

RMO- Catastrophe Model Metrics- Help

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Single Site Probabilistic Flood Risk Metrics – Inland Flood Only

This report provides probabilistic loss metrics based on the CoreLogic U.S. Inland Flood model

Coverage:

- U.S. conterminous 48 states
- Includes flood risk both inside and outside of 100-year floodplains

Data Capture:

- Policy limits and deductibles
- Coverage replacement cost values, limits and deductibles
- Property characteristics

Report Data Output:

- Loss metrics (AAL and PML)
- Return period water depths
- Location relative to FEMA 100-year floodplain (SFHA)
- Property Elevation
- Water Surface Elevation
- Hydrologic Unit Code

Overview

The CoreLogic probabilistic U.S. Inland Flood model provides the underwriter with loss metrics used to directly develop pricing based on not just hazard, but also potential damage to the structure. The U.S. Flood Model single site metrics include multiple risk attributes to improve the understanding of modeled outputs. These include a selection of probabilistic loss metrics, ground elevation, distance to flood zone, the hydrologic unit code and probabilistic water depths.

Leveraging more than 80 distinct geographic data sets, 300,000 simulations of seasonal flooding, and 10-meter resolution elevation data, the U.S. Inland Flood Model from CoreLogic® provides a granular, up-to-date, detailed risk model. Allied with parcel-level geocoding from CoreLogic [PxPoint™](#) the release of the single-site flood metrics in Risk Meter Online empowers the industry to appropriately and rationally estimate risk to obtain better business outcomes.

Flood Modeling

Damaging floods are very disruptive and come in many different forms. The U.S. inland flood model includes precipitation-based sources of flooding from fluvial (riverine and stream) to fluvial (off-flood plain flash flooding). It delivers a comprehensive analytic view of the risk, utilizing widespread coverage of hydrologic and hydraulic data that reflects regional flooding and drainage patterns. Storm surge flooding is modeled separately and is not included in this report.

Damage Assessment

Flood policy underwriting and management requires the incorporation of high resolution building and hazard information in analytic output. All CoreLogic building vulnerability models are building component based. Components such as first-floor elevation are used to calculate structural and contents damage, in addition to time element damage such as business interruption and additional living expenses. Separate and independent vulnerability functions are used for calculating losses for each building component and coverage type. Building characteristic modifier assumptions (or “smart

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defaults”) based on structure type, occupancy and year built are incorporated into the model and can be used when these characteristics are unknown.

DATA INPUT DEFINITIONS

In addition to the main building characteristics (construction, occupancy, year built and number of stories) other secondary structural modifiers/characteristics play an important role in the vulnerability of buildings to flood damage. For flood, the following are especially important to capture:

- First floor elevation
- Existence of basement
- Presence of split level flooring

If the secondary structural modifier is set as “Unknown”, the model includes default secondary structural modifiers that are a function of the main building characteristics. Importantly, the FEMA Flood Insurance Rate Map (FIRM date) relative to the building vintage is used to assess building characteristics based on construction codes put in place after the FIRM was put in place or updated. If secondary structural modifiers are provided for the sites, the model will use the user provided data, otherwise the analysis will automatically use the corresponding default secondary structural modifier.

Structure Information Section

Field	Definition	Values
Construction Type	Required. Construction type of building	Drop-down list of descriptions
Foundation Type	Optional	Drop-down list of descriptions
Occupancy Type Class	Required. Occupancy type of building	Drop-down list of descriptions
Occupancy Type Description	Optional for Occupancy Type. Based on Occupancy Type Class provide drop down list specific to each class.	Drop-down list of descriptions
Year Built/Year Upgraded	Required. CoreLogic pre-fill data provided if available, but can be over-ridden.	4-digit numeric
First Floor Elevation (Feet)	The first-floor elevation is the height above (or below) property ground level elevation of the lowest floor (excluding the basement)	Numeric
Number of Stories	Number of stories above ground level. CoreLogic pre-fill data provided if available, but can be over-ridden.	Numeric
Split Level	First floor elevation varies within house	Drop-down list of descriptions
Has Basement	See descriptions	Drop-down list of descriptions
Waterproofing	See descriptions	Drop-down list of descriptions

