consistency with other accompanying information within SEC filings;⁸
- That for consolidated entities, disclosures be made, and accounting metrics calculated, for the whole entity, regardless of the size of the minority interest; and
- That information from unconsolidated entities not be included in the computation of SASB accounting metrics. A registrant should disclose, however, information about unconsolidated entities to the extent that the registrant considers the information necessary for investors to understand the effect of sustainability topics on the company's financial condition or operating performance (typically, this disclosure would be limited to risks and opportunities associated with these entities).

Reporting Format

Use of Financial Data

In instances where accounting metrics, activity metrics, and technical protocols in this standard incorporate financial data (e.g., revenues, cost of sales, expenses recorded and disclosed for fines, etc.), such financial data shall be prepared in accordance with the accounting principles generally accepted in the United States of America ("US GAAP") and be consistent with the corresponding financial data reported within the registrant's SEC filings. Should accounting metrics, activity metrics and technical protocols in this standard incorporate disclosure of financial data

⁷ Registration under the Securities Exchange Act of 1934 is required (1) for securities to be listed on a national securities exchange such as the New York Stock Exchange, the NYSE Amex, and the NASDAQ Stock Market or (2) if (A) the securities are equity securities and are held by more than 2,000 persons (or 500 persons who are not accredited investors) and (B) the company has more than \$10 million in assets.

⁸ See US GAAP consolidation rules (Section 810).

that is not prepared in accordance with US GAAP, the registrant shall disclose such information in accordance with the SEC Regulation G.

Activity Metrics and Normalization

SASB recognizes that normalizing accounting metrics is important for the analysis of SASB disclosures.

SASB recommends that a registrant disclose any basic business data that may assist in the accurate evaluation and comparability of disclosure, to the extent that they are not already disclosed in the Form 10-K (e.g., revenue, EBITDA, etc.).

Such data—termed “activity metrics”—may include high-level business data such as total number of employees, quantity of products produced or services provided, number of facilities, or number of customers. It may also include industry-specific data such as plant capacity utilization (e.g., for specialty chemical companies), number of transactions (e.g., for Internet media and services companies), hospital bed days (e.g., for health care delivery companies), or proven and probable reserves (e.g., for oil and gas exploration and production companies).

Activity metrics disclosed should:

- Convey contextual information that would not otherwise be apparent from SASB accounting metrics.
- Be deemed generally useful for an investor relying on SASB accounting metrics in performing their own calculations and creating their own ratios.
- Be explained and consistently disclosed from period to period to the extent they continue to be relevant. However, a decision to make a voluntary disclosure in one period does not obligate a continuation of that disclosure if it is no longer relevant or if a better metric becomes available.⁹

⁹ *Improving Business Reporting: Insights into Enhancing Voluntary Disclosures*, FASB Business Reporting Research Project, January 29, 2001.

Where relevant, SASB recommends specific activity metrics that—at a minimum—should accompany SASB accounting metric disclosures.

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Number of assets, by property subsector ¹⁰	Quantitative	Number	IF0402-A
Leasable floor area, by property subsector ¹¹	Quantitative	Square feet (ft ²)	IF0402-B
Percentage of indirectly managed assets, by property subsector ¹²	Quantitative	Percentage (%) by floor area (ft ²)	IF0402-C
Average occupancy rate, by property subsector ¹³	Quantitative	Percentage (%)	IF0402-D

Units of Measure

Unless specified, disclosures should be reported in International System of Units (SI units).

Uncertainty

SASB recognizes that there may be inherent uncertainty when disclosing certain sustainability data and information. This may be related to variables such as the reliance on data from third-party reporting systems and technologies, or the unpredictable nature of climate events. Where uncertainty around a particular disclosure exists, SASB recommends that the registrant should consider discussing its nature and likelihood.

Estimates

SASB recognizes that scientifically based estimates, such as the reliance on certain conversion factors or the exclusion of *de minimis* values, may occur for certain quantitative disclosures. Where appropriate, SASB does not discourage the use of such estimates. When using an estimate for a particular disclosure, SASB expects that the registrant discuss its nature and substantiate its basis.

¹⁰ Note to **IF0402-A**—Number of assets shall include the number of distinct real estate property or building assets and is aligned with the 2016 GRESB Real Estate Assessment Reference Guide. Number of assets shall be disclosed separately for each portion of the registrant's portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System. The total number of assets reported across all subsectors can exceed the actual number of assets due to the fact that mixed-use assets can be reported in multiple subsectors.

¹¹ Note to **IF0402-B**—Leasable floor area shall be disclosed separately for each portion of the registrant's portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System. Number of units may be used in place of floor area in the Apartments and Lodging/Resorts property subsectors when floor area is not available.

¹² Note to **IF0402-C**—The definition of "indirectly managed assets" is solely based on the landlord/tenant relationship and is aligned with the 2016 GRESB Real Estate Assessment Reference Guide: "Where a single tenant has the sole authority to introduce and implement operating and/or environmental policies and measures, the tenant should be assumed to have operational control, so [the asset] should be considered to be an Indirectly Managed Asset." Percentage of indirectly managed assets shall be disclosed separately for each portion of the registrant's portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System.

¹³ Note to **IF0402-D**—Average occupancy rate shall be disclosed separately for each portion of the registrant's portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System.

Timing

Unless otherwise specified, disclosure shall be for the registrant's fiscal year.

Limitations

There is no guarantee that SASB Standards address all sustainability impacts or opportunities associated with a sector, industry, or company, and therefore, a company must determine for itself the topics—sustainability-related or otherwise—that warrant discussion in its SEC filings.

Disclosure under SASB Standards is voluntary. It is not intended to replace any legal or regulatory requirements that may be applicable to user operations. Where such laws or regulations address legal or regulatory topics, disclosure under SASB Standards is not meant to supersede those requirements. Disclosure according to SASB Standards shall not be construed as demonstration of compliance with any law, regulation, or other requirement.

SASB Standards are intended to be aligned with the principles of materiality enforced by the SEC. However, SASB is not affiliated with or endorsed by the SEC or other entities governing financial reporting, such as FASB, GASB, or IASB.

Forward-looking Statements

Disclosures on sustainability topics can involve discussion of future trends and uncertainties related to the registrant's operations and financial condition, including those influenced by external variables (e.g., environmental, social, regulatory, and political). Companies making such disclosures should familiarize themselves with the safe harbor provisions of Section 27A of the Securities Act and Section 21E of the Exchange Act, which preclude civil liability for material misstatements or omissions in such statements if the registrant takes certain steps, including, among other things, identifying the disclosure as “forward-looking” and accompanying such disclosure with “meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statements.”

The following sections contain the disclosure guidance associated with each accounting metric such as guidance on definitions, scope, accounting, compilation, and presentation.

The term “shall” is used throughout this document to indicate those elements that reflect requirements of the Standard. The terms “should” and “may” are used to indicate guidance, which, although not required, provides a recommended means of disclosure.

Table 1. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Energy Management	Energy consumption data coverage as a percentage of floor area, by property subsector	Quantitative	Percentage (%) by floor area (ft ²)	IF0402-01
	Total energy consumed by portfolio area with data coverage, percentage grid electricity, and percentage renewable, each by property subsector	Quantitative	Gigajoules (GJ), Percentage (%)	IF0402-02
	Like-for-like change in energy consumption of portfolio area with data coverage, by property subsector	Quantitative	Percentage (%) by gigajoules (GJ)	IF0402-03
	Percentage of eligible portfolio that (1) has obtained an energy rating and (2) is certified to ENERGY STAR®, by property subsector	Quantitative	Percentage (%) by floor area (ft ²)	IF0402-04
	Description of how building energy management considerations are integrated into property investment analysis and operational strategy	Discussion and Analysis	n/a	IF0402-05
Water Management	Water withdrawal data coverage as a percentage of total floor area and percentage in regions with High or Extremely High Baseline Water Stress, each by property subsector	Quantitative	Percentage (%) by floor area (ft ²)	IF0402-06
	Total water withdrawn by portfolio area with data coverage and percentage in regions with High or Extremely High Baseline Water Stress, each by property subsector	Quantitative	Cubic meters (m ³), Percentage (%)	IF0402-07
	Like-for-like change in water withdrawn for portfolio area with data coverage, by property subsector	Quantitative	Percentage (%) by cubic meters (m ³)	IF0402-08
	Discussion of water management risks and description of strategies and practices to mitigate those risks	Discussion and Analysis	n/a	IF0402-09

Table 1. Sustainability Disclosure Topics & Accounting Metrics (cont.)

