Anticipating the need for new school places
Department of Education and Skills

The Challenge

- Better understand the future need for schools places in Ireland
- Ensure enough school places are available to meet demand

The Benefits

- The ability to predict the number of school places required, by area
- Accurate information to inform planning for new and expanded schools

The Customer

The Department of Education and Skills (DES) is a public sector Government department headquartered in Dublin. It aims to provide high-quality education to enable individuals to achieve their potential, participate fully as members of society, and contribute to Ireland's social, cultural and economic development.

The Challenge

The annual total of births in Ireland has been increasing since 1995. In 2007, the figure for births of 70,620 was the highest since 1982 and was approximately 30% higher than the figure for 2000. As a direct consequence of this population growth, enrolments at primary school level have been increasing since 2001/02 and are projected to continue increase for the foreseeable future.

Meeting this heightened demand for schools places presented a major challenge for the DES. The Planning and Building Unit needed to be able to plan for future demographic growth and understand and predict where school places would be required. However, the DES didn't have an accurate map of Ireland with the locations of schools and regionalised demographic data linked to school feeder areas. Furthermore there was limited knowledge of where and what demographic changes had taken place and where and by how much they were likely to change in the future.

The department took the decision to use geographic information system (GIS) technology to help it make evidence-based decisions on where and when to build new schools. It also hoped to gain a deeper understanding of the resources (such as teachers) required to service those schools. At the time, GIS was not well known within the DES, and school locations had never been completely geo-coded.

The Solution

Initially Esri Ireland completed a consultancy project on behalf of the DES to map both Ireland's schools and demographic information about the school-going population. This was undertaken using Esri's ArcGIS for Desktop solution. The forward planning team at DES then attended training courses (ArcGIS for Desktop Levels 1 and 2) and benefited from on-site knowledge transfer. By the time that ArcGIS Desktop was deployed within the department, employees had the skills they needed to undertake GIS analysis work for themselves in the future.

"During the installation of GIS, Esri Ireland provided excellent back up to us, and the training and knowledge transfer phase of the process gave us the skills to operate the system ourselves," commented Richard Dolan, Assistant Principal Officer, Department of Education and Science. *"This was an essential element, because we need to be able to run demographic scenarios repeatedly based on changing base data."*

Learn more at: esri-ireland.ie

> **"** ArcGIS enables us to respond appropriately to increases in demand for school places and helps us to make sure that we provide the right number of school places in the right locations to meet the needs of families in Ireland. **"**

Richard Dolan, Assistant Principal Officer, Department of Education and Science
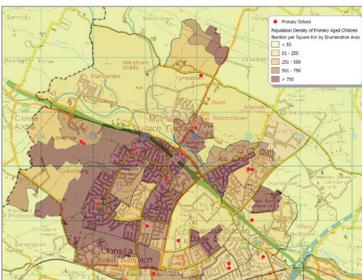
Primary school population density in Dublin 15

ArcGIS Desktop allows DES to conduct detailed analysis of each part of the country, utilising data such as planned and recent housing developments, school enrolment trends, census information, as well as birth rates and child benefit statistics. DES feeds all relevant population and school-related information into the system and produces data illustrating the demographic profile for any given area, such as the feeder area of a school, and the rate of population growth there.

Using GIS, the department can track the constant fluctuations in local populations and model a range of forecast scenarios for the coming years to see the likely changes to the school-going population in those areas. In this way, it can predict the level of school provision that will be required in an area in the future. Reports can be generated and utilised by the relevant senior management within the DES to inform decision making.

Benefits

The introduction of GIS has greatly improved DES' ability to identify the location and quantity of new school accommodation required to cater for future population changes.

Five, ten and fiftneem minute drive times to secondary schools in Tullamore

Specifically, the department is currently using the solution to help it anticipate where 100,000 new school places will need to be created over the next seven years. Thematic maps generated using ArcGIS Desktop show where the most pressing demand for places is currently – and will be in future years – so that the DES can more accurately plan based on identified and understood demographic trends.

The forward planning team within the DES now has easy access to information about the differing age cohorts of the population, aged 0-18, residing within each Electoral District and Enumeration Area; how many schools are within each of the Electoral District and Enumeration Areas; the total school enrolment for each school; the likely demand within each area; and, most importantly, where there may be a surplus and deficit of school accommodation.

Dolan says: *"ArcGIS enables us to respond appropriately to increases in demand for school places and helps us to make sure that we provide the right number of school places in the right locations to meet the needs of families in Ireland."*

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