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Basement Finished	See descriptions	Drop-down list of descriptions
Wall to Floor Anchorage	See descriptions	Drop-down list of descriptions
Wall Type	See descriptions	Drop-down list of descriptions
Exterior Wall Condition	See descriptions	Drop-down list of descriptions
Flooring Type	See descriptions	Drop-down list of descriptions
Enclosure Type	<ol style="list-style-type: none"> 1) Lower level is open or has breakaway walls (V Zone), or has walls with flood openings of at least 1 square inch per square foot of wall (A Zone) 2) Solid enclosure without breakaway walls (V Zone), or no flood openings (A Zone) 	Drop-down list of descriptions
Exterior Door Type	Exterior door construction	Drop-down list of descriptions
Utilities Equipment Raised	Are the utilities and equipment raised at or above FEMA base flood elevation (BFE)?	Drop-down list of descriptions
Contents Vulnerability (Above Ground)	Vulnerability of contents to damage above ground	Drop-down list of descriptions
Contents Vulnerability (Below Ground)	Applicable to the contents in basement coverage	Drop-down list of descriptions
Contents Perishable	See descriptions	Drop-down list of descriptions

Coverage Information

Field	Definition	Values
Building		
Building Replacement Value	Required. Replacement Cost Value	Monetary value (USD)
Building Limit	Building coverage limit	Monetary value (USD)
Building Deductible	Building coverage deductible	Monetary value (USD)
Contents		
Contents Actual Cash Value	Contents coverage ACV (not RCV)	Monetary value (USD)
Contents Limit	Contents coverage limit	Monetary value (USD)
Contents Deductible	Contents coverage deductible	Monetary value (USD)
Time		
Time (Max Amount Per Year)	Time Element or Business Interruption	Monetary value (USD)
Time Limit	Time Element	Monetary value (USD)
Time Deductible	Time Element	Monetary value (USD)
Policy		
Policy Limit	Policy limit	Monetary value (USD)
Policy Deductible	Policy deductible or excess attachment value	Monetary value (USD)

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LOCATION REPORT DEFINITIONS

Financial Summary

Field	Definition	Values
Average Annual Loss	Expected value of the aggregate loss distribution. Used to assess premium needed to cover loss from a peril over time.	Monetary value (USD)
AAL Standard Deviation	The extent of variation around the average annual loss. Used to load premium calculation.	Numeric
AAL Coefficient of Variation	Variability around the Average Annual Loss (standard deviation/mean)	Numeric
50-Year Return Period AEP Gross Loss	2% probability of exceeding gross loss from one or more events in any given year	Monetary value (USD)
100-Year Return Period AEP Gross Loss	1% probability of exceeding gross loss from one or more events in any given year	Monetary value (USD)
250-Year Return Period AEP Gross Loss	0.4% probability of exceeding gross loss from one or more events in any given year	Monetary value (USD)
500-Year Return Period AEP Gross Loss	0.2% probability of exceeding gross loss from one or more events in any given year	Monetary value (USD)
50-Year Return Period OEP Gross Loss	2% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
100-Year Return Period OEP Gross Loss	1% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
250-Year Return Period OEP Gross Loss	0.4% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
500-Year Return Period OEP Gross Loss	0.2% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)

Hazard Summary

Field	Definition	Values
Is Inside 100-Year Floodplain?	Distance to FEMA Special Flood Hazard Area (SFHA). This is NOT a certified determination	Y or N
Distance To 100-Year Floodplain	Distance to nearest SFHA or nearest streamline. Zero means the location is inside the zone. This is NOT a certified determination	Distance in feet
Property Elevation	Elevation above sea level. This is NOT a certified determination	Elevation in feet
Water Surface Elevation	The water surface elevation corresponding to a 1% annual chance of flooding, before any location-specific adjustments are made	Elevation in feet
50-Year Return Period Water Depth	2% probability of exceeding flood depth occurrence in any given year	Depth in feet
100-Year Return Period Water Depth	1% probability of exceeding flood depth occurrence in any given year	Depth in feet

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250-Year Return Period Water Depth	0.4% probability of exceeding flood depth occurrence in any given year	Depth in feet
500-Year Return Period Water Depth	0.2% probability of exceeding flood depth occurrence in any given year	Depth in feet
Hydrologic Unit Code	12-digit code designating the hierarchical system of hydrologic regions, basins and watersheds as defined by the USGS (see http://water.usgs.gov/GIS/huc.html). The HUC is reported down to the sub-watershed level.	12-digit numeric

