COMPASS INFORMATICS

COMPASS RIVERSOLVER

Product Background

The Irish **Environmental Protection Agency (EPA) Licence Enforcement and Monitoring Application (LEMA) Proximity Service** requires proximity information along a river network for various applications delivered via web services.

A substantial amount of proximity information is required to calculate the **DREAM (Dynamic Risk Enforcement Assessment Methodology)** risk result.

When assessing proposed discharges from IPPC, Waste and Waste Water Discharge Applications, the EPA must determine the capacity of a river to receive the discharge and the potential environmental impact, using the **Assimilative Capacity Tool (ACT).**

Reports required for **Environmental Impact Statements (EIS)** also often include proximity information for certain feature types.

All of these applications benefit from the RiverSolver's ability to provide distance and proximity information along complex river networks across Ireland.

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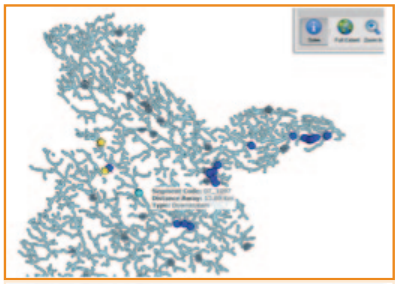
Sector Requirements

The RiverSolver was designed to help answer questions such as:

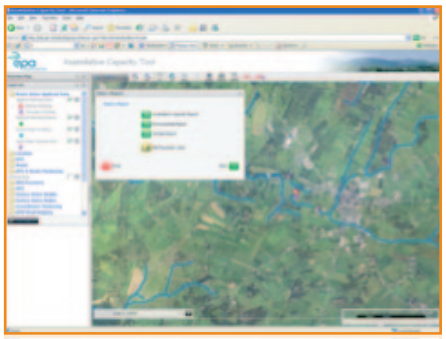
- Which individual segments lie between two points on a river network?
- What is the distance between any two points on such a network?

Compass had already developed a full suite of scripts that transformed river line feature data into a fully connected 3D river network, available in Esri's geometric network format. Further processing using custom scripts in the Python programming language permits snapping any point dataset to the river network to create records usable by the River Network Solver.

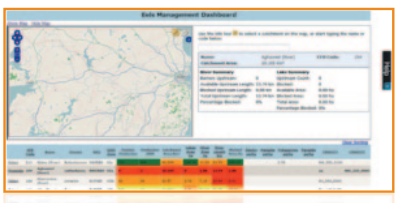


The original suite of river network solving tools created by Compass for use in the EPA's ACT (see left) using Esri's ArcObjects and ArcGIS desktop, while sufficient for a single user working on a single result (the original requirement), required a new approach where several datasets were accessed at the same time on the web for a single application.

The Solution



The Compass RiverSolver finds points upstream and downstream from an input location, on a river network, calculating the distances away from the input point (see example above). RiverSolver also returns lists of river segment codes between two locations on the river network, along with the lengths of the segments.



The user interface is simple and easy to use. Simply 'click' near a river on the map displayed in the Compass web map viewer (MapView), and the upstream and downstream points light up. Then 'hover' over these points with the mouse for more details, including their distance from the start point. Additional information can be provided, depending upon the specific application.