



County of Essex Gets the Big Picture Optimizing Imagery Through a Server-Based Approach

The County of Essex is the southernmost county in Canada and the second most populated in Ontario. It is one of the most agriculturally productive counties in the nation and a leader in manufacturing. Their GIS Department is responsible for coordinating various GIS activities for seven local municipalities and helps to determine GIS software and hardware needs, promote the establishment of spatial data and technology standards, and provide direction for the management of regional spatial datasets.

Imagery supplied by the County of Essex is leveraged by many departments in local municipalities and is available for public consumption over the web. Residents can take advantage of an interactive map to locate schools, recreational buildings, municipal institutions, hospitals, churches and police and fire stations. They can also purchase aerial photography and download maps directly from the County's website.

In 2006, the County of Essex decided to improve their image services by replacing existing gray-scale images with full-colour, high resolution aerial photos that were flown at a scale of 1:10,000. However, when the GIS department attempted to store the aerial photography as compressed raster imagery and serve it up through ArcIMS, the interactive mapping sites became unstable and prone to crash during a request. The photos were simply too large to display in a fashion that the County and municipalities had become accustomed to and they were in need of a new approach to image management to quickly access, display and serve up their new full-colour imagery.

The GIS department had previously stored imagery as compressed mosaiced images and leveraged ArcIMS technology to make the data available to municipal departments and online for

public consumption. When they discovered that the new full-colour aerial photographs would be too large to display using web-based products, the County licensed the ArcGIS Server Image Extension and transitioned to a server-based approach to imagery.

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Mike Sherwood, County of Essex

The Image Extension was integrated with ArcGIS Server at 9.3 and utilizes the server to process imagery on demand. This method allows users to store only base imagery and deliver multiple services of the same or overlapping geographic areas without duplicating the storage of the same raster information. The Extension works by processing imagery requests from desktop, web or mobile clients, interpreting the requests and assigning them to a service provider. The service provider then processes the data and delivers the final imagery to the client.

To implement the solution, the GIS department at the County of Essex removed the 2-terabytes of mosaiced and compressed aerial photos from their website and loaded and compiled the raw TIFFs into image services. The Image Extension works directly with raw data, so that once the data was loaded and a service was created, it could be immediately hosted and served.

To support growing demands from multiple county and municipal departments including engineering, public works, infrastructure management and permitting, the Image Extension employs an extremely efficient workflow and

utilizes the same base data to create multiple image products at the same time. Only the imagery that is requested by the client is served up, keeping response times to a minimum.

“We are no longer bottlenecked by server space and are now able to display more imagery than ever before,” said Mike Sherwood, GIS Technician, County of Essex. “The switch to the ArcGIS Server Image Extension has enabled the County to quickly display detailed high resolution imagery using less storage, even when served up to multiple users. It has provided an extremely detailed view of our raster imagery and the quality of the data is never degraded.”

The ArcGIS Server Image Extension enables the County of Essex to serve up high resolution, full-colour imagery to citizens of the county and departments within municipalities. The County can also serve multiple years of imagery using the same license, and change the properties and display settings of a specific service without modifying the raw data.

By leveraging multiple image services, the Image Extension can support competing demands from municipal departments, and data quality is never compromised. It works directly with raw imagery, so the County saves time and server space by no longer needing to preprocess and maintain multiple datasets. With this new approach to data management and display, imagery displays in one sixth of the time that it used to take, eliminating costly delays and enabling municipal departments to work more efficiently. ■