JBA risk management

THE FLOOD PEOPLE.

JBA FRANCE FLOOD MAP EXECUTIVE BRIEFING.

HIGHLIGHTS.

High-resolution 5m mapping allows assessment at property level

Consistent view of flood hazard across France covering both river and surface water flood

Better informed accumulation assessment and risk management

Seamless integration with JBA's wider Europe mapping

Our latest flood mapping for France enables insurers, reinsurers, brokers and property search companies to assess flood risk against the highest resolution flood data available in the market. The maps address both river and surface water flooding and can be used in conjunction with the river flood defended area data to present a realistic view of risk. High-resolution mapping enables the most appropriate differentiation of properties at risk for greater confidence in property level assessment, accumulation control and risk management.

Background

Spring 2016 saw widespread flooding in the Seine and Loire basins, triggering estimated insured property damages of 1.2bn Euros (OECD, 2018[1]). In January 2018, Paris was once again on high alert after the Seine burst its banks, leaving streets inundated.

The French insurance industry pays, on average, 664 million Euros a year for flood-related property damage and the French Insurance Association expects this cost to double by 2040 (AFA, 2015[2]).

Figure 1 Effect of the map resolution on risk assessment. At 5m resolution, JBA's flood maps enable accurate identification of the river channel and floodplain compared to coarser resolution mapping. 30m mapping can overestimate the flooded areas, and hence the number of properties at risk, compared to 5m mapping

[1] *OECD High Level Risk Forum Public Governance Directorate, Preventing the flooding of the Seine in the Paris – Ile de France region, Progress Made and Future Challenges, 2018 (https://www.oecd.org/gov/risk/preventing-the-flooding-of-the-seine-2018.pdf), date accessed: 18/7/2018.*

[2] *AFA in Flora Guillier, French Insurance and Flood Risk: Assessing the Impact of Prevention Through the Rating of Action Programs for Flood Prevention, International Journal of Disaster Risk Science, Volume 8, September 2017 (https://link.springer.com/article/10.1007/s13753-017-0140-y), date accessed: 18/7/2018.*

JBA risk management

THE FLOOD PEOPLE.

According to a study conducted by the Caisse Centrale de Réassurance (CCR) in association with Meteo France (Moncoulon, 2016[3]), the mean annual losses associated with climate change induced river and surface water flooding may increase by 20% by 2050 in metropolitan France.

With the upward trend of reported damages and the annual cost of flooding likely to rise under a warming climate, French insurers are becoming more and more involved with flood risk assessment and are looking towards flood prevention measures in the future[4].

As the global leader in flood risk management, we continually invest in the development of maps and models to bring the latest science and data to the forefront of flood risk management practices. As a result, we are updating our 10m Europe flood mapping to 5m, with France as the first release.

High-resolution analysis for property specific flood assessment

Our flood mapping is based on observed river gauge and rainfall data. Flood extents and water depths are derived by 2D-hydrodynamic modelling using high-resolution digital terrain data for specific return periods.

With 5m resolution, an indicative flood assessment at property level can be achieved. The maps are

MODEL FEATURES.