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Management of Tenant Sustainability Impacts	Percentage of new leases that contain a cost recovery clause for resource efficiency-related capital improvements and associated leased floor area, by property subsector	Quantitative	Percentage (%) by floor area (ft ²), Square feet (ft ²)	IF0402-10
	Percentage of tenants that are separately metered or submetered for (1) grid electricity consumption and (2) water withdrawals, by property subsector	Quantitative	Percentage (%) by floor area (ft ²)	IF0402-11
	Description of approach to measuring, incentivizing, and improving sustainability impacts of tenants	Discussion and Analysis	n/a	IF0402-12
Climate Change Adaptation	Area of properties located in FEMA Special Flood Hazard Areas or foreign equivalent, by property subsector	Quantitative	Square feet (ft ²)	IF0402-13
	Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks	Discussion and Analysis	n/a	IF0402-14

Energy Management

Description

Real estate assets consume significant amounts of energy, primarily related to space heating, ventilating, air conditioning, water heating, lighting, and equipment and appliance use. Type of energy used, magnitude of consumption, and strategies for energy management are highly dependent on the real estate asset class, among other factors. Generally, grid electricity consumption is the predominant form of consumed energy, though on-site fuel combustion also serves an important role. Energy costs may be borne by companies in the industry and/or the property occupants; either way, energy management is a significant industry issue. To the extent that the real estate owner assumes direct responsibility for energy costs, such costs often represent significant operating costs, inherently indicating the importance of energy management. Energy pricing volatility and a general trend of electricity price increases, energy-related regulations, wide variations in energy performance across the existing building stock, and opportunities for efficiency improvements through economically attractive capital investments all further point to the importance of energy management. Energy costs assumed by occupants, either in whole or in part, are nonetheless likely to significantly impact companies in the industry, albeit through differing channels. Building energy performance is a notable driver of tenant demand, as it allows them to control operating costs, mitigate the environmental impacts of operations, and, often just as importantly, maintain a reputation for resource conservation. Additionally, real estate owners may be exposed to energy-related regulations even when energy costs are the responsibility of occupants. Overall, companies in the industry that effectively manage the energy performance of their assets may see reduced operating costs and regulatory risks, as well as increased tenant demand, rental rates, and occupancy rates, all of which drive revenue and asset value appreciation. Improving the energy performance of assets is highly dependent on property type and location, target tenant market, local building codes, physical and legal opportunities to deploy distributed renewable energy, ability to measure consumption, and performance of existing building stock, among other factors.

Accounting Metrics

IF0402-01. Energy consumption data coverage as a percentage of floor area, by property subsector

- .01 Energy consumption data coverage shall be disclosed as a percentage and calculated as the total portfolio gross floor area with complete energy consumption data coverage divided by the total portfolio gross floor area for which energy is used, where:
- Gross floor area is defined according to the U.S. Environmental Protection Agency (EPA) ENERGY STAR® [definition](#) as “the total property square footage, measured between the principal exterior surfaces of the enclosing fixed walls of the building(s).”
 - Floor area is considered to have complete energy consumption data coverage when energy consumption data (i.e., energy types and amounts consumed) is obtained by the registrant for all types of energy consumed in the relevant floor area during the fiscal year, regardless of when such data was obtained.
 - If such data is not available for one or more types of energy consumed, the relevant floor area shall not be considered to have energy consumption data coverage.

.02 The scope of energy includes:

- Energy purchased from sources external to the registrant and its tenants or produced by the registrant or its tenants themselves (self-generated).
- Energy from all sources, including direct fuel usage, purchased electricity, and heating, cooling, and steam energy.

.03 The registrant may choose to discuss the comprehensiveness of data coverage if coverage variations by energy type exist (e.g., if a portion of floor area consumes electricity and natural gas and the registrant has energy consumption data coverage for electricity but not natural gas, the registrant does not have complete energy consumption data coverage but may choose to disclose the portion of total portfolio gross floor area with partial energy consumption data coverage).

.04 The registrant may choose to describe the variations in energy consumption data coverage, including the factors that influence it.

- Variations in energy consumption data coverage may occur based on distinctions including, but not limited to, the following:
 - Base Building, Tenant Space, and Whole Building;
 - Energy purchased by the landlord and energy purchased by tenants;
 - Managed assets and indirectly managed assets; and
 - Geographical markets.
- Relevant factors that influence energy consumption data coverage may include, but are not limited to:
 - Geographical markets and the applicable enabling or inhibiting laws, regulations, and policies within such markets, including those policies of utilities;
 - Administrative or logistical barriers to obtaining energy consumption data (e.g., lack of integration of utilities' data reporting systems);
 - Tenant demands around the privacy or proprietary nature of energy consumption data;
 - Property subsectors or other more nuanced classifications of property types;
 - Lease structures, including the length in time of leases, the terms applicable to the access of energy consumption data by the registrant, and the ability of the registrant to influence energy management performance of tenant spaces; and
 - The registrant's perception that its obtainment of tenant space energy consumption data may negatively impact tenant demand.

.05 The following terms are defined according to the [2016 GRESB Real Estate Assessment Reference Guide](#):

- Base Building is defined as “Energy consumed in supplying central building services to lettable/leasable areas and common areas.”
- Tenant Space is defined as “Lettable floor area (both vacant and let/leased areas).”
- Whole Building is defined as “Energy used by tenants and base building services to lettable/leasable and common spaces. This should include all energy supplied to the building for the operation of the building and the tenant space.”
- Purchased by Landlord is defined as “Energy purchased by the landlord, but consumed by the tenant. This can include energy purchased by the landlord but used for vacant space.”
- Purchased by Tenant is defined as “Energy purchased by the tenant. Typically this is data that is not within the participants' immediate control...”
- Managed Assets and Indirectly Managed Assets are defined as follows: “This definition of Managed assets and the definition of Indirectly Managed assets are solely based on the landlord/tenant relationship. [Managed and Indirectly Managed Assets are] assets or buildings for which the landlord is determined to have 'operational control' where operational control is defined as having the ability to introduce and implement operating and/or environmental policies and measures. In case both the landlord and tenant have the authority to introduce and implement any or all of the policies mentioned above, the asset or building should be reported as a Managed asset. Where a single tenant has the sole authority to introduce and implement operating and/or environmental policies and measures, the tenant should be assumed to have operational control, so it should be considered to be an Indirectly Managed asset.”

.06 Leasable floor area may be used in place of gross floor area when gross floor area is not available for the relevant area of the portfolio (e.g., if a building with an unknown gross floor area has complete energy consumption data coverage, the leasable floor area may be added to the numerator and denominator for the relevant building in the above calculation in place of gross floor area).

.07 Number of units may be used in place of floor area in the Apartments and Lodging/Resorts property subsectors when floor area is not available.

.08 The registrant shall disclose energy consumption data coverage separately for each portion of its portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System and include the following: Health Care, Self Storage, Industrial, Office, Apartments, Manufactured Homes, Single Family Homes, Shopping Centers, Regional Malls, Free Standing, Lodging/Resorts, Specialty, Data Centers, and Other (any other property type(s) that cannot be classified to any of the previous property subsector classifications).

