

# Spatial Analysis

## Travel Time Mapping for Scottish Enterprise

### Introduction

Scottish Enterprise Forth Valley (SEFV) carries out a wide range of analysis to assist in the economic development of the local area. Most recently, SEFV has been working closely with Forth Valley GIS on a study of travel times from various locations across the Central Belt.

### Requirement

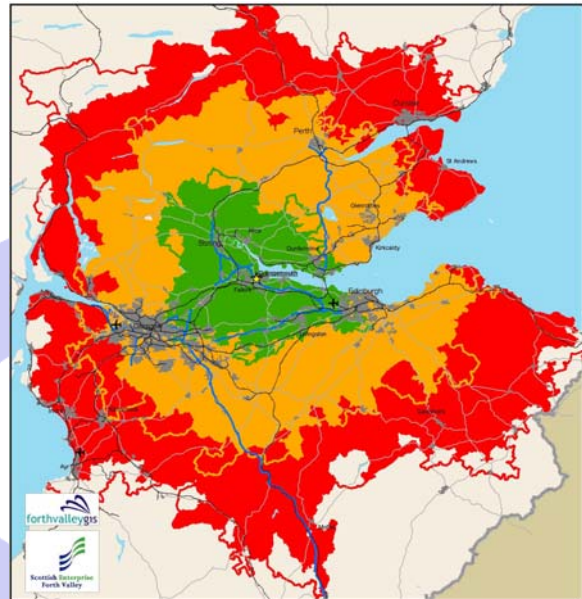
There is a recognised close relationship between a city and the region in which it is located. SEFV need to fully understand this relationship within its own "City Regions" in order to assess the possible economic benefits of resources being directed there.

One element of this is to understand the characteristics of the population living in and around the major centres. In particular SEFV wished to analyse population and business data relating to:

- peak and off-peak travel times from the centre of Edinburgh
- HGV travel from the Grangemouth Port area

### Data

Forth Valley GIS assisted SEFV with a similar travel time study in 2003 - this was based on estimated road speeds. For this new project, SEFV felt that estimated road speeds were no longer sufficient. Forth Valley GIS investigated a number of alternative solutions. This resulted in SEFV



purchasing Navteq<sup>®</sup> road network data attributed with speed information from traffic information specialists 'ITIS'. This data is gathered from a fleet of 50,000 vehicles carrying GPS technology. This measured data provides a much closer representation of reality – identifying traffic hotspots and known traffic problem areas. Population data was drawn from the 2001 Census whilst business data was compiled from information from Company House and Thompson Directory.

### Solution

Using a customisation of the ArcView<sup>®</sup> Network Analyst extension, Forth Valley GIS were able to calculate travel times (from both Edinburgh and Grangemouth) to the centre point of every census output area in Scotland. These were then merged into 30 minute travel time bands spreading out across the country.

Using these travel time bands in combination with data from the 2001 Census, SEFV were then able to gather valuable information about the population of the area around Edinburgh. They were particularly interested in data relating to the:

- industry of employment
- occupation
- qualifications

of the working age population.

Using business data it was also possible to identify those companies that were accessible by trucks travelling from Grangemouth Port.

### Benefits

The resulting information can be used in many ways - for example – by looking at the qualifications and occupations of those people living within a commutable distance from a workplace, it is possible to assess whether the area can meet the demands for a qualified workforce.

*brought to fruition. GIS analysis is now an integral part of our work – helping us to understand how the regional economy works*

*-Stuart Ogg, Executive Director, SEFV*

**Project type:** Spatial Analysis, Census Analysis, Data Management.

**Data:** Navteq 'Premium' road network data populated with ITIS Speeds.

2001 Census

Business Data from Company House and Thompson Directory™

**Software Platform:** ArcView & SQL Server

**Customers:** Scottish Enterprise Forth Valley

*This is the latest of many innovative and interesting projects which FVGIS have*

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For further information, visit our web site where you can fill in an on-line request for further information:

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