Broadland Flood Alleviation Project

Protecting

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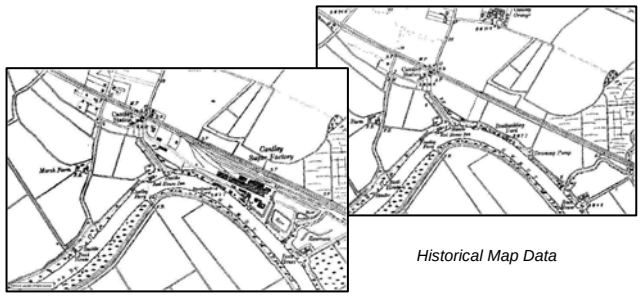
The Broadland Geographical Information System

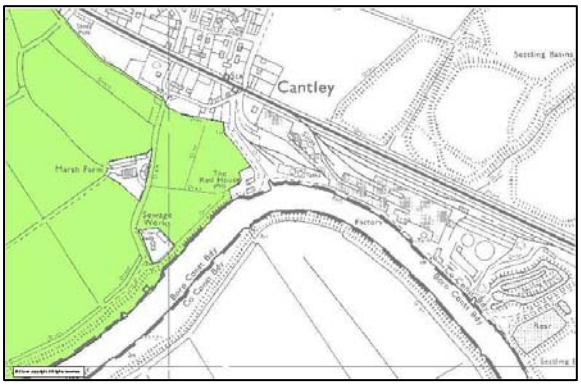
Geographical Information Systems (GIS)

In the 1930s and 40s geographical analysis was conducted by overlaying different types of maps of the same area. Since the 1950s systems have evolved to convert this mapping into digital form and more recently to use this data for analysis and problem solving. Nowadays GIS is everywhere; you may even have some GIS software on your PC without even knowing it's there!

Taken from The GIS Files pages of the Ordnance Survey website.



Historical Map Data



Example of Site of Special Scientific Interest data supplied by Natural England

Software used on the Broadland Project

The Project uses ESRI's ArcView GIS to analyse and view data. Some data has been provided by external bodies such as Broads Authority and Natural England (formerly English Nature). However, most data originates from surveys undertaken as part of the Project's activities.

Annual Condition Survey

This dataset (illustrated) is taken from the Annual Condition Survey of Flood Defence Assets. The linear data is presented visually using an invisible trace of the floodbanks to determine the route of the defences. In this example the orange line represents a location to be monitored on a regular basis. We can view photographs taken during the surveying process or characterise the data using a different set of parameters.

Sample Condition Survey Data

Example of photographs taken at location of figure on left.

Broadland Environmental Services Limited

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Environment Agency

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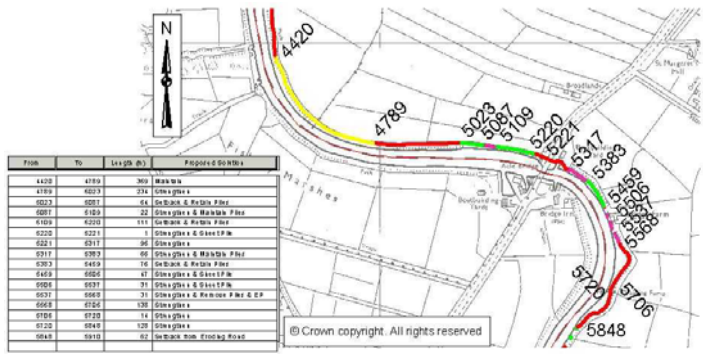
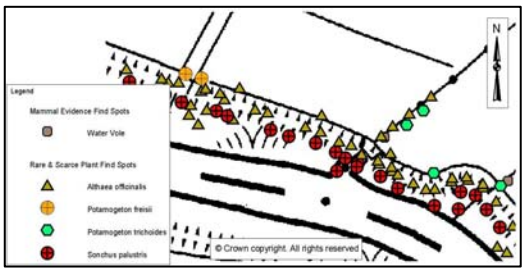
Outputs from the Strategy

The Project Strategy includes proposed solutions to provide the appropriate level of flood protection to each of the 40 compartment. The solutions are determined by inputs to a spreadsheet from sources such as the Annual Condition surveys and the topographic survey. Using a series of decision rules, the spreadsheet generates a proposed solutions for particular lengths of bank. These proposals can be validated by overlaying them onto a map of the area.



Typical output from the strategy



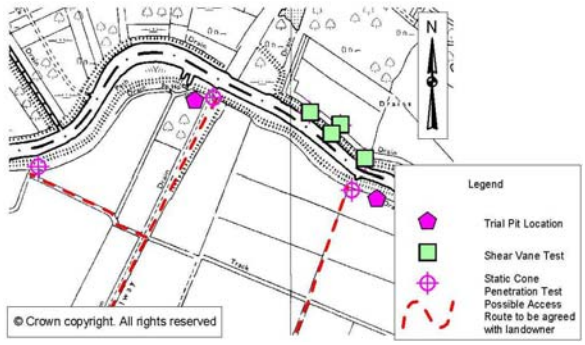
Sample Data from the Water Vole Survey and the Rare and Scarce Plants Survey

Environmental Surveys

A series of surveys are undertaken by the environmental team. These are used to identify the environmental issues associated with a particular scheme of works. These surveys are subsequently used to evaluate the success of mitigation measures following completion of works e.g. have water voles successfully recolonised a site.

Site Investigation

The type, condition and strength of the ground has a bearing on the method of construction and material sourcing so site investigations have to be undertaken early in the design process. This information can be provided to the site teams by use of a map. Where changes to these locations occur the site teams can identify new locations using the system of National Grid References and also report observations which can be visualised using the GIS.



Planning Application:

Drawings and figures produced from GIS and AutoCAD are used extensively in the Environmental Statement and Reports as a visual means of displaying data.