.09 The registrant shall consider the 2016 GRESB Real Estate Assessment Reference Guide as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

IF0402-02. Total energy consumed by portfolio area with data coverage, percentage grid electricity, and percentage renewable, each by property subsector

- .10 The registrant shall disclose total energy consumption by the portfolio area for which there is energy consumption data coverage as an aggregate figure in gigajoules or their multiples, where:
- Energy consumption data shall be disclosed by (1)(a) Base Building and (b) Tenant Space or (2) Whole Building, or a combination of these.
 - The scope includes all property area in the registrant's portfolio for which there is energy consumption data coverage, regardless of whether energy is consumed by the Tenant Space or Base Building (including outdoor, exterior, and parking areas) and which party pays for energy expenses.
 - The scope excludes the portion of energy consumed by property area in the registrant's portfolio for which energy consumption data is unavailable.¹⁴
 - If energy consumption data is not available for Tenant Space or Whole Building for a property but is available for the Base Building, then the registrant shall disclose this energy consumption data.
 - The scope of energy includes:
 - Energy purchased from sources external to the registrant and its tenants or produced by the registrant or its tenants themselves (self-generated).
 - Energy from all sources, including direct fuel usage, purchased electricity, and heating, cooling, and steam energy.
- .11 In calculating energy consumption from fuels and biofuels, the registrant shall use higher heating values (HHV), also known as gross calorific values (GCV), which are directly measured or taken from the Intergovernmental Panel on Climate Change (IPCC), the U.S. Department of Energy (DOE), or the U.S. Energy Information Administration (EIA).
- .12 The registrant shall disclose grid electricity consumption as a percentage of total energy consumption.
- .13 The registrant shall disclose renewable energy consumption as a percentage of total energy consumption.
- .14 The scope of renewable energy includes renewable fuel the registrant and its tenants consume and renewable energy the registrant and its tenants directly produce, purchase through a renewable power purchase agreement (PPA) that explicitly includes renewable energy certificates (RECs), or for which Green-e Energy Certified RECs are paired with grid electricity.
- For any renewable electricity generated on-site, any RECs must be retained (i.e., not sold) and retired on behalf of the registrant or its tenants in order for the registrant to claim them as renewable energy.

¹⁴ SASB recognizes that there may be property area in the registrant's portfolio for which energy consumption data coverage is unavailable, in which case IF0402-02 will not reflect the entirety of energy consumption within the portfolio.

- For renewable PPAs, the agreement must explicitly include and convey that RECs be retained and retired on behalf of the registrant or its tenants in order for the registrant to claim them as renewable energy.
 - The renewable portion of the electricity grid mix that is outside of the control or influence of the registrant and its tenants is excluded from disclosure.¹⁵
 - Renewable energy is defined as energy from sources that are replenished at a rate greater than or equal to their rate of depletion, consistent with U.S. EPA definitions, such as geothermal, wind, solar, hydro, and biomass.
- .15 For the purposes of this disclosure, the scope of renewable energy from hydro and biomass sources is limited to the following:
- Energy from hydro sources that are certified by the Low Impact Hydropower Institute or that are eligible for a state Renewable Portfolio Standard.
 - Energy from biomass sources is limited to materials certified to a third-party standard (e.g., Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification, or American Tree Farm System), materials considered “eligible renewables” according to the Green-e Energy National Standard Version 2.5 (2014), and materials that are eligible for a state Renewable Portfolio Standard.
- .16 The registrant shall apply conversion factors consistently for all data reported under this disclosure, such as the use of HHVs for fuel usage (including biofuels) and conversion of kWh to gigajoules (for energy data including electricity from solar or wind energy).
- .17 The registrant shall disclose total energy consumed separately for each portion of its portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System and include the following: Health Care, Self Storage, Industrial, Office, Apartments, Manufactured Homes, Single Family Homes, Shopping Centers, Regional Malls, Free Standing, Lodging/Resorts, Specialty, Data Centers, and Other (any other property type(s) that cannot be classified to any of the previous property subsector classifications).
- .18 The registrant may choose to describe the variations in energy consumption.
- Variations in energy consumption data coverage may occur based on distinctions including, but not limited to, the following:
 - Base Building, Tenant Space, and Whole Building;
 - Energy purchased by the landlord and energy purchased by tenants;

¹⁵ SASB recognizes that RECs reflect the environmental attributes of renewable energy that have been introduced to the grid.

- Managed assets and indirectly managed assets; and
- Geographical markets.

.19 The following terms are defined according to the [2016 GRESB Real Estate Assessment Reference Guide](#):

- Base Building is defined as “Energy consumed in supplying central building services to lettable/leasable areas and common areas.”
- Tenant Space is defined as “Lettable floor area (both vacant and let/leased areas).”
- Whole Building is defined as “Energy used by tenants and base building services to lettable/leasable and common spaces. This should include all energy supplied to the building for the operation of the building and the tenant space.”
- Purchased by Landlord is defined as “Energy purchased by the landlord, but consumed by the tenant. This can include energy purchased by the landlord but used for vacant space.”
- Purchased by Tenant is defined as “Energy purchased by the tenant. Typically this is data that is not within the participants' immediate control...”
- Managed Assets and Indirectly Managed Assets are defined as follows: “This definition of Managed assets and the definition of Indirectly Managed assets are solely based on the landlord/tenant relationship. [Managed and Indirectly Managed Assets are] assets or buildings for which the landlord is determined to have 'operational control' where operational control is defined as having the ability to introduce and implement operating and/or environmental policies and measures. In case both the landlord and tenant have the authority to introduce and implement any or all of the policies mentioned above, the asset or building should be reported as a Managed asset. Where a single tenant has the sole authority to introduce and implement operating and/or environmental policies and measures, the tenant should be assumed to have operational control, so it should be considered to be an Indirectly Managed asset.”

.20 The registrant shall consider the 2016 GRESB Real Estate Assessment Reference Guide as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

IF0402-03. Like-for-like change in energy consumption of portfolio area with data coverage, by property subsector

- .21 Like-for-like change in energy consumption shall be disclosed as a percentage and calculated as the total energy consumption in the fiscal year divided by the total energy consumption in the immediately prior fiscal year, where:
- The scope of energy consumption included in calculation of “like-for-like change” shall be aligned with that outlined in the [2016 GRESB Real Estate Assessment Reference Guide](#) (“Like-for-like Comparison”) as including all energy consumed by properties that were in the registrant’s portfolio for both the full fiscal year and the immediately prior full fiscal year.
 - Energy consumed by properties that have been acquired, disposed of, under development or have undergone a major renovation during the fiscal year or the immediately prior fiscal year shall be excluded.
 - No correction for changes in the occupancy rate is needed and buildings with a high variation in vacancy rates should be included.
 - The scope excludes the portion of energy consumed by property area in the registrant’s portfolio for which energy consumption data is unavailable for the full fiscal year and/or the immediately prior full fiscal year.¹⁶
- .22 Like-for-like change in energy consumption shall be disclosed by (1)(a) Base Building and (b) Tenant Space or (2) Whole Building, or a combination of these.
- If like-for-like change in energy consumption data is not available for Tenant Space or Whole Building for a property but is available for the Base Building, then the registrant shall disclose this like-for-like change in energy consumption data.
- .23 The scope, methodology, and calculations of energy consumption shall be consistent with IF0402-02.
- .24 The registrant shall disclose like-for-like change in energy consumption separately for each portion of its portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System and include the following: Health Care, Self Storage, Industrial, Office, Apartments, Manufactured Homes, Single Family Homes, Shopping Centers, Regional Malls, Free Standing, Lodging/Resorts, Specialty, Data Centers, and Other (any other property type(s) that cannot be classified to any of the previous property subsector classifications).
- .25 The registrant should disclose the floor area, in square feet, included in the scope of like-for-like change in energy consumption if the scope significantly diverges from the floor area of energy consumption data coverage.

¹⁶ SASB recognizes that there may be property area in the registrant’s portfolio for which energy consumption data coverage is unavailable, in which case IF0402-03 will not reflect the entirety of energy consumption within the portfolio.