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Single Site Probabilistic Earthquake Risk Metrics – Ground Shake Only

This report provides probabilistic loss metrics based on the CoreLogic U.S. Earthquake model

Coverage:

- U.S. contiguous 48 states & Alaska
- Results are calculated for Ground Shake only

Data Capture:

- Property characteristics - (Year Built, Year Upgraded/Retrofit, Number of stories, Number of Buildings)
- Structure Type – (Timber, Masonry, ISO code, etc.)
- Occupancy Type – (Residential, Commercial, Industrial etc.)
- Coverage – Building Replacement Value, Contents, Time (Business Interruption / Additional Living Expenses)
- Insurance Conditions: Policy Limits and Deductibles

Report Data Output:

- Damage and Loss metrics:
 - Average Annual Loss (AAL)
 - Probable Maximum Loss (PML) - 4 points on the aggregate exceedance curve – AEP – 50, 100, 250 and 500-year return periods
- Hazard Summary information:
 - Controlling fault name
 - Distance to controlling fault
 - Controlling fault magnitude
 - Soil Type
 - Liquefaction susceptibility
- Hazard Output:
 - Modified Mercalli Index (MMI) Hazard return periods at site – 50, 100, 250 and 500-year return periods
 - 1-Second Spectral Acceleration (1-Sec SA) Hazard return periods at site – 50, 100, 250 and 500-year return periods

Overview

CoreLogic's US Earthquake model is consistent with the latest science, providing the underwriter with loss metrics used to directly develop pricing based on potential damage to the structure, and the hazard. Several outputs are provided to assist the underwriter in understanding the earthquake ground shake risk at each site. Financial metrics provided include the AAL (or Pure Premium) as well as the PML (or return period losses). In addition, hazard metrics are provided on the locations, giving return periods of ground shaking; two intensity measures are provided, the MMI and 1-Second Spectral Acceleration.

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Earthquake Modelling

Earthquakes, by nature, have the potential to cause major loss and disruption to society. Damage caused by earthquakes can be catastrophic and can have both a human and financial impact.

Earthquakes cause ground motion and displacement of the Earth's surface, resulting in damage to the buildings and their contents. The U.S. Earthquake model from CoreLogic offers a solution to aid in managing the financial consequences of earthquake risk.

The US Earthquake model from CoreLogic incorporates the latest science. Ground Motion intensity defines the hazard to a site, and this intensity changes as seismic waves travel outward from an earthquake rupture area; this is captured by our up-to-date Ground Motion Prediction Equations (GMPE); and the model also accounts for the effect of Soil Types on Ground Motions.

Damage Assessment

Damage from these seismic sources is captured using a robust list of vulnerability functions that are specific to the property characteristics, structure type and occupancy type of a building. These vulnerability functions are engineering based, built from the 'Ground-up'; and are validated by claims data and lessons learned from recent earthquakes.

Modelling changes

Overview

The US Earthquake model for the U.S. 48 Contiguous states has gone through a full update; and the report outputs are based on the new model. Alaska earthquake model has not changed.

Key details of the model changes are below.

The U.S. Geological Survey (USGS) released the latest iteration of the National Seismic Hazard Mapping Project (NSHMP) for the continental U.S. in 2014. In parallel, the Working Group on California Earthquake Probabilities (WGCEP) released the Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3); for seismic risk in California. This was a major update to the previous view of risk, and represents the most sophisticated scientific study of Seismic Risk in the U.S.

The CoreLogic U.S. Earthquake model that is utilized in these reports is now fully up-to-date with all these changes and the latest science; the model utilized to produce these reports also has added Time-Dependency on the major fault lines. As an earthquake occurs, this releases stress build-up on the specific part of the fault, and this can also increase or decrease stress on other related areas of the fault. This changes the likelihood of an event (its recurrence rate); and is captured in the CoreLogic model in the Time Dependent methodology.

This update provides the latest consensus view of risk of U.S. earthquake to the user. This will cause changes to the reports that would have been run under the previous model.

To give a rough indication of the model change; expect to see hazard increase considerably in North California (North of San Francisco); with slight reductions in South California. Increases in hazard in Pacific North-West, and the seismicity of the New Madrid region has increased in geographic scope, with hazard travelling further (attenuating more slowly); and increases in smaller hazard sources, so expect

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to see hazard increases in the areas North and South of the main fault lines, particularly at the AAL and the low PML return periods. These changes will also be seen in the financial losses of the reports.