5m resolution

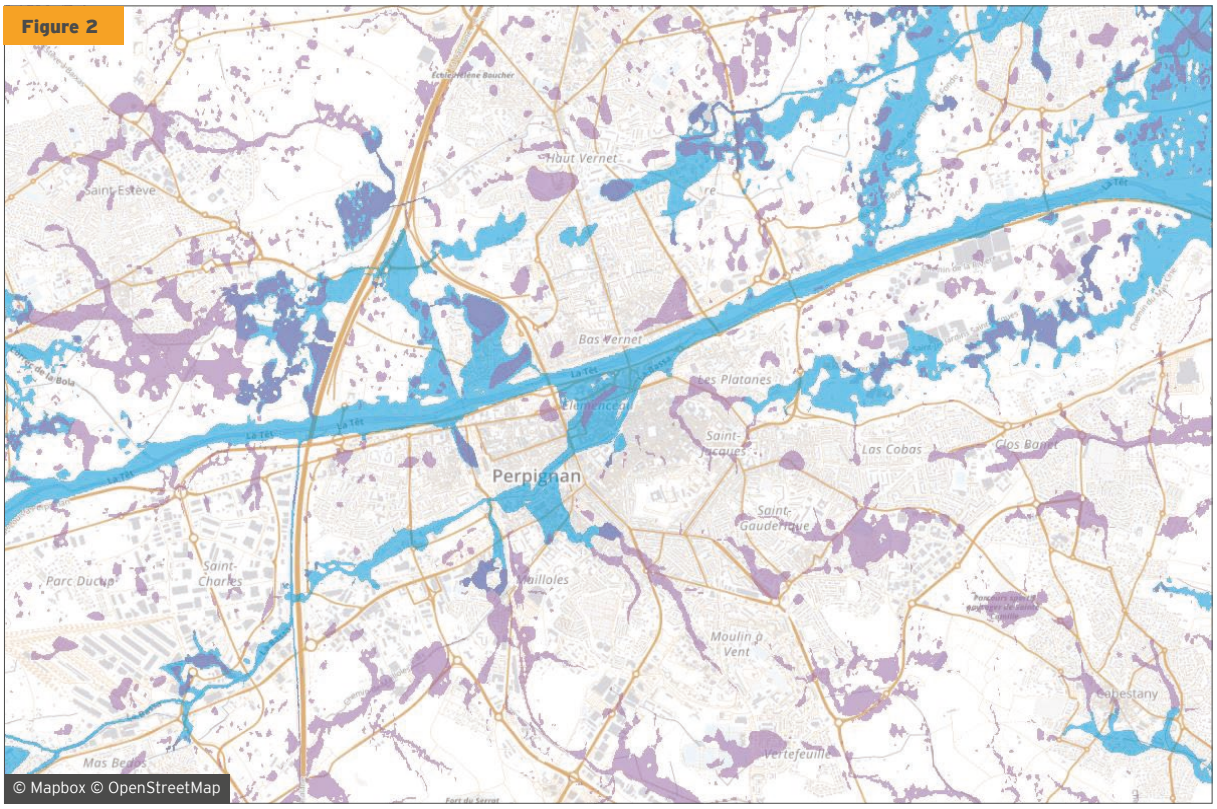
Extents and water depths

6 return periods

River flooding and surface water flooding separately identified

Complementary mapping of areas defended against river flooding

Figure 2
5m flood map extents for the 100-year return period, Perpignan, France. River flood (blue) and surface water flood (purple)



[3] *David Moncoulon, Impact of climate change on natural disaster insurance in France, Consorseguros Revista Digital, Number 04, April 2016 (http://www.consorsegurosdigital.com/en/numero-04/news/impact-of-climate-change-on-natural-disaster-insurance-in-france), date accessed: 7/8/2018.*

[4] *Flora Guillier, French Insurance and Flood Risk (https://link.springer.com/article/10.1007/s13753-017-0140-y).*