- .26 “Like-for-like” data collection, analysis, and disclosure may be consistent with the approach with which the registrant discloses its financial reporting data.
- If the registrant discloses its financial reporting data using a concept and methodology similar to “Like-for-Like Comparison,” the registrant shall describe divergences between the scope of assets and/or floor area used in its financial reporting and its like-for-like change in energy consumption. For example, if additional assets are excluded from the like-for-like change in energy consumption relative to like-for-like financial reporting as a result of data coverage limitations, such inconsistencies shall be described.
- .27 The registrant may choose to additionally present like-for-like change in energy consumption on a normalized basis.
- Normalization factors and methodologies may include, but are not limited to, the following which are presented in the [2016 GRESB Real Estate Assessment Reference Guide](#):
 - Occupancy rate;
 - Footfall;
 - Operational hours;
 - Weather conditions;
 - Degree days;
 - Air conditioning and/or natural ventilation;
 - Building age; and/or
 - Other.
 - If the registrant chooses to additionally disclose normalized “like-for-like” change in energy consumption, the registrant shall provide a brief description of the normalization factor and methodology or its use of a third-party methodology (e.g., “Weather Normalized Energy” as provided by ENERGY STAR Portfolio Manager®).
- .28 The registrant may choose to describe the variations in like-for-like change in energy consumption.
- Variations in energy consumption may occur based on distinctions including, but not limited to, the following:
 - Base Building, Tenant Space, and Whole Building;
 - Energy purchased by the landlord and energy purchased by tenants;
 - Managed assets and indirectly managed assets; and
 - Geographical markets.

.29 The following terms are defined according to the [2016 GRESB Real Estate Assessment Reference Guide](#):

- Base Building is defined as “Energy consumed in supplying central building services to lettable/leasable areas and common areas.”
- Tenant Space is defined as “Lettable floor area (both vacant and let/leased areas).”
- Whole Building is defined as “Energy used by tenants and base building services to lettable/leasable and common spaces. This should include all energy supplied to the building for the operation of the building and the tenant space.”
- Purchased by Landlord is defined as “Energy purchased by the landlord, but consumed by the tenant. This can include energy purchased by the landlord but used for vacant space.”
- Purchased by Tenant is defined as “Energy purchased by the tenant. Typically this is data that is not within the participants' immediate control...”
- Managed Assets and Indirectly Managed Assets are defined as follows: “This definition of Managed assets and the definition of Indirectly Managed assets are solely based on the landlord/tenant relationship. [Managed and Indirectly Managed Assets are] assets or buildings for which the landlord is determined to have 'operational control' where operational control is defined as having the ability to introduce and implement operating and/or environmental policies and measures. In case both the landlord and tenant have the authority to introduce and implement any or all of the policies mentioned above, the asset or building should be reported as a Managed asset. Where a single tenant has the sole authority to introduce and implement operating and/or environmental policies and measures, the tenant should be assumed to have operational control, so it should be considered to be an Indirectly Managed asset.”

.30 The registrant shall consider the 2016 GRESB Real Estate Assessment Reference Guide as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

IF0402-04. Percentage of eligible portfolio that (1) has obtained an energy rating and (2) is certified to ENERGY STAR®, by property subsector

.31 The registrant shall disclose the percentage of the portfolio that has a valid or current energy rating, by gross floor area, where:

- The percentage shall be calculated as the total portfolio gross floor area that obtained an energy rating divided by the total portfolio gross floor area.
- Gross floor area is defined according to the [EPA ENERGY STAR®](#) definition as “the total property square footage, measured between the principal exterior surfaces of the enclosing fixed walls of the building(s).”

- An energy rating is defined according to the [2016 GRESB Real Estate Assessment Reference Guide](#) as a scheme that measures the energy performance of buildings, including schemes solely concerned with measuring energy performance as well as cases in which an energy rating is an element of a broader scheme measuring environmental performance.
 - The scope of energy rating schemes includes:
 - ENERGY STAR® for operations in the U.S. and Canada.
 - E.U. Energy Performance Certificates (EPC) for operations in the European Union.
 - NABERS Energy for operations in Australia.
 - NABERSNZ for operations in New Zealand.
 - Other energy rating schemes that can be demonstrated to have substantially equivalent criteria, methodology, and presentation of results as those schemes above.
 - The scope of disclosure is aligned with the [2016 GRESB Real Estate Assessment Reference Guide](#) in that it “only include[s] energy ratings that were awarded before or during the reporting period (pre-assessments or other unofficial forms of pre-certification are not valid). Some energy ratings are valid for a limited period only—the rating should be effective and official during the reporting period.”
- .32 The registrant may additionally disclose the percentage by energy rating scheme (i.e., by country).
- .33 The registrant shall disclose the percentage of the portfolio that is certified to ENERGY STAR®.
- The percentage shall be calculated as the total portfolio gross floor area that is certified to ENERGY STAR® in the United States divided by the total portfolio gross floor area in the United States.
 - If property is located in Canada, the registrant may separately disclose the percentage of the portfolio in Canada that is certified to ENERGY STAR®.
 - For a property to qualify as certified to ENERGY STAR®, the certification must be effective and official during the reporting period (as aligned with the [2016 GRESB Real Estate Assessment Reference Guide](#)).
- .34 The registrant may exclude from the scope the property area that is ineligible to receive an energy rating or certification based on the property subsector, location (e.g., located in a region in which energy ratings are not a commercially available service), or other specific use characteristics.
- .35 The registrant shall consider the 2016 GRESB Real Estate Assessment Reference Guide as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

IF0402-05. Description of how building energy management considerations are integrated into property investment analysis and operational strategy

- .36 The registrant shall describe its strategic approach and the operational processes it uses to integrate energy-related considerations into its analysis of current and future property investments.
- .37 The registrant shall discuss the following elements of its strategic approach, where relevant:
- The use of energy-reduction targets and performance against those targets;
 - The integration of property energy performance into its property acquisition due diligence process, such as if these measures are qualitative in nature (e.g., whether or not the building has an energy performance certification) or quantitative in nature (e.g., the registrant adjusts occupancy rate projections based on energy performance data); and
 - Entity-level energy consumption and management policies, applicable across the registrant's portfolio (aligned with 2016 GRESB Real Estate Assessment Q8).
- .38 The registrant shall discuss the operational processes it uses, which may include, but are not limited to:
- Management of the technical energy performance of its portfolio; and
 - The integration of renewable energy into its portfolio.
- .39 Relevant elements of its technical approach may include, but are not limited to:
- Use of technical building assessments to identify energy efficiency opportunities, including whether such assessments are in-house or external and the general portfolio coverage of such assessments during the last three years (aligned with 2016 GRESB Real Estate Assessment Q16);
 - Measures implemented to improve the energy efficiency of the portfolio, including specific measures taken, general portfolio coverage of such measures, and estimated energy savings (aligned with 2016 GRESB Real Estate Assessment Q17);
 - Approach to retrocommissionings, including their applicability to the registrant's portfolio, the comprehensiveness of retrocommissionings conducted, general portfolio coverage, and estimated energy savings;
 - Use of environmental management systems to measure, manage, and improve the energy performance of buildings and such systems' alignment with third-party standards or verification (aligned with 2016 GRESB Real Estate Assessment Q21, "Environmental Management Systems"); and
 - Use of data management systems to monitor, analyze, and benchmark energy performance of individual buildings, and such systems' alignment with third-party standards or verification (aligned with 2016 GRESB Real Estate Assessment Q22, "Data Management Systems").