DATA INPUT DEFINITIONS

Structure Information Section

Field	Definition	Values
Structure Type	Required. Construction type of building	Drop-down list of descriptions
Occupancy Type	Required. Occupancy type of building	Drop-down list of descriptions
Number of Stories	Number of stories above ground level. CoreLogic pre-fill data provided if available, but can be over-ridden.	Numeric
Year Built	Required. CoreLogic pre-fill data provided if available, but can be over-ridden.	4-digit numeric

Coverage Information

Field	Definition	Values
Building		
Building Replacement Value*	Replacement Cost Value	Monetary value (USD)
Building Coverage Limit	Building coverage limit	Monetary value (USD)
Building Coverage deductible	Building coverage deductible	Monetary value (USD)
Contents		
Contents Replacement Value	Contents coverage ACV (not RCV)	Monetary value (USD)
Contents Coverage Limit	Contents coverage limit	Monetary value (USD)
Contents Coverage Deductible	Contents coverage deductible	Monetary value (USD)
Time		
Time Max Value	Time Element or Business Interruption	Monetary value (USD)
Time Coverage Limit	Time Element	Monetary value (USD)
Time Coverage Deductible	Time Element	Monetary value (USD)
Site		
Site Limit	Site limit	Monetary value (USD)
Site Deductible	Site deductible	Monetary value (USD)

REPORT DATA OUTPUT DEFINITIONS

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Financial Summary

Field	Definition	Values
Average Annual Loss	Expected loss value of the aggregate loss distribution. Used to assess premium needed to cover loss from a peril over time.	Monetary value (USD)
Standard Deviation	The extent of variation around the average annual loss. Used to load premium calculation.	Numeric
Coefficient of Variation	Variability around the Average Annual Loss (standard deviation/Average Annual Loss)	Numeric
Aggregate Exceedance Probability (AEP)	<i>The Annual Exceedance Probability (“AEP”) gives the probability of total losses in the year of a given size or larger.</i>	
50-Year Return Period AEP Gross Loss	2% probability of exceeding total losses in any given year	Monetary value (USD)
100-Year Return Period AEP Gross Loss	1% probability of exceeding total losses in any given year	Monetary value (USD)
250-Year Return Period AEP Gross Loss	0.4% probability of exceeding total losses in any given year	Monetary value (USD)
500-Year Return Period AEP Gross Loss	0.2% probability of exceeding total losses in any given year	Monetary value (USD)

Hazard Summary

Field	Definition	Values
Controlling Fault	Name of the fault producing the greatest damage at the site based upon a 500-year T-VaR return period.	Name
Distance to controlling fault	Distance in miles from a site to the controlling fault (above)	Numeric (Miles)
Magnitude	Epicentral Magnitude of earthquake on controlling fault, expressed in Moment Magnitude (Mw)	Numeric (Mw)
Soil Type	Descriptive Soil Type as based on NEHRP definitions	Soft Soil – Hard Rock
Liquefaction susceptibility	Is site susceptible to Liquefaction (this is dictated by soil type, only Soft Soils are affected)	Y/N

Hazard by Structure/ Site Summary

Field	Definition	Values
50-Year Return Period MMI	2% probability of exceeding MMI occurrence in any given year	Numeric (MMI)
100-Year Return Period MMI	1% probability of exceeding MMI occurrence in any given year	Numeric (MMI)

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250-Year Return Period MMI	0.4% probability of exceeding MMI occurrence in any given year	Numeric (MMI)
500-Year Return Period MMI	0.2% probability of exceeding MMI occurrence in any given year	Numeric (MMI)

Field	Definition	Values
50-Year Return Period 1-Sec SA	2% probability of exceeding 1-Sec SA occurrence in any given year, measured in terms of gravity (g)	Numeric (g)
100-Year Return Period 1-Sec SA	1% probability of exceeding 1-Sec SA occurrence in any given year, measured in terms of gravity (g)	Numeric (g)
250-Year Return Period 1-Sec SA	0.4% probability of exceeding 1-Sec SA occurrence in any given year, measured in terms of gravity (g)	Numeric (g)
500-Year Return Period 1-Sec SA	0.2% probability of exceeding 1-Sec SA occurrence in any given year, measured in terms of gravity (g)	Numeric (g)

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Single Site Probabilistic Hurricane Risk Metrics – Wind Only

This report provides probabilistic loss metrics based on the CoreLogic North Atlantic Hurricane model

Coverage:

- The 20 states along the U.S. eastern coastline (including DC), the Caribbean, Bermuda, and the Gulf of Mexico.
- Results can be calculated for wind only.

