City of Hamilton Empowers Citizens and Employees with GIS

Mapping apps are having a big impact in the City of Hamilton. They're helping the City organize hundreds of thousands of engineering records, monitor a multi-million dollar streetlight replacement project and promote investment in the area. Not bad for a municipality that adopted ArcGIS only a few years ago.

"Our recent work with Esri Canada has empowered our employees with exceptional GIS tools for delivering greater transparency and enhanced services to citizens," said Gord McGuire, Manager, Geomatics & Corridor Management, City of Hamilton. "ArcGIS has helped us become more agile, and it has improved our capability to leverage enterprise data and quickly deploy apps to support our workflows."

Here's a brief look at some of the City of Hamilton's initiatives that leverage Esri technology.

Enhanced Records Management System

Two years ago, the City's Public Works Department evaluated **ArcGIS Online** to see how the cloud-based platform could be used in their operations. Several department members attended the Esri International User Conference in San Diego and were impressed by the number of apps that could be developed with the technology. Shortly after attending the Conference, team members worked with **Esri Canada's Professional Services** team to revamp Hamilton's online engineering records system.

In 2014, the City retired its homegrown plans and records system and launched SPIDER (Spatially Indexed Engineering Records), which allows staff and partners to access more than 200,000 engineering records through an interactive web map. The City used ArcGIS for Server to store, integrate and serve up their datasets through SPIDER's map interface in ArcGIS Online.

Hamilton's new online engineering records system provides secure, role-based access to internal departments and external partners, such as utilities and engineering consultants and contractors. SPIDER proved to be an immediate success—receiving more than 1,500 visits within a month of its initial release. It's become an efficient data-sharing framework that's estimated to save the City approximately $130,000 annually. Also, the system recently won the 2016 Ontario Public Works Association IT Project of the Year Award.

Streetlight Conversion Program

The City recently completed an extensive streetlight retrofit project that replaced over 10,000 High Pressure Sodium (HPS) streetlights with energy-efficient light-emitting diode (LED) technology. By replacing 10,000 HPS lights with LEDs, the City is projected to reduce its energy consumption by the equivalent of 720 residential homes—an annual energy savings of more than $750,000.

As streetlights were replaced, the City needed to inspect the lights. Traditionally, this would be done by recording information about the installed streetlights on paper forms while in the field, then updating the information to a spreadsheet or database when the

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inspector was back in the office so that it could be shared with the finance department.

Instead, the City developed a mobile app using **Collector for ArcGIS** that allowed an inspector to log their location; capture photos, videos and data on the retrofitted streetlights; and update the data immediately to the corporate GIS. The information was then displayed on an operational dashboard that provided the City's public works team with a view of the installation progress.

With only one full-time inspector equipped with the app on an iPad, the City inspected all 10,300 retrofitted streetlights in just five months. Thanks in large part to the handy, GIS-based app, they saved approximately one month of staff time.

To keep stakeholders and citizens informed about the project's progress, the City created the **Hamilton Streetlighting Story Map**. The interactive map incorporates various information, such as installation timelines, types of LED lights used, approved contractors and amount of energy saved. It also integrates real-time data from the City's operational dashboard to show the number of successfully installed streetlights.

Corridor Activities Communication

Hamilton has a comprehensive plan in place to grow and develop corridors throughout the city. Corridors are defined in the Urban Hamilton Official Plan (2011) as "areas of street-oriented uses which incorporate a mix of retail, employment and residential uses, developed at overall greater densities, located along arterial roads serving as major transit routes". The City views corridors as a significant opportunity to improve infrastructure and assets, which in turn helps to attract investment and increase population growth.

The City has created an app to communicate activities to the public related to corridors in Hamilton. Configured using **Web AppBuilder for ArcGIS**, the **Hamilton – Corridor Activities app** features a map-based interface that provides updates on road permits and capital projects. Users can locate information related to corridor growth and development by accessing the map. For example, active projects can be identified and selected to learn about the type of work being completed, project costs and estimated completion date.

Residents who contact the City for information related to corridors can be directed to the app, which draws upon information organized in a central database. This has streamlined the way city staff locates and communicates information to the public.