- .40 The registrant shall discuss its strategies relating to energy ratings, benchmarking, and certifications, including their impact on tenant demand within the registrant's target market(s); their relevance to the property types in its portfolio, such as the subsector(s), locations, and construction (new versus existing stock); and the costs and benefits associated with obtaining and maintaining an energy rating, benchmark, and certification.
- If applicable, the registrant shall discuss whether it prefers certifications that are based on ongoing performance (e.g., ENERGY STAR®) or those based on performance-modeled design objectives.
- .41 If the registrant participates in new construction or major renovations, it shall discuss whether and how it incorporates energy efficiency strategies into design and development.
- .42 The registrant shall describe its approach to renewable energy generation, which may include, but not is not limited to:
- The relevance of on-site and off-site renewable energy generation to the portfolio and energy management strategy;
 - Technical or legal limitations on the ability to incorporate renewable energy into the portfolio and energy management strategy; and
 - The energy generated from on-site and off-site renewable energy (aligned with 2016 GRESB Real Estate Assessment Q25.3).
- .43 The registrant shall consider the 2016 GRESB Real Estate Assessment as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

Water Management

Description

Buildings consume significant amounts of water in their operations, through water fixtures, building equipment, appliances, and irrigation. Operating costs resulting from water consumption may represent significant costs depending on property type, tenant operations, geographical locations, and other factors. Companies in the industry can be responsible for a building's water costs, or common area water costs, though it is common to allocate all, or a portion, of these costs to occupants. In these arrangements, water management continues to play an important role through tenant demand and regulatory exposure. Tenants may assess the water efficiency of real estate assets in an effort to control operating costs, mitigate environmental impacts of operations, and, often just as importantly, develop a reputation for resource conservation. Additionally, real estate owners may be exposed to water-related regulations even when water costs are the responsibility of occupants. Overall, companies in the industry that effectively manage water efficiency of assets, even when they don't face direct exposure to water costs, may see reduced operating costs and regulatory exposure, as well as increased tenant demand, rental rates, and occupancy rates, all of which drive revenue and asset value appreciation. Long-term historic increases in the costs of water, and expectations around continued increases due to overconsumption and constrained supplies resulting from population growth and shifts, pollution, and climate change, indicate the heightened importance of water management. The ability to improve asset water efficiency is highly dependent on the property type, locational water availability, target tenant market, local building codes, the ability to measure consumption, and the level of current efficiency of existing building stock, among other factors.

Accounting Metrics

IF402-06. Water withdrawal data coverage as a percentage of total floor area and percentage in regions with High or Extremely High Baseline Water Stress, each by property subsector

- .44 Water withdrawal data coverage shall be disclosed as a percentage and calculated as the total portfolio gross floor area with complete water withdrawal data coverage divided by the total portfolio gross floor area for which water is used, where:
- Gross floor area is defined according to the [EPA ENERGY STAR®](#) definition as “the total property square footage, measured between the principal exterior surfaces of the enclosing fixed walls of the building(s).”
 - Floor area is considered to have complete water withdrawal data coverage when water withdrawal data (i.e., amounts withdrawn) is obtained by the registrant in the relevant floor area during the fiscal year, regardless of when such data was obtained.
- .45 The scope of water withdrawals is aligned with the [2016 GRESB Real Estate Assessment Reference Guide](#), and includes water that was withdrawn from all sources, where:
- Water sources include surface water (including water from wetlands, rivers, lakes, and oceans), groundwater, rainwater collected directly and stored by the registrant, wastewater obtained from other entities, municipal water supplies, or supply from other water utilities.

- .46 The registrant shall disclose the percentage of water withdrawal data coverage in regions with High or Extremely High Baseline Water Stress as classified by the World Resources Institute's (WRI) Water Risk Atlas tool, Aqueduct (publicly accessible online [here](#)).
- The percentage shall be calculated as the total portfolio gross floor area with water withdrawal data coverage in regions with High or Extremely High Baseline Water Stress divided by the total portfolio gross floor area for which water is used in regions with High or Extremely High Baseline Water Stress.
- .47 The registrant may choose to describe the variations in water withdrawal data coverage, including the factors that influence it.
- Variations in water withdrawal data coverage may occur based on distinctions including, but not limited to, the following:
 - Base Building, Tenant Space, and Whole Building;
 - Water purchased by the landlord and water purchased by tenants;
 - Managed assets and indirectly managed assets; and
 - Geographical markets.
 - Relevant factors that influence water withdrawal data coverage may include, but are not limited to:
 - Geographical markets and the applicable enabling or inhibiting laws, regulations, and policies within such markets, including those policies of utilities;
 - Geographical markets and the applicability of risks related to water scarcity (and related current or future regulations);
 - Administrative or logistical barriers to obtaining water withdrawal data (e.g., lack of integration of utilities' data reporting systems);
 - Tenant demands around the privacy or proprietary nature of water withdrawal data;
 - Property subsectors or other more nuanced classifications of property types;
 - Lease structures, including the length in time of leases, the terms applicable to the access of water withdrawal data by the registrant, and the ability of the registrant to influence water management performance of tenant spaces; and
 - The registrant's perception that its obtainment of tenant space water withdrawal data may negatively impact tenant demand.

.48 The following terms are defined according to the [2016 GRESB Real Estate Assessment Reference Guide](#):

- Base Building is defined as water “consumed in supplying central building services to lettable/leasable areas and common areas.”
- Tenant Space is defined as “Lettable floor area (both vacant and let/leased areas).”
- Whole Building is defined as water “used by tenants and base building services to lettable/leasable and common spaces. This should include all [water] supplied to the building for the operation of the building and the tenant space.”
- Purchased by Landlord is defined as water “purchased by the landlord, but consumed by the tenant. This can include [water] purchased by the landlord but used for vacant space.”
- Purchased by Tenant is defined as water “purchased by the tenant. Typically this is data that is not within the participants' immediate control...”
- Managed Assets and Indirectly Managed Assets are defined as follows: “This definition of Managed assets and the definition of Indirectly Managed assets are solely based on the landlord/tenant relationship. [Managed and Indirectly Managed Assets are] assets or buildings for which the landlord is determined to have 'operational control' where operational control is defined as having the ability to introduce and implement operating and/or environmental policies and measures. In case both the landlord and tenant have the authority to introduce and implement any or all of the policies mentioned above, the asset or building should be reported as a Managed asset. Where a single tenant has the sole authority to introduce and implement operating and/or environmental policies and measures, the tenant should be assumed to have operational control, so it should be considered to be an Indirectly Managed asset.”

.49 Leasable floor area may be used in place of gross floor area when gross floor area is not available for the relevant area of the portfolio (e.g., if a building with an unknown gross floor area has complete water withdrawal data coverage, the leasable floor area may be added to the numerator and denominator for the relevant building in the above calculation in place of gross floor area).

.50 Number of units may be used in place of floor area in the Apartments and Lodging/Resorts property subsectors when floor area is not available.

.51 The registrant shall disclose water withdrawal data coverage separately for each portion of its portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System and include the following: Health Care, Self Storage, Industrial, Office, Apartments, Manufactured Homes, Single Family Homes, Shopping Centers, Regional Malls, Free Standing, Lodging/Resorts, Specialty, Data Centers, and Other (any other property type(s) that cannot be classified to any of the previous property subsector classifications).

.52 The registrant shall consider the 2016 GRESB Real Estate Assessment Reference Guide as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

IF0402-07. Total water withdrawn by portfolio area with data coverage and percentage in regions with High or Extremely High Baseline Water Stress, each by property subsector

- .53 The registrant shall disclose the total amount of water (in thousands of cubic meters) that was withdrawn by the portfolio area for which there is water withdrawal data coverage, where:
- Water withdrawal data shall be disclosed by (1)(a) Base Building and (b) Tenant Space or (2) Whole Building, or a combination of these.
 - The scope includes all property area in the registrant's portfolio for which there is water withdrawal data coverage, regardless of whether water is consumed by the Tenant Space or Base Building (including outdoor, exterior, and parking areas) and which party pays for water expenses.
 - The scope excludes the portion of water consumed by property area in the registrant's portfolio for which water withdrawal data is unavailable.¹⁷
 - If water withdrawal data is not available for Tenant Space or Whole Building for a property but is available for the Base Building, then the registrant shall disclose this water withdrawal data.
 - The scope of water withdrawal is aligned with the [2016 GRESB Real Estate Assessment Reference Guide](#), and includes water that was withdrawn from all sources, where:
 - Water sources include surface water (including water from wetlands, rivers, lakes, and oceans), groundwater, rainwater collected directly and stored by the registrant, wastewater obtained from other entities, municipal water supplies, or supply from other water utilities.
- .54 The registrant shall analyze all of its operations for water risks and identify activities that withdraw water in locations with High (40–80%) or Extremely High (>80%) Baseline Water Stress as classified by the WRI's Water Risk Atlas tool, Aqueduct (publicly accessible online [here](#)).
- .55 The registrant shall disclose its water withdrawn in locations with High or Extremely High Baseline Water Stress as a percentage of the total water withdrawn.
- .56 The registrant shall disclose total water withdrawn separately for each portion of its portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System and include the following: Health Care, Self Storage, Industrial, Office, Apartments, Manufactured Homes, Single Family Homes, Shopping Centers, Regional Malls, Free Standing, Lodging/Resorts, Specialty, Data Centers, and Other (any other property type(s) that cannot be classified to any of the previous property subsector classifications).

