

Creating and sharing high quality environmental data

Ricardo

The Challenge

- Process and publish large volumes of environmental data

The Benefits

- All the tools that users need, in one place
- Efficient large-scale data processing
- Simplified data sharing with government clients
- Easy access to contextual maps and data

Ricardo has been using ArcGIS solutions to help it create and publish data on air quality and greenhouse gas emissions for many years. The migration from ArcMap to ArcGIS Pro has enabled it to accelerate complex data analyses and share its critical environmental data more easily with government clients.

The Challenge

At a time when the world urgently needs to address the climate change emergency, Ricardo is playing a vital role in helping governments to understand changes in air quality and greenhouse gas emissions. The consultancy's Energy & Environment division creates and shares data that can be used by air quality modellers, academics and policy makers to better understand climate change challenges and formulate the best new policies to improve public health. Its work is precise, detailed and specialised, demanding a high level of accuracy.

The Solution

Ricardo's services in the field of air quality and greenhouse gases have, for many years, depended on the use of ArcGIS solutions. Wanting to take advantage of the latest ArcGIS technology, the company decided to migrate to ArcGIS Pro for its desktops. It already used ArcGIS Enterprise, as well as ArcGIS Online, for sharing data internally with colleagues and externally with clients and considered the migration to ArcGIS Pro to be the logical next step.

Undertaking the migration during the COVID-19 pandemic created a few unexpected challenges for Ricardo. In particular, it discovered that it needed to upgrade its workstation graphics cards to optimise the performance of ArcGIS Pro, but there was a global shortage of graphics cards at the time. It also took users a while to adapt to the new desktop solution, but once they were familiar with the new user interface they found it easy to use.

Now, Ricardo uses ArcGIS Pro, instead of ArcMap, to analyse rasterised data on air quality, as well as emissions data, on the desktop. It also uses ArcGIS Pro to prepare and publish data via ArcGIS Online and ArcGIS Enterprise. Principal Environmental Consultant, Ioannis Tsagatakis, says: "ArcGIS Pro has good connectivity with ArcGIS Enterprise and ArcGIS Online, making it easier for us to share our work."

Ricardo makes particular use of ArcGIS Notebooks, a solution that is integrated into ArcGIS Pro and includes functionality for data cleaning and transformation, numerical simulation, statistical modelling and machine learning. ArcGIS Notebooks are now used to automate complex scripting tasks, rather than using Esri's legacy ArcInfo Workstation product. Data can be more easily transferred from ArcGIS Notebooks to ArcGIS Pro and published, improving the management of data.

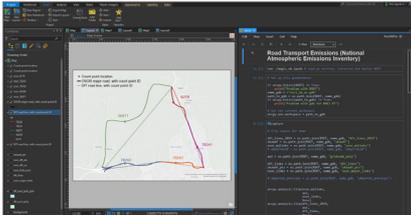
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“ ArcGIS Pro is helping us to create high quality data that can be used by governments to help improve the world we live in for us, our kids and future generations. ”

Ioannis Tsagatakis, Principal Environmental Consultant, Ricardo



The Benefits

All the tools that users need, in one place

Everything that employees used to do with ArcMap can be done with ArcGIS Pro, but now all the tools and features are easier to find and use. Consequently, Tsagatakis believes it will be much simpler for new users to start using ArcGIS to undertake projects for clients, to the high standard that is necessary. “Our work estimating air quality is vitally important,” he says. “ArcGIS Pro is helping us to create high quality data that can be used by governments to improve the world we live in for us, our kids and future generations.”

Efficient large-scale data processing

Using ArcGIS Notebooks in ArcGIS Pro, Ricardo can apply scripting to automate highly complex data analyses and create cost-effective, repeatable processes. For example, the company is using ArcGIS Notebooks to allocate traffic emissions to Ordnance Survey’s Open Roads data, in what is a complex, enormous and annual project funded by the Department of Business, Energy and Industrial Strategy (BEIS) and the Department of Environment, Food and Rural Affairs (Defra). “Using the data processing capabilities of ArcGIS Pro makes our work as efficient and error free as possible,” Tsagatakis explains. “It enables us to complete high quality projects for our government clients within the time and budget they have available.”

Simplified data sharing with government clients

The tight integration of ArcGIS Pro with ArcGIS Enterprise and ArcGIS Online makes it far easier for Ricardo to publish its data and share it with its clients, including Defra and BEIS, as well as international clients including, most recently, government departments in Cyprus and Peru. It used ArcGIS Pro to create the spatial components of a tool for viewing heat demand data across different postcodes and regions of Cyprus. It then published this data online, using ArcGIS Online, enabling people to explore the data on interactive maps.

Easy access to contextual maps and data

With ArcGIS Pro, it is easier for users to access new base maps and add data from the Esri Living Atlas to enhance projects. For example, when Ricardo was asked to review agriculture emissions data from the EU member states, it was able to quickly download land cover maps from the Living Atlas, which enabled it to see patterns of agriculture emissions against land type in ArcGIS Pro and visually verify the accuracy of the data. As Tsagatakis says, “Being able to add land cover data and other data sets to our projects, with just a few clicks, is one of the beautiful things about using ArcGIS Pro.”

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