

# Edmonton Saves C\$781 Million in Six Years with support of Intergraph® Technology

## City Enables Spatial Analysis for Traffic Safety Improvements with Intergraph GeoMedia® Software



### PROFILE

**COMPANY:** City of Edmonton, Alberta, CA

**WEBSITE:** <http://www.edmonton.ca>

**DESCRIPTION:** Edmonton is the capital of Alberta and has a growing population of more than one million people. Located on the banks of the majestic North Saskatchewan River, Edmonton is known as Canada's cultural capital, offering arts and cultural activities throughout the year. Edmonton serves as a staging point for large-scale oil sands projects occurring in northern Alberta and large-scale diamond mining operations in the Northwest Territories.

At 684 square kilometers, the City of Edmonton covers an area larger than Chicago, Philadelphia, Toronto, or Montreal. Edmonton has one of the lowest population densities in North America.

**INDUSTRY:** Transportation

**COUNTRY:** Canada

### PRODUCT USED

- GeoMedia product suite

### KEY BENEFITS

- Ability to process, analyze, and report on traffic safety data
- Reduction of collisions due to smarter mapping and analytical techniques
- Better informed city employees on roadway hazards and traffic congestion
- Significant cost savings for the city and its citizens based on reduced annual collisions

## IDENTIFYING GOALS

The City of Edmonton in Alberta, Canada, was one of the first cities to have all its data in digital format, making that transformation in the 1970s. Since then, Edmonton has seen great success with geospatially enabling its departments to perform tasks faster and smarter using map-based data. Edmonton wanted to match this success in its Office of Traffic Safety.

Edmonton's Office of Traffic Safety (OTS) was established in 2006 as the first municipal office of traffic safety in North America. This department supports national and provincial traffic safety targets to help reduce traffic collisions and create safer streets for drivers and pedestrians. On average, Edmonton experiences approximately 25,000 traffic collisions each year, costing the city and its citizens more than half a billion dollars in collision repairs. This made finding a solution to make its roadways safer and help curb some of those costs a top priority.

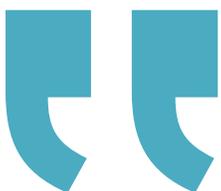
## OVERCOMING CHALLENGES

- Reduce traffic collisions on municipal roadways
- Recognize the daily patterns of high-risk locations and drivers with enhanced mapping utilizing collision data and automated photo enforcement data
- Improve education, engineering, and enforcement initiatives through advanced collision data analysis
- Enhance intelligence for Edmonton Police Service's deployment of resources

## REALIZING RESULTS

Edmonton has a long-standing relationship with Intergraph®. Previously, the city teamed with Intergraph to develop a Spatial Land Inventory Management (SLIM) application for GIS data. The SLIM system, built on Intergraph GeoMedia® products, enables its municipal departments to share geospatial data easier and faster, and better communicate with the general public.

With the SLIM system already in place, OTS can process, analyze, and report on traffic safety data (e.g., collisions, traffic volume, vehicle surveys, automated enforcement cameras, road geometry and classification, and licensed liquor premises). These new capabilities include geocoding, spatial pattern identification, spatial correlations, and target locations best suited for safety improvements.



OTS also utilizes an evidence-based speed management continuum to educate, enforce, and engineer speed related initiatives.

To enhance its geocoding capabilities, OTS created a reference system to consistently code collisions to the same location and use street names to create unique reference points. Before implementation, police collision reports had inconsistent location descriptions (e.g., referencing a street with two different names). This made it difficult for traffic safety analysts to determine where best to concentrate its efforts for roadway improvements.

With a new solid geocoding structure, OTS can now effortlessly create maps based on collision frequency, which are regularly requested from the Edmonton Police Service. These maps give police a quick and easy-to-understand overview of where the worst traffic areas are, helping it determine which locations to best focus its traffic squads. “These maps, which serve as a quick reference to the most serious collisions of the year, would normally take us hours to create,” stated Brandt Denham, GIS Analyst, Office of Traffic Safety at the City of Edmonton. “With the locational referencing system offered by GeoMedia, we can now create a visual map in minutes that the Edmonton Police Service can easily understand and act upon.”

A majority of OTS’ mapping and analysis needs are based on collision frequency, but typical frequency readings do not take other variables into account, such as traffic volume and road length. Edmonton wanted to use a sophisticated statistical approach (the Empirical Bayes method), that can factor in these variables to better prioritize areas on the roadways that need more attention. Using GeoMedia, OTS is now able to perform this type of analysis by spatially integrating traffic volume, road characteristics, speed data, and collision locations.

OTS also utilizes an evidence-based speed management continuum to educate, enforce, and engineer speed related initiatives. Speed surveys and advanced statistical methodology help prioritize deployment of its mobile and fixed automated photo enforcement assets. With the SLIM system, OTS creates maps that depict speed related activities like surveys, enforcement sites, speed limits on roadways, the location of schools and playgrounds, and other relative spatial data. Strategic, tactical, and operational mapping can be used to show trends in high-risk drivers, top locations for speed violator non-compliance, over representation of collisions, and hotspots for selected priorities, such as impaired drivers. These maps provide valuable intelligence and data for OTS to make smarter decisions concerning its roadways.

“GeoMedia is a critical analytical tool that helps us allocate our limited resources to where they will make the biggest impact on collision reductions,” continues Denham. “Edmonton’s collision reduction of 38.9 percent saved the city nearly \$781 million dollars in six years.”

## MOVING FORWARD

In the future, Edmonton’s OTS plans to incorporate weather factors into its predictive analysis methods to further strengthen the capabilities of its SLIM system and enhance traffic safety on its municipal roadways.



Hexagon Geospatial helps you make sense of the dynamically changing world. Known globally as a maker of leading-edge technology, we enable our customers to easily transform their data into actionable information, shortening the lifecycle from the moment of change to action. Hexagon Geospatial provides the software products and platforms to a large variety of customers through direct sales, channel partners, and Hexagon businesses, including the underlying geospatial technology to drive Intergraph® Security, Government & Infrastructure (SG&I) industry solutions. Hexagon Geospatial is a division of Intergraph® Corporation. For

more information, visit [www.hexagongeospatial.com](http://www.hexagongeospatial.com).  
Contact us at [marketing@hexagongeospatial.com](mailto:marketing@hexagongeospatial.com).

Intergraph® Corporation is part of Hexagon (Nordic exchange: HEXA B). Hexagon is a leading global provider of design, measurement and visualisation technologies that enable customers to design, measure and position objects, and process and present data.

Learn more at [www.hexagon.com](http://www.hexagon.com).

© 2014 Intergraph® Corporation. All rights reserved. Hexagon Geospatial is a part of Intergraph Corporation. Intergraph is part of **Hexagon**. Intergraph and the Intergraph logo are registered trademarks of Intergraph Corporation or its subsidiaries. Hexagon and the Hexagon logo are registered trademarks of Hexagon AB or its subsidiaries. All other trademarks or used herein are property of their respective owners. Intergraph believes the information in this publication is accurate as of its publication date. Such information is subject to change without notice.  
TRN-US-0031B-ENG 09/14