¹⁷ SASB recognizes that there may be property area in the registrant's portfolio for which water withdrawal data coverage is unavailable, in which case IF0402-07 will not reflect the entirety of water withdrawals within the portfolio.

.57 The registrant may choose to describe the variations in water withdrawn.

- Variations in water withdrawn may occur based on distinctions including, but not limited to, the following:
 - Base Building, Tenant Space, and Whole Building;
 - Water purchased by the landlord and water purchased by tenants;
 - Managed assets and indirectly managed assets; and
 - Geographical markets.

.58 The following terms are defined according to the [2016 GRESB Real Estate Assessment Reference Guide](#):

- Base Building is defined as, water “consumed in supplying central building services to lettable/leasable areas and common areas.”
- Tenant Space is defined as, “Lettable floor area (both vacant and let/leased areas).”
- Whole Building is defined as, water “used by tenants and base building services to lettable/leasable and common spaces. This should include all [water] supplied to the building for the operation of the building and the tenant space.”
- Purchased by landlord is defined as, water “purchased by the landlord, but consumed by the tenant. This can include [water] purchased by the landlord but used for vacant space.”
- Purchased by tenant is defined as, water “purchased by the tenant. Typically this is data that is not within the participants' immediate control...”
- Managed Assets and Indirectly Managed Assets are defined as, “This definition of Managed assets and the definition of Indirectly Managed assets are solely based on the landlord/tenant relationship. Assets or buildings for which the landlord is determined to have 'operational control' where operational control is defined as having the ability to introduce and implement operating and/or environmental policies and measures. In case both the landlord and tenant have the authority to introduce and implement any or all of the policies mentioned above, the asset or building should be reported as a Managed asset. Where a single tenant has the sole authority to introduce and implement operating and/or environmental policies and measures, the tenant should be assumed to have operational control, so it should be considered to be an Indirectly Managed asset.”

.59 The registrant shall consider the 2016 GRESB Real Estate Assessment Reference Guide as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

IF0402-08. Like-for-like change in water withdrawn for portfolio area with data coverage, by property subsector

- .60 Like-for-like change in water withdrawals shall be disclosed as a percentage and calculated as the total water withdrawals in the fiscal year divided by the total water withdrawals in the immediately prior fiscal year, where:
- The scope of water withdrawn included in calculation of “like-for-like change” shall be aligned with that outlined in the [2016 GRESB Real Estate Assessment Reference Guide](#) (“Like-for-like Comparison”) as including all water withdrawn by properties that were in the registrant’s portfolio for both the full fiscal year and the immediately prior full fiscal year.
 - Water withdrawn by properties that have been acquired, disposed of, under development or have undergone a major renovation during the fiscal year or the immediately prior fiscal year shall be excluded.
 - No correction for changes in the occupancy rate is needed and buildings with a high variation in vacancy rates should be included.
 - The scope excludes the portion of water withdrawn by property area in the registrant’s portfolio for which water withdrawal data is unavailable for the full fiscal year and/or the immediately prior full fiscal year.¹⁸
- .61 Like-for-like change in water withdrawals shall be disclosed by (1)(a) Base Building and (b) Tenant Space or (2) Whole Building, or a combination of these.
- If like-for-like change in water withdrawal data is not available for Tenant Space or Whole Building for a property but is available for the Base Building, then the registrant shall disclose this like-for-like water withdrawal data.
- .62 The scope, methodology, and calculations of water withdrawals shall be consistent with IF0402-07.
- .63 The registrant shall disclose like-for-like change in water withdrawn separately for each portion of its portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System and include the following: Health Care, Self Storage, Industrial, Office, Apartments, Manufactured Homes, Single Family Homes, Shopping Centers, Regional Malls, Free Standing, Lodging/Resorts, Specialty, Data Centers, and Other (any other property type(s) that cannot be classified to any of the previous property subsector classifications).
- .64 The registrant should disclose the floor area, in square feet, included in the scope of like-for-like change in water withdrawals if the scope significantly diverges from the floor area of water withdrawal data coverage.

¹⁸ SASB recognizes that there may be property area in the registrant’s portfolio where water withdrawal data coverage is unavailable, in which case IF0402-08 will not reflect the entirety of water withdrawals within the portfolio.

.65 “Like-for-like” data collection, analysis, and disclosure may be consistent with the approach with which the registrant discloses its financial reporting data.

- If the registrant discloses its financial reporting data using a concept and methodology similar to “Like-for-Like Comparison,” the registrant shall describe divergences between the scope of assets and/or floor area used in its financial reporting and its like-for-like change in water withdrawn. For example, if additional assets are excluded from the like-for-like change in water withdrawn relative to like-for-like financial reporting as a result of data coverage limitations, such inconsistencies shall be described.

.66 The registrant may choose to additionally present like-for-like change in water withdrawals on a normalized basis.

- Normalization factors and methodologies may include, but are not limited to, the following which are presented in the [2016 GRESB Real Estate Assessment Reference Guide](#):
 - Occupancy rate;
 - Footfall;
 - Operational hours;
 - Weather conditions;
 - Degree days;
 - Air conditioning and/or natural ventilation;
 - Building age; and/or
 - Other.
- If the registrant chooses to additionally disclose normalized “like-for-like” change in water withdrawn, the registrant shall provide a brief description of the normalization factor and methodology or its use of a third-party methodology.

.67 The registrant may choose to describe the variations in like-for-like change in water withdrawn.

- Variations in water withdrawn may occur based on distinctions including, but not limited to, the following:
 - Base Building, Tenant Space, and Whole Building;
 - Water purchased by the landlord and water purchased by tenants;
 - Managed assets and indirectly managed assets; and
 - Geographical markets.

.68 The following terms are defined according to the [2016 GRESB Real Estate Assessment Reference Guide](#):

- Base Building is defined as water “consumed in supplying central building services to lettable/leasable areas and common areas.”
- Tenant Space is defined as “Lettable floor area (both vacant and let/leased areas).”
- Whole Building is defined as water “used by tenants and base building services to lettable/leasable and common spaces. This should include all [water] supplied to the building for the operation of the building and the tenant space.”
- Purchased by Landlord is defined as water “purchased by the landlord, but consumed by the tenant. This can include [water] purchased by the landlord but used for vacant space.”
- Purchased by Tenant is defined as water “purchased by the tenant. Typically this is data that is not within the participants' immediate control...”
- Managed Assets and Indirectly Managed Assets are defined as follows: “This definition of Managed assets and the definition of Indirectly Managed assets are solely based on the landlord/tenant relationship. [Managed and Indirectly Managed Assets are] assets or buildings for which the landlord is determined to have 'operational control' where operational control is defined as having the ability to introduce and implement operating and/or environmental policies and measures. In case both the landlord and tenant have the authority to introduce and implement any or all of the policies mentioned above, the asset or building should be reported as a Managed asset. Where a single tenant has the sole authority to introduce and implement operating and/or environmental policies and measures, the tenant should be assumed to have operational control, so it should be considered to be an Indirectly Managed asset.”

.69 The registrant shall consider the 2016 GRESB Real Estate Assessment Reference Guide as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

IF0402-09. Discussion of water management risks and description of strategies and practices to mitigate those risks

.70 The registrant shall discuss its risks associated with water withdrawals.

.71 The registrant shall discuss, where applicable, risks to the availability of adequate, clean water resources.