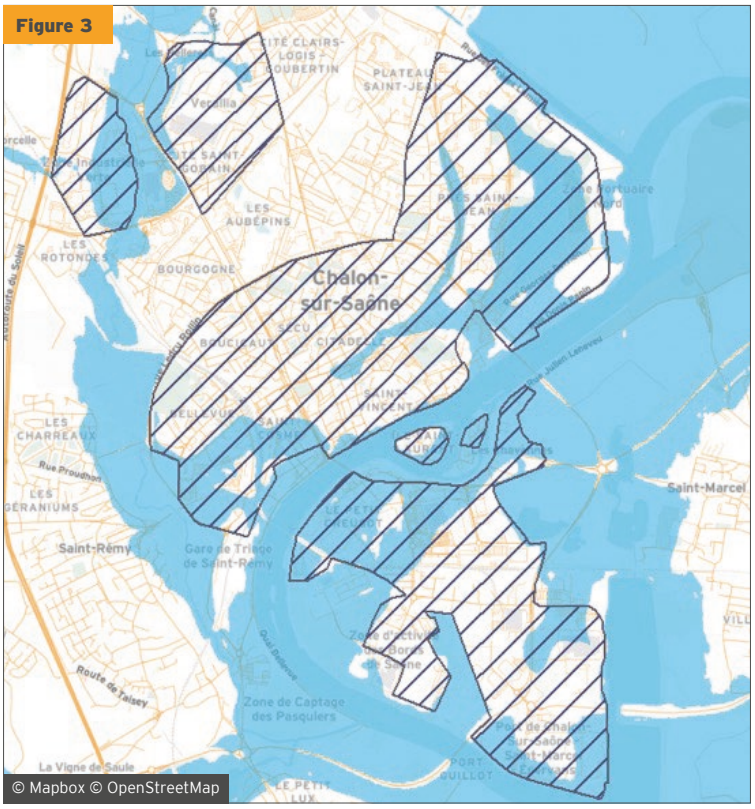


Figure 3
Example of defended river area data with a Standard of Protection of 100 years (hashed polygons) overlaid on top of the 100-year return period river flood map (blue). The overlap between both datasets indicates areas that benefit from existing flood defences during river flood events of return periods of up to 100 years

also beneficial for more detailed accumulation assessment and to help clients decide whether to obtain a site survey for any particular property. In addition, the water depth information is classified into depth bands to support property specific vulnerability consideration.

By providing the information for 6 different return periods, from 20 years to 1,500 years, the maps enable analysis against a range of flood severities, from small to extreme for the development of a detailed risk profile.

Understand the different impact of river and surface water flooding

River and surface water flooding behave in different ways and have different impacts on risk. As a result, our experienced hydrologists have developed a methodology for separately modelling natural watercourses affected by river and surface water flooding. Our comprehensive flood maps therefore provide an opportunity to consider surface water as a separate flood type in the risk assessment process.

Due to this ability to separately model river and surface water flooding, comparing flood claims data against these maps will support a greater potential insight into the type of flooding that may be the driver of the damages.

Account for the positive impact of river flood defences

The river flood map is complemented by river flood defence data based on a variety of sources, including information from national agencies and detailed local knowledge of a leading external consultant. The dataset delineates areas protected by flood defences and provides the Standard of Protection (expressed as a return period) associated with each.

The combination of the maps and defence data enables clients to decide how to consider flood defences for their own risk preferences, by choosing whether to incorporate none, some, or all of the defended areas for their risk assessment.

Model access

To enable easy integration into pre-existing systems, we provide flood map data in a range of formats either directly from JBA or via our network of resellers. We also offer consultancy opportunities to help you identify exposure hotspots, run per-risk flood assessments and manage your accumulations.

About JBA Risk Management Limited

Established in 2011, we are a global leader in flood risk management. Affectionately known as The Flood People, our flood maps, catastrophe models and analytics are used by some of the world's largest insurers, reinsurers, financial institutions, property companies and governments. We're experts in translating complex, scientific data into useful information, using sophisticated hydraulic approaches and models to provide cutting-edge flood risk intelligence.

As part of the JBA group, established over 20 years ago, we work closely with leading academic institutions in the field of flood risk. We also support our independent charity, JBA Trust, which enables research, education and training in the water environment sector.

Our commitment to continuous improvement and detailed research and development is what makes us the number one choice for many insurers, reinsurers, financial institutions and governments.

JBA risk management

THE FLOOD PEOPLE®

GLOBAL LEADERS IN FLOOD RISK MANAGEMENT.

Get in touch

hello@jbarisk.com

UK
+44 1756 799919

EUROPE
+49 8092 2326756

USA
+1 510 585 8401

SINGAPORE
+65 968 62 968

www.jbarisk.com
@jbarisk