Data Capture:

- Property characteristics - (Timber, Masonry, year built, number of stories...etc.)
- Occupancy - (Residential, Commercial, Industrial etc.)
- Coverage – Building, Content, (Time?)
- Insurance Policy: Replacement cost values, limits and deductibles

Report Data Output:

- Damage and Loss metrics:
 - Average Annual Loss (AAL)
 - Probable Maximum Loss (PML)
 - Exceedance 4 points – OEP/ AEP – 50, 100, 250 and 500-year return periods
- Hazard output:
 - Average Peak Gust wind speeds by Location

Overview

CoreLogic's North Atlantic Hurricane Model delivers solutions to insurance, reinsurance companies and capital markets to make key business decision about pricing, capital adequacy and enterprise risk management. The probabilistic model emulate reality closely and provides the possibility of occurrences of extremely severe events which have yet to occur. The model uses high resolution hazard model, vulnerability model, consistent with the latest science and comprehensive financial model to help clients make business decisions confidently and remain credible.

Hurricane Modeling

Hurricane risk in the U.S. is a cause of great anxiety and concern due to the history of devastating damage and insurance loss from Atlantic Hurricanes. The significant potential for severe damage from this peril presents challenges to those who manage risk when quantifying potential losses to their books of business. Expert reviews of damage to property from hurricanes demonstrate the importance of location, occupancy and construction attributes in risk estimation.

The North Atlantic Hurricane Model from CoreLogic® provides a granular, up-to-date, detailed risk model to appropriately and rationally estimate risk and obtain a better understanding of capital adequacy from hurricane winds.

The robust stochastic event set, high resolution hazard that can take advantage of PxPoint™ parcel-level geocoding, Structure Footprint and detailed component level vulnerability, the North Atlantic Hurricane Model advances improved location risk estimation. Users are empowered with a higher level of control and confidence in meeting business and regulatory requirements.

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Damage Assessment

Damage from wind is calculated using a series of vulnerability functions specific to construction type and occupancy. Vulnerability functions are created to calculate damage impacts for different building heights. Vulnerability functions are based on historically observed damage, experimental research conducted by Professors Kishor Mehta and James McDonald at Texas Tech, and structural calculations performed by CoreLogic engineers.

DATA INPUT DEFINITIONS

Structure Information Section

Field	Definition	Values
Structure Type*	Construction type of building (Masonry, Timber, Light Steel etc.)	Drop-down list of descriptions
Occupancy Type*	Occupancy type of building (Residential, commercial..)	Drop-down list of descriptions
Year Built	Year when the property was built	4-digit numeric
# of Stories	Number of stories above ground level	Numeric
Distance to Coast	The distance from this structure to a synthetic coastline in model regions where applicable	Numeric value, Miles
Ground Elevation	The ground elevation is the height above sea level of the ground on which the structure is situated.	Numeric value, Feet

*Required fields

Coverage Information

Field	Definition	Values
Building		
Building Replacement Value*	Replacement Cost Value	Monetary value (USD)
Building Coverage Limit	Building coverage limit	Monetary value (USD)
Building Coverage deductible	Building coverage deductible	Monetary value (USD)
Contents		
Contents Replacement Value	Contents coverage ACV (not RCV)	Monetary value (USD)
Contents Coverage Limit	Contents coverage limit	Monetary value (USD)
Contents Coverage Deductible	Contents coverage deductible	Monetary value (USD)
Time		
Time Max Value	Time Element or Business Interruption	Monetary value (USD)
Time Coverage Limit	Time Element	Monetary value (USD)
Time Coverage Deductible	Time Element	Monetary value (USD)

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Site		
Site Limit	Site limit	Monetary value (USD)
Site Deductible	Site deductible	Monetary value (USD)