- Relevant information to provide may include, but is not limited to:
 - Environmental constraints, such as operating in water-stressed regions, drought, interannual or seasonal variability, and risks due to the impact of climate change.
 - External constraints, such as volatility in water costs, stakeholder perceptions and concerns related to water withdrawals (e.g., those from local communities, non-governmental organizations, and regulatory agencies), direct competition with and impact from the actions of

other users (commercial and municipal), restrictions to withdrawals due to regulations, and the ability to obtain and retain water rights or permits.

- How risks may vary by withdrawal source, including wetlands, rivers, lakes, oceans, groundwater, rainwater, municipal water supplies, or supply from other water utilities.

.72 The registrant should include a discussion of the potential impacts that these risks may have on its operations and the timeline over which such risks are expected to manifest.

- Impacts may include, but are not limited to, those associated with costs, revenues, liabilities, continuity of operations, and reputation.

.73 The registrant shall provide a description of its short-term and long-term strategy or plan to manage these risks, including the following, where relevant:

- Any water management targets it has set, and an analysis of performance against those targets.
 - Water management targets can include water management goals that the registrant prioritizes to manage its risks and opportunities associated with water withdrawals, consumption, or discharge.
 - Targets can include, but are not limited to, those associated with reducing water withdrawals, reducing water consumption, reducing water discharges, and improving water discharge quality.
- The scope of its strategy, plans, or targets, such as whether they pertain differently to different business units, geographies, or water-consuming operational processes.
- The activities and investments required to achieve the plans and targets, and any risks or limiting factors that might affect achievement of the plans and/or targets.

.74 For water management targets, the registrant shall additionally disclose:

- The percentage reduction or improvements from the base year, where:
 - The base year is the first year against which water management targets are evaluated toward the achievement of the target.
- Whether the target is absolute or intensity based, and the metric denominator if it is an intensity-based target.
- The timelines for the water management plans, including the start year, the target year, and the base year.

- The mechanism(s) for achieving the target, including:
 - Efficiency efforts, such as the use of water recycling, closed-loop systems, and/or efficiency-driven equipment and appliance upgrades;
 - The planning and design for the water requirements of outdoor areas and irrigation;
 - The use of tools and technologies (e.g., the [World Wildlife Fund Water Risk Filter](#), [WRI/WBCSD Global Water Tool](#), and [Water Footprint Network Footprint Assessment Tool](#)) to analyze water use, risk, and opportunities; and
 - Collaborations or programs in place with the community or other organizations.
- .75 Disclosure of strategies, plans, and targets shall be limited to activities that were ongoing (active) or reached completion during the fiscal year.
- .76 The registrant may choose to discuss if its water management decisions and practices incorporate consideration of any additional lifecycle impacts or environmental tradeoffs for the registrant, including tradeoffs associated with land-use impacts, energy consumption, and greenhouse gas (GHG) emissions.

Management of Tenant Sustainability Impacts

Description

Real estate assets generate significant sustainability impacts, including resource consumption—namely energy and water—waste generation, and impacts on occupant health through indoor environmental quality. While companies in the industry own real estate assets, it is the tenant operations of such assets that is a dominant driver of sustainability impacts produced by the built environment. Tenants may design and construct leased spaces according to their operating needs. In turn, their operations consume significant amounts of energy and water, generate waste, and impact the health of those living, working, shopping, or visiting the properties. While these sustainability impacts are often generated by tenant operations and activities, real estate owners have an important role in influencing tenant sustainability impacts. The manner in which companies in the industry structure their agreements, contracts, and relationships with tenants is instrumental in effectively managing the sustainability impacts of their tenants, and ultimately, the impacts of their assets. Managing tenant sustainability impacts may include mitigating the problem of split incentives by aligning both parties' financial interests and sustainability outcomes, establishing systematic measurement and communication of resource consumption data, creating shared performance goals, and mandating minimum sustainability performance or design requirements, among other strategies. Effective management of tenant sustainability impacts, particularly related to energy, water, and indoor environmental quality, may drive asset value appreciation, increase tenant demand and satisfaction, decrease direct operating costs, and/or decrease risks related to building codes and regulations.

Accounting Metrics

IF0402-10. Percentage of new leases that contain a cost recovery clause for resource efficiency-related capital improvements and associated leased floor area, by property subsector

- .77 The percentage shall be calculated as the total portfolio newly leased floor area associated with leases that contain a cost recovery clause for resource efficiency-related capital improvements divided by total portfolio newly leased floor area, where:
- A cost recovery clause for resource efficiency-related capital improvements is defined as a clause in a lease agreement that allows the registrant to invest in capital improvements to the energy efficiency and/or water efficiency of properties, while recovering all or a proportion of associated expenditures from tenants, regardless of the mechanism of cost recovery.^{19, 20}

¹⁹ The definition of cost recovery clause for resource efficiency-related capital improvements is generally aligned with the [Green Lease Leaders](#) application: "Tenant cost recovery clause that can be used for energy efficiency-related capital improvements. This typically means that the list of operating expenses is expanded to include capital expenses intended to save energy, with the annual pass-through amount most often determined either by an amortization schedule or projected savings."

²⁰ The definition of cost recovery clause for resource efficiency-related capital improvements is generally aligned with the 2016 GRESB Real Estate Assessment Reference Guide: "Cost recovery clause for energy efficiency-related capital improvements: Allows the landlord to implement energy-efficiency measures during the lease and to recover a proportion or all of those costs from the tenant."

- .78 The scope of disclosure includes all of the properties in the registrant's portfolio that were newly leased during any part of the fiscal year, and for which the associated lease was executed between the registrant and the tenant.
- If the registrant executed lease amendments or letter agreements during the fiscal year that contain a cost recovery clause for resource efficiency-related capital improvements, the associated leased floor area shall be included within the scope of disclosure and shall be added to the numerator and denominator.
- .79 The registrant shall disclose the total portfolio newly leased floor area that is associated with leases that contain a cost recovery clause for resource efficiency-related capital improvements in square feet.
- .80 The registrant shall disclose the percentage of new leases that contain a cost recovery clause for resource efficiency-related capital improvements and the associated leased floor area separately for each portion of its portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System and include the following: Health Care, Self Storage, Industrial, Office, Apartments, Manufactured Homes, Single Family Homes, Shopping Centers, Regional Malls, Free Standing, Lodging/Resorts, Specialty, Data Centers, and Other (any other property type(s) that cannot be classified to any of the previous property subsector classifications).
- .81 Number of units may be used in place of floor area in the Apartments and Lodging/Resorts property subsectors when floor area is not available.
- .82 The registrant should provide a brief description of instances when such cost recovery clauses were exercised, including the extent throughout the portfolio and the financial implications.
- .83 The registrant should describe whether its standard lease contracts include a cost recovery clause for resource efficiency-related capital improvements (aligned with 2016 GRESB Real Estate Assessment Q39).
- .84 The registrant may choose to additionally disclose the percentage of all leases in effect as of the last day of the fiscal year that contain a cost recovery clause for resource efficiency-related capital improvements, calculated in a manner consistent with the above percentage.
- .85 The registrant may choose to additionally disclose the amount (in U.S. dollars) of actual capital expenditures associated with resource efficiency-related capital improvements that were recovered from tenants during the fiscal year through the use of cost recovery clauses in leases.
- .86 The registrant shall consider the 2016 GRESB Real Estate Assessment and the 2016 GRESB Real Estate Assessment Reference Guide as normative references, thus any updates made year-on-year shall be considered updates to this guidance.

IF0402-11. Percentage of tenants that are separately metered or submetered for (1) grid electricity consumption and (2) water withdrawals, by property subsector

- .87 The registrant shall disclose the percentage of tenants that are separately metered or submetered for the grid electricity usage resulting from their exclusive electricity consumption.
- The percentage shall be calculated as the total leasable floor area leased to tenants that are separately metered or submetered for their exclusive grid electricity consumption divided by the total portfolio leasable floor area.
- .88 The registrant shall disclose the percentage of tenants that are separately metered or submetered for the water usage resulting from their exclusive water withdrawals.
- The percentage shall be calculated as the total leasable floor area leased to tenants that are separately metered or submetered for the water usage resulting from their exclusive withdrawals divided by the total portfolio leasable floor area.
- .89 The registrant shall disclose the percentage of tenants that are separately metered or submetered for their exclusive grid electricity consumption and water withdrawals separately for each portion of its portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System and include the following: Health Care, Self Storage, Industrial, Office, Apartments, Manufactured Homes, Single Family Homes, Shopping Centers, Regional Malls, Free Standing, Lodging/Resorts, Specialty, Data Centers, and Other (any other property type(s) that cannot be classified to any of the previous property subsector classifications).
- .90 Number of units may be used in place of floor area in the Apartments and Lodging/Resorts property subsectors when floor area is not available.

