



# Norwich Union

## Creating Equitable Insurance Quotes with GIS

### Problem

Insurance company wanted to accurately identify properties at risk from flooding and predict to what extent they would be affected.

### Goals

- Provide more accurate and realistic insurance rates.
- Lessen the risk to the insurance company.
- Provide customers with fairer quotes.

### Results

- Establishes precise flood risk of properties
- Enables insurance premiums to be adjusted based on new, more accurate data
- Gives underwriters a better understanding of risk
- Underwriters able to offer insurance that meets customers' specific needs

*"We chose ArcView because it could easily accommodate our current needs, yet is sufficiently flexible and easy to use so that it can be developed and enhanced to meet our changing requirements in the future."*

Jill Boulton  
GIS Manager, Norwich Union



*Norwich Union is the largest insurer in the United Kingdom (UK) with a market share of approximately 20 percent, insuring more than 700,000 businesses, one in five motor vehicles, and one in five households in the UK.*

*Until recently, loss and damage caused by flooding cost insurers approximately £800 million annually, with Norwich Union typically paying out £70 million on flood-related claims. In 2000, with a significant increase in the number of flood-affected properties, this figure climbed to £270 million.*

### The Challenge

Unprecedented levels of flooding in 2000 wreaked havoc across the UK for homeowners and insurance companies alike, who were caught unawares by the rising water levels. With the Environment Agency predicting that there would be a tenfold increase in the risk of similar river and lake flooding incidents over the next century, Norwich Union needed to find a better way to gain understanding of flooding patterns. Norwich Union wanted to be able to base insurance quotes on accurate, realistic information, thereby improving insurance premiums for customers and reducing risk for the organization.

Previously, Norwich Union based its quotes on data from the Environment Agency, but as Jill Boulton, GIS manager at Norwich Union, explains, this was not ideal for the insurance industry. "The data from the Environment Agency indicates which areas are at risk from flooding; however, the information is primarily gathered for planning purposes and does not take into account the specific needs of the insurance sector. The data indicates which properties are sited on a floodplain, but it does not indicate the elevation of the properties above the water level. For example, a street may be located in a floodplain, but if it is sited on a hill, properties at the top will be at less risk than those at the bottom. As such, the insurance sector needed another dimension to the data—namely, height of land—so that premiums could be set more accurately."



Learn more about ArcView at [www.esri.com/arcview](http://www.esri.com/arcview).

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## ESRI Software Used

ArcView



Norwich Union was using GIS solutions from MapInfo and SAS, but these were primarily used for simple data presentation purposes and not capable of the complex, spatially based analysis that was required to accurately model floodplains.

### The Solution

Norwich Union recognized that ESRI® ArcView® software offered a robust enterprise-level GIS platform that could accommodate the vast quantities of data generated, perform complex analysis, and be easily used by a new team of personnel.

Boulton says, "We chose ArcView because it could easily accommodate our current needs, yet is sufficiently flexible and easy to use so that it can be developed and enhanced to meet our changing requirements in the future."

ArcView allows the insurance company to view three different sets of data: elevation readings of the terrain across the UK, showing gradients of the landscape and the heights on which properties are located; hydrology data, which enables Norwich Union to predict how deep and widespread flooding is likely to be; and address point data to provide postcode identification of properties.

To make data gathering a more manageable task, Norwich Union created different catchment areas of approximately five gigabytes in size. When analysis for each area was complete, the findings were relayed into Norwich Union's main insurance underwriting and pricing systems.

Using this data and ArcView, Norwich Union can predict three key factors per house: overall likelihood of a property being flooded, the extent of flooding, and what the likely cost of damage will be. This enables the company to make decisions about whether to insure a property and at what level to set premiums.

### Results

Norwich Union sees the floodplain modeling solution as bringing huge benefits to its customers and, in turn, to the organization. As Boulton explains, "ArcView provides us with enhanced property data so we can see precisely how likely flooding is and adjust insurance premiums accordingly. We will also be able to identify an untapped market of new customers who currently live on properties that are deemed to be at risk of flooding even if the reality is somewhat different."

Through gaining a more detailed view of flood risk across the UK, Norwich Union benefited by reduced business risk and passed this benefit on to its customers through a more accurate system of flood insurance premiums. Boulton adds, "At Norwich Union, improving customer service is paramount. ESRI has enabled us to look at our data from an entirely different perspective—giving us a better understanding of risk and enabling us to offer our customers an insurance package that meets their specific needs, not those of their neighbor."

### For More Information



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