REPORT DEFINITIONS

Financial Summary

Field	Definition	Values
Average Annual Loss	Expected loss value of the aggregate loss distribution. Used to assess premium needed to cover loss from a peril over time.	Monetary value (USD)
Standard Deviation	The extent of variation around the average annual loss. Used to load premium calculation.	Numeric
Coefficient of Variation	Variability around the Average Annual Loss (standard deviation/mean)	Numeric
<i>Aggregate Exceedance Probability (AEP)</i>	<i>The Annual Exceedance Probability ("AEP") gives the probability of total losses in the year of a given size or larger.</i>	
Aggregate Exceedance Probability 50-Year	2% probability of exceeding total losses in any given year	Monetary value (USD)
Aggregate Exceedance Probability 100-Year	1% probability of exceeding total losses in any given year	Monetary value (USD)
Aggregate Exceedance Probability 250-Year	0.4% probability of exceeding total losses in any given year	Monetary value (USD)
Aggregate Exceedance Probability 500-Year	0.2% probability of exceeding total losses in any given year	Monetary value (USD)
<i>Occurrence Exceedance Probability (OEP)</i>	<i>The Occurrence Exceedance Probability ("OEP") gives the probability of a loss of a given size or larger in a year.</i>	
Occurrence Exceedance Probability 50-Year	2% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
Occurrence Exceedance Probability 100-Year	1% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
Occurrence Exceedance Probability 250-Year	0.4% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
Occurrence Exceedance Probability 500-Year	0.2% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)

Hazard by Structure/ Site Summary

Field	Definition	Values
Wind Speed Exposure -50 Year	2% probability of exceeding Wind Speeds occurrence in any given year	MPH (Peak Gust Wind Speeds)

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Wind Speed Exposure -100 Year	1% probability of exceeding Wind Speeds occurrence in any given year	MPH (Peak Gust Wind Speeds)
Wind Speed Exposure -250 Year	0.4% probability of exceeding Wind Speeds occurrence in any given year	MPH (Peak Gust Wind Speeds)
Wind Speed Exposure -500 Year	0.2% probability of exceeding Wind Speeds occurrence in any given year	MPH (Peak Gust Wind Speeds)

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Single Site Probabilistic US Severe Convective (US SCS) Storm Risk Metrics

(Per the US SCS model in RQE v18 release)

This report provides probabilistic loss metrics based on the CoreLogic US Severe Convective Storm model

Coverage:

- U.S. conterminous 48 states
- Results can be calculated for
 - Wind, Hail and Straight-line winds separately
 - Combined results from all the sub perils

Data Capture:

- Property characteristics - (Timber, Masonry, year built, number of stories...etc.)
- Occupancy - (Residential, Commercial, Industrial etc.)
- Coverage – Building, Content, (Time?)
- Insurance Policy: Replacement cost values, limits and deductibles

Report Data Output:

- Damage and Loss metrics:
 - Average Annual Loss (AAL)
 - Probable Maximum Loss (PML)
 - Exceedance 4 points – OEP/ AEP – 50, 100, 250 and 500-year return periods
- Hazard output:
 - Average Peak Gust wind speeds by Location
 - Average Hail Size by location

Overview

CoreLogic's US Severe Convective Storm Model delivers solutions to insurance, reinsurance companies and capital markets to make key business decision about pricing, capital adequacy and enterprise risk management. The probabilistic model emulate reality closely and provides the possibility of occurrences of extremely severe events which have yet to occur. The model uses high resolution hazard model, vulnerability model, consistent with the latest science and comprehensive financial model to help clients make business decisions confidently and remain credible.

US Severe Convective Storm Modeling

The US SCS Model from CoreLogic® provides a granular, up-to-date, detailed risk model to appropriately and rationally estimate risk and obtain a better understanding of capital adequacy from Severe Convective Storm

DATA INPUT DEFINITIONS

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Structure Information Section

Field	Definition	Values
Construction Type*	Construction type of building (Masonry, Timber, Light Steel etc.)	Drop-down list of descriptions
Occupancy Type*	Occupancy type of building (Residential, commercial..)	Drop-down list of descriptions
Year Built/Year Upgraded	Year when the property was built	4-digit numeric
First Floor Elevation (Feet)	The first-floor elevation is the height above (or below) property ground level elevation of the lowest floor (excluding the basement)	Numeric
Number of Stories	Number of stories above ground level	Numeric
Roof Age	Year when to roof was installed or last replaced	4-digit numeric
Floor Area	Square footage of built area of the structure	Numeric
Roof system		Drop-down list of descriptions
Wall system		Drop-down list of descriptions
Connection system		Drop-down list of descriptions
Opening protection system		Drop-down list of descriptions
General engineering conditions		Drop-down list of descriptions