IF0402-12. Description of approach to measuring, incentivizing, and improving sustainability impacts of tenants

- .91 The registrant shall describe its strategy and process for integrating considerations of sustainability into its leases and tenant relationships (e.g., tenant communication, voluntary initiatives, selection of a third-party property manager, if applicable, etc.) in order to measure, incentivize, and improve impacts.
- .92 For the purposes of this disclosure, the scope of sustainability topics includes the following: energy management, water management, and the impacts of properties on tenant health, including indoor environmental quality.
- .93 Relevant strategies to discuss include, but are not limited to:
- The following components of the 2016 GRESB Real Estate Assessment Q39.1:
 - Whether the registrant has agreements with its tenants to mutually share energy consumption and/or water withdrawal data.

- Whether the registrant has shared energy consumption and water withdrawal targets.
 - Whether the registrant establishes requirements that any tenant works should meet standards provided by the registrant related to energy consumption, water efficiency, and indoor environmental quality.
 - Whether the registrant establishes requirements that its tenants provide accurate information required for mandatory energy rating schemes.
 - Whether the registrant has the ability to prioritize sustainability requirements over minimizing the costs of improvements and adjustments.
 - Whether the registrant prioritizes separately metering or submetering tenant energy consumption and water withdrawals, and if so, if the registrant also prioritizes its own ability to measure the energy consumption and water withdrawals by its tenants.
 - Whether the registrant prioritizes lease structures that require tenants to pay grid electricity and water utility expenses that are directly based on their actual and exclusive consumption of such resources.
- .94 The registrant shall include a discussion of its support, participation, and usage of third-party initiatives concerning green leases.
- Third-party initiatives concerning green leases include, but are not limited to, green lease templates, principles, requirements, strategies, and educational programs provided by organizations.
 - Examples of third-party initiatives concerning green leases include, but are not limited to:
 - Green Lease Leaders and Green Lease Library (programs jointly operated by the Institute for Market Transformation and the U.S. Department of Energy's Better Building Alliance);
 - Building Owners and Managers Association International, "Commercial Lease: Guide to Sustainable and Energy Efficient Leasing for High-Performance Buildings;"
 - Natural Resources Defense Council, "Energy Efficiency Lease Guidance;"
 - Corporate Realty, Design & Management Institute, "Model Green Lease;"
 - U.S. General Services Administration, "Green Lease Policies and Procedures;"
 - California Sustainability Alliance, "Green Leases Toolkit;"
 - Real Property Association of Canada, "Green Office Leases;" and
 - U.S. Green Building Council, "Green Office Guide: Integrating LEED into Your Leasing Process" and "Greening Your Lease."

- .95 The registrant shall describe whether third-party initiatives concerning green leases are integrated into its standard lease contracts (generally aligned with GRESB Real Estate Assessment Q39.1).
- .96 The registrant shall discuss how the lease types it uses (e.g., triple-net, full-service) and their provisions (e.g., cost recovery clauses, tenant fit out guides, utility information sharing, mandatory participation in energy ratings, etc.) may influence or incentivize tenant behavior related to sustainability impacts.
- The registrant may provide a discussion of how such lease structures may impact property values, including tenant demand and the associated rental rates and occupancy rates, over the long term.
- .97 The registrant shall consider the 2016 GRESB Real Estate Assessment as a normative reference, thus any updates made year-on-year shall be considered updates to this guidance.

Climate Change Adaptation

Description

Climate change affects companies in the industry via frequent or high-impact extreme weather events and changing climate patterns. The manner in which a company's business model is structured to incorporate ongoing assessments of climate change risks, and the adaptation to such risks, is likely to be increasingly connected to company value over the long term. More specifically, investment strategies with assets located on floodplains and in coastal regions that are exposed to inclement weather may have increased needs around risk mitigation and business model adaptation to climate change over the long term. These strategies are especially important in light of the long-term challenges associated with flood insurance rates, the financial stability of government-subsidized flood insurance programs, and financing stipulations or other creditor concerns. Besides insurance, other risk mitigation measures include improvements to physical asset resiliency and lease terms that transfer risk to tenants, although these measures can create their own costs and risks for real estate companies. To ensure long-term growth and protection in shareholder value, companies need to implement climate change adaptation strategies that are comprehensive, account for trade-offs between various risk mitigation strategies, and integrate consideration of all projected costs and benefits over the long term.

Accounting Metrics

IF0402-13. Area of properties located in FEMA Special Flood Hazard Areas or foreign equivalent, by property subsector

- .98 The registrant shall disclose the total leasable floor area of properties in the registrant's portfolio that are located in special flood hazard areas, where:
- FEMA Special Flood Hazard Areas (SFHA) are defined as land areas covered by the floodwaters of the base flood on National Flood Insurance Program (NFIP) maps. An SFHA is an area where the NFIP's floodplain management regulations must be enforced and where the mandatory purchase of flood insurance applies. The SFHA includes Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE, and V. Examples of SFHAs include coastal floodplains, floodplains along major rivers, and areas subject to flooding from ponding in low-lying areas.
 - The scope of disclosure includes properties located in the U.S. that are designated by FEMA as SFHA, as well as properties located outside of the U.S.
 - For non-U.S. properties that fall outside of the scope of FEMA, the foreign equivalent is the area that will be inundated by a flood event that has a one-percent chance of being equaled or exceeded in any given year (i.e., the 100-year floodplain).
- .99 Number of units may be used in place of floor area in the Apartments and Lodging/Resorts property subsectors when floor area is not available.

- .100 The registrant shall disclose the area of properties located in FEMA SFHAs separately for each portion of its portfolio where properties are classified into subsectors that are aligned with the FTSE NAREIT Classification System and include the following: Health Care, Self Storage, Industrial, Office, Apartments, Manufactured Homes, Single Family Homes, Shopping Centers, Regional Malls, Free Standing, Lodging/Resorts, Specialty, Data Centers, and Other (any other property type(s) that cannot be classified to any of the previous property subsector classifications).
- .101 The registrant should separately provide the planned leasable floor area of properties under development or construction that are located in FEMA SFHAs.
- .102 The registrant may disclose its risk perception and potential impacts resulting from reclassification of FEMA SFHAs, including the risk of expansion of such areas into real estate property owned by the registrant.

IF0402-14. Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks

- .103 The registrant shall discuss the risks and/or opportunities that are presented to its portfolio by climate change scenarios, including, where relevant:
- Identification of the risks presented by climate change, including, but not limited to, availability of water, extreme weather events, evolving regulation and legislation, impacts on regional infrastructure, and impacts on local economies and populations, regardless of the impact of physical risks presented to the registrant's portfolio.
 - Discussion of the scenarios used to determine the risks and opportunities presented by climate change.
 - Discussion of how such scenarios will manifest (e.g., effects directly on the registrant or effects on the registrant's tenants).
 - The timeline over which such risks and opportunities are expected to manifest.
 - How risks and strategies may differ by property subsector.
 - How risks and strategies may differ by region.
- .104 The registrant shall discuss efforts to assess and monitor the impacts of climate change and the related strategies to alleviate and/or adapt to any risks and/or utilize any opportunities, where:
- Alleviation strategies include, but are not limited to, use of property insurance, flood insurance, lease structures, and lease durations.
 - Adaptation strategies include, but are not limited to, physical asset resiliency and contingency plans.

- .105 The registrant's discussion shall include a differentiation between physical asset risk and financial risk in order to focus on the risks and alleviation and/or adaptation strategies that are most likely to impact company value.

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