JUPITER

# **FLOODSCORE**<sup>TM</sup>

#### The Impact of Flooding

Rising sea levels, more intense storms and heavier downpours related to climate change are contributing to increasingly severe and damaging floods. Coastal storms are likely to cause flooding over larger areas and to cause currently at-risk areas to flood more frequently. Heavier downpours can overwhelm existing infrastructure, causing flooding and impacting water quality. Low lying coastal areas are likely to experience more frequent tidal flooding. Understanding flood risks in advance of storms and over the longer term can help decision-makers prepare for the flood-related impacts of climate change.

Jupiter FloodScore<sup>™</sup> predicts and maps the increasing risk of flooding, from one hour to over 50 years in advance. Using Jupiter's predictive models, private and public sector organizations can make informed decisions to prevent asset damage and property loss, and even to save lives.

Hurrican Storm Surges

Runoff

### Jupiter FloodScore

Jupiter FloodScore includes operations and planning applications, and is built on top of the Jupiter ClimateScore™ Intelligence Platform providing an accurate picture of asset-level risk at less-than-one-meter resolution.

Jupiter FloodScore Planning predicts the long-term flood hazard from 6 months to over 50 years in advance. Jupiter's models predict asset-level risks from weather in a changing climate around the world. FloodScore Planning is designed to support long-term infrastructure planning, engineering, investment, lending and insurance decisions for critical assets such as electrical generation and distribution, refineries, ports and airports, and dense industrial, commercial and residential developments. Flood levels are predicted on a probabilistic basis and presented for different climate scenarios. The application also supports "what-if" analyses to evaluate potential protection measures and investment decisions over time.

**Climate Change** 

. Sea Level

Storm Intensity

Ocean Temperature

Atmospheric Moisture

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# **Flooding Variables**

# Natural Events

- Precipitation
- Hurricane Preciptation • Nor'easter Storm Surges Waves
- Temperature
- Tides • Erosion & Subsidence

- **Natural Features** 
  - Elevation
  - Sub-surface Flow Surge-river Interaction
  - Groundwater Levels

# **Constructed Features**

#### Existing City Infrastructure (e.g., tunnels, highways)

- Drainage Infrastructure
- Sewage Infrastructure
- What-if Analysis
  - Mitigation Infrastructure
- valls, cana ls, pump systems, raised roads)

Variable Interactions & Simulations



#### **FLOODING VISUALIZATIONS**

Jupiter FloodScore captures the complex interaction among flood-generating factors.





Jupiter FloodScore Operations predicts coastal flooding from storm surge and rainfall events at asset-level resolution from 1 hour to five days in advance. This application is designed to help emergency managers, retailers, infrastructure operators and property owners determine when and how to protect critical assets and property from damage prior to an event, and to make informed decisions regarding public safety. The predictions are probabilistic and scenario-based.

### Jupiter ClimateScore<sup>™</sup> Intelligence Platform

All Jupiter services are built on the cloud-based Jupiter ClimateScore Intelligence Platform. Jupiter ClimateScore is based on leading-edge scientific developments by the global earth system science community, including the assumption of a changing climate. The platform is designed specifically for the rigors of dynamic weather analysis and predictive modeling. Its physics-based and artificial intelligence models are continuously fine-tuned, using petabytes of constantly refreshed data from ground-based and orbital sensors. Innovative machine learning techniques reduce local biases of scientific simulations and update the system as new observations become available.



Jupiter ClimateScore interactive maps provide a flexible option for viewing risk analytics.

#### ABOUT JUPITER

Jupiter is the global leader in data and analytics services to better predict and manage risks from extreme weather, sea-level rise, storm intensification and rising temperatures caused by medium- to long-term climate change. Jupiter's ClimateScore<sup>™</sup> Intelligence Platform provides sophisticated, dynamic, hyper-local, current-hour-to-50-plus-year probabilistic risk analysis for weather in a changing climate. The company's FloodScore<sup>™</sup> and HeatScore<sup>™</sup> services are used for managing climate-related risk assessment and management for New York City, South Florida, Houston and Europe with global expansion underway. Jupiter's models are based on the latest science, as developed by the global Earth and Ocean Systems science community.

Jupiter offers commercial services to asset owners in critical infrastructure, financial services including insurance and banking, energy and real estate, and the public sector. These customers use Jupiter services for a broad range of applications, including capital planning, risk management, site selection, design requirements, supply chain management, investment valuations, and shareholder disclosures.