*Required fields

Coverage Information

Field	Definition	Values
Building		
Building Replacement Value*	Replacement Cost Value	Monetary value (USD)
Building Limit	Building coverage limit	Monetary value (USD)
Building Deductible	Building coverage deductible	Monetary value (USD)
Contents		
Contents Actual Cash Value	Contents coverage ACV (not RCV)	Monetary value (USD)
Contents Limit	Contents coverage limit	Monetary value (USD)
Contents Deductible	Contents coverage deductible	Monetary value (USD)
Time		
Time (Max Amount Per Year)	Time Element or Business Interruption	Monetary value (USD)
Time Limit	Time Element	Monetary value (USD)

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Time Deductible	Time Element	Monetary value (USD)
Roof ACV or RV		
Roof Replacement Value (for RV)	Replacement Cost Value	Monetary value (USD)
Roof ACV	Actual roof value	Monetary value (USD)
Limit	limit	Monetary value (USD)
Deductible	deductible	Monetary value (USD)
Policy		
Policy Limit	Policy limit	Monetary value (USD)
Policy Deductible	Policy deductible or excess attachment value	Monetary value (USD)

REPORT DEFINITIONS

Financial Summary

Field	Definition	Values
Average Annual Loss	Expected loss value of the aggregate loss distribution. Used to assess premium needed to cover loss from a peril over time.	Monetary value (USD)
AAL Standard Deviation	The extent of variation around the average annual loss. Used to load premium calculation.	Numeric
AAL Coefficient of Variation	Variability around the Average Annual Loss (standard deviation/mean)	Numeric
Aggregate Exceedance Probability (AEP)	<i>The Annual Exceedance Probability (“AEP”) gives the probability of total losses in the year of a given size or larger.</i>	
50-Year Return Period AEP Gross Loss	2% probability of exceeding total losses in any given year	Monetary value (USD)
100-Year Return Period AEP Gross Loss	1% probability of exceeding total losses in any given year	Monetary value (USD)
250-Year Return Period AEP Gross Loss	0.4% probability of exceeding total losses in any given year	Monetary value (USD)
500-Year Return Period AEP Gross Loss	0.2% probability of exceeding total losses in any given year	Monetary value (USD)
Occurrence Exceedance Probability (OEP)	<i>The Occurrence Exceedance Probability (“OEP”) gives the probability of a loss of a given size or larger in a year.</i>	
50-Year Return Period OEP Gross Loss	2% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
100-Year Return Period OEP Gross Loss	1% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
250-Year Return Period OEP Gross Loss	0.4% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)

RMO- Catastrophe Model Metrics- Help

500-Year Return Period OEP Gross Loss	0.2% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
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Hazard by Structure/ Site Summary

Field	Definition	Values
For WIND:		
50-Year Return Period Wind Speeds	2% probability of exceeding Wind Speeds occurrence in any given year	MPH (Peak Gust Wind Speeds)
100-Year Return Period Wind Speeds	1% probability of exceeding Wind Speeds occurrence in any given year	MPH (Peak Gust Wind Speeds)
250-Year Return Period Wind Speeds	0.4% probability of exceeding Wind Speeds occurrence in any given year	MPH (Peak Gust Wind Speeds)
500-Year Return Period Wind Speeds	0.2% probability of exceeding Wind Speeds occurrence in any given year	MPH (Peak Gust Wind Speeds)
For Hail:		
50-Year Return Period Hail Size	2% probability of exceeding Hail size occurrence in any given year	Inches
100-Year Return Period Hail size	1% probability of exceeding Hail size occurrence in any given year	Inches
250-Year Return Period Hail size	0.4% probability of exceeding Hail size occurrence in any given year	Inches
500-Year Return Period Hail size	0.2% probability of exceeding Hail size occurrence in any given year	Inches

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Single Site Probabilistic US Winter Storm Risk Metrics

This report provides probabilistic loss metrics based on the CoreLogic US Winter Storm model

Coverage:

- U.S. conterminous 48 states
- Results can be calculated for
 - Wind, Snowfall, Ice, Snow depth (all combined)

Data Capture:

- Property characteristics - (Timber, Masonry, year built, number of stories...etc.)
- Occupancy - (Residential, Commercial, Industrial etc.)
- Coverage – Building, Content, (Time?)
- Insurance Policy: Replacement cost values, limits and deductibles