Promoting Economic Development

The mission for Hamilton's Economic Development Office is to facilitate continued economic growth, job creation and revitalization in the City. To achieve this end, staff created the **Invest in Hamilton app**
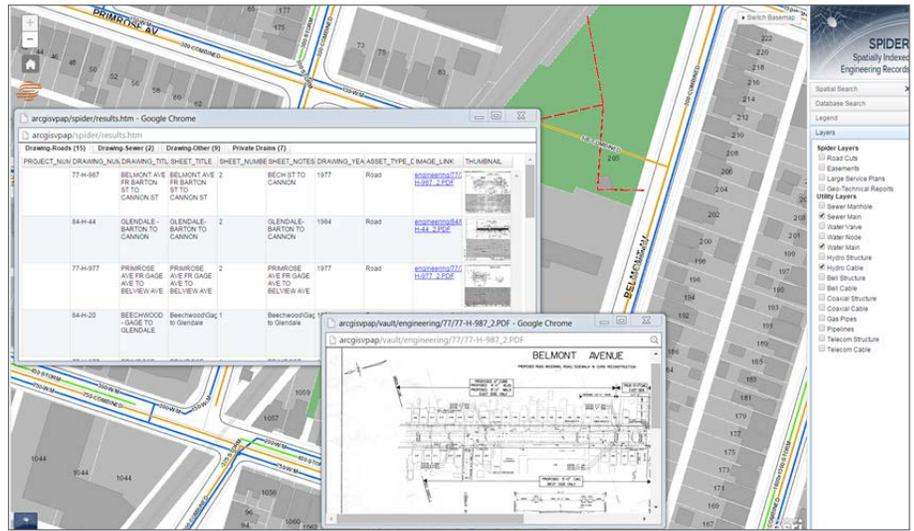
Hamilton's SPIDER app lets users find records by leveraging a variety of searching options, including keyword, topic, spatial and thumbnail.
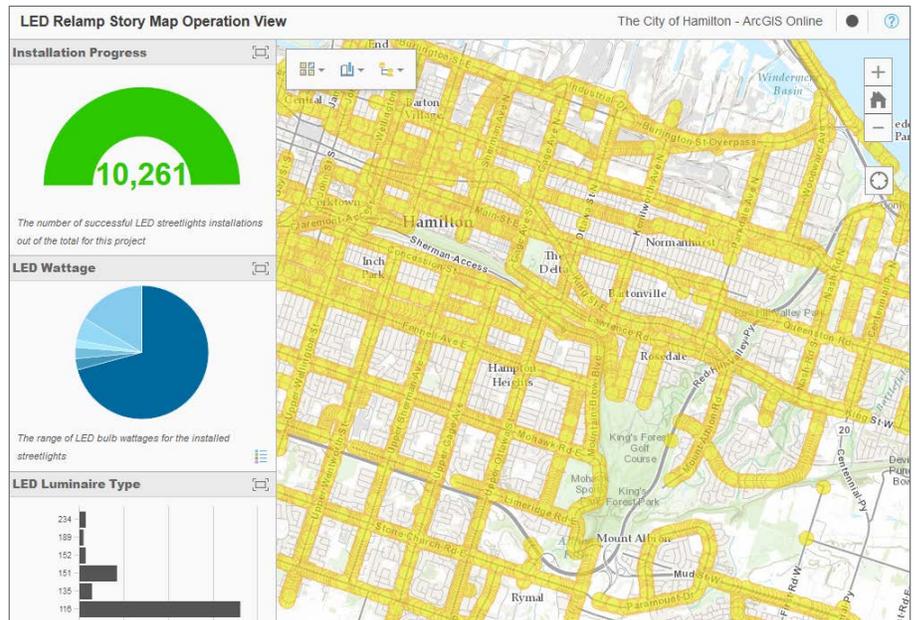
The **Hamilton Streetlighting Story Map** includes a dashboard powered by Operations Dashboard for ArcGIS that displays information related to installed and inspected streetlights.

using the **story map journal** template available through ArcGIS Online. This easy-to-use, interactive app mashes up of a wide range of content—including infographics, videos, pictures and maps—to showcase the economic opportunities that Hamilton offers to businesses and international investors.

The Invest in Hamilton app was created primarily for the 2015 MIPIM Conference last March in Cannes—a four-day event that attracts over 20,000 people—to promote the city's status as one of Canada's top places for investment. The app's user-friendly and visually compelling format helped Hamilton stand out from the crowd during the conference. People visiting Hamilton's booth had a chance to explore the story map on their own—switching between different areas to quickly digest information in a variety of ways. They could explore maps, watch YouTube videos, absorb statistics in graphs and learn about featured partners—such as John C. Munro Hamilton International Airport and McMaster University—in infographics.