Report Data Output:

- Damage and Loss metrics:
 - Average Annual Loss (AAL)
 - Probable Maximum Loss (PML)
 - Exceedance 4 points – OEP/ AEP – 50, 100, 250 and 500-year return periods

Overview

CoreLogic’s US Winter Storm Model delivers solutions to insurance, reinsurance companies and capital markets to make key business decision about pricing, capital adequacy and enterprise risk management. The probabilistic model emulate reality closely and provides the possibility of occurrences of extremely severe events which have yet to occur. The model uses high resolution hazard model, vulnerability model, consistent with the latest science and comprehensive financial model to help clients make business decisions confidently and remain credible.

US Severe Convective Storm Modeling

The US Winter Storm Model from CoreLogic® provides a granular, up-to-date, detailed risk model to appropriately and rationally estimate risk and obtain a better understanding of capital adequacy from winter storm in the US.

DATA INPUT DEFINITIONS

Structure Information Section

Field	Definition	Values
Construction Type*	Construction type of building (Masonry, Timber, Light Steel etc.)	Drop-down list of descriptions
Occupancy Type*	Occupancy type of building (Residential, commercial..)	Drop-down list of descriptions

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Year Built/Year Upgraded	Year when the property was built	4-digit numeric
First Floor Elevation (Feet)	The first-floor elevation is the height above (or below) property ground level elevation of the lowest floor (excluding the basement)	Numeric
Number of Stories	Number of stories above ground level	Numeric
Roof Age	Year when to roof was installed or last replaced	4-digit numeric
Floor Area	Square footage of built area of the structure	Numeric
Roof system		Drop-down list of descriptions
Wall system		Drop-down list of descriptions
Connection system		Drop-down list of descriptions
Opening protection system		Drop-down list of descriptions
General engineering conditions		Drop-down list of descriptions

*Required fields

Coverage Information

Field	Definition	Values
Building		
Building Replacement Value*	Replacement Cost Value	Monetary value (USD)
Building Limit	Building coverage limit	Monetary value (USD)
Building Deductible	Building coverage deductible	Monetary value (USD)
Contents		
Contents Actual Cash Value	Contents coverage ACV (not RCV)	Monetary value (USD)
Contents Limit	Contents coverage limit	Monetary value (USD)
Contents Deductible	Contents coverage deductible	Monetary value (USD)
Time		
Time (Max Amount Per Year)	Time Element or Business Interruption	Monetary value (USD)
Time Limit	Time Element	Monetary value (USD)
Time Deductible	Time Element	Monetary value (USD)
Policy		
Policy Limit	Policy limit	Monetary value (USD)
Policy Deductible	Policy deductible or excess attachment value	Monetary value (USD)

RMO- Catastrophe Model Metrics- Help

REPORT DEFINITIONS

Financial Summary

Field	Definition	Values
Average Annual Loss	Expected loss value of the aggregate loss distribution. Used to assess premium needed to cover loss from a peril over time.	Monetary value (USD)
AAL Standard Deviation	The extent of variation around the average annual loss. Used to load premium calculation.	Numeric
AAL Coefficient of Variation	Variability around the Average Annual Loss (standard deviation/mean)	Numeric
Aggregate Exceedance Probability (AEP)	<i>The Annual Exceedance Probability ("AEP") gives the probability of total losses in the year of a given size or larger.</i>	
50-Year Return Period AEP Gross Loss	2% probability of exceeding total losses in any given year	Monetary value (USD)
100-Year Return Period AEP Gross Loss	1% probability of exceeding total losses in any given year	Monetary value (USD)
250-Year Return Period AEP Gross Loss	0.4% probability of exceeding total losses in any given year	Monetary value (USD)
500-Year Return Period AEP Gross Loss	0.2% probability of exceeding total losses in any given year	Monetary value (USD)
Occurrence Exceedance Probability (OEP)	<i>The Occurrence Exceedance Probability ("OEP") gives the probability of a loss of a given size or larger in a year.</i>	
50-Year Return Period OEP Gross Loss	2% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
100-Year Return Period OEP Gross Loss	1% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
250-Year Return Period OEP Gross Loss	0.4% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)
500-Year Return Period OEP Gross Loss	0.2% probability of exceeding gross loss from a single event in any given year	Monetary value (USD)