

Accurate Parking Data Provides Detailed Picture of Parking Utilization and Enables City Planning

How eXactpark Solved Spruce Grove's Parking Data Problem



Customer Challenge

As part of a broader City Centre Redevelopment plan, the City of Spruce Grove implemented a Parking Management plan that would lead to an improved experience for those who walk, bike, drive, or use transit in the downtown area. After completing previous parking studies that showed limited data (i.e. information about parking at a very specific point in time), the City was looking for a parking solution that would provide a more detailed picture of parking utilization. Since parking availability had previously been a frequent point of discussion between City stakeholders, reliable, accurate data was needed to plan a better future for Spruce Grove's businesses, residents, and visitors.

Solution – eXactpark™ by eleven-x

- Subsurface sensors are fully embedded in asphalt and have no profile above ground
- 99.5% vehicle detection accuracy in all weather conditions
- Ultra-long sensor battery life that lasts up to 10 years via LoRaWAN® technology
- Real-time occupancy status and 24/7/365 data collection
- Wireless network connectivity
- Integration with city infrastructure enabling detailed data analytics

Benefits

- **Parking Profiles:** Longer-term trending creates a comprehensive usage profile to empower evidence-based decision-making.
- **Accurate Technology:** eleven-x's technology is accurate, secure, and reliable, which lays a solid foundation for City initiatives.
- **Real-Time Data:** The City is planning on making the real-time data available to the public to help with trip planning & decision making.



The City of Spruce Grove is located 11 kms west of Alberta's provincial capital, Edmonton. With a growing population of 38,000 residents, Spruce Grove is a family-oriented community with the largest resident demographic being adults 30 to 34, followed by the 35- to 39-year-old group, and finally children under 5. Spruce Grove offers a range of recreational and cultural programs and there are over 40 kms of integrated trail systems within the city.

Challenge Details

With its Parking Management plan, the City of Spruce Grove aimed to provide a better parking experience for drivers in the downtown area while making sure that the plan also factored in the needs of local business owners, builders, and developers. Since previous studies had failed to provide adequate parking utilization data, the City knew they needed to implement a parking solution that would provide accurate, 24/7 data. This would allow them to move forward with a thorough, data-supported Parking Management plan that would improve upon the current state of parking in the City.

No stranger to the realities of a modern Smart City, previous smart city initiatives in Spruce Grove included autonomous lawn mowers and snow clearing equipment, as well as environmental and storm water monitoring to improve quality of life for the residents of Spruce Grove. This meant that the City was interested in finding a smart parking solution that would be innovative, reliable, and useful for residents and local business owners alike.



Sensor installation in on-street parking spaces

Solution Details

When looking for a smart parking solution to integrate into its Parking Management plan, the priorities for the City of Spruce Grove were accurate, reliable real-time and historical data, as well as high product quality and ease of deployment. This led the City to eXactpark™, eleven-x's sensor-based smart parking solution. eXactpark operates on the patented SPS-X™ sensor, which is the only fully embedded subsurface parking sensor currently on the market. This means it is able to withstand even the most difficult weather conditions, providing the most reliable and accurate parking data around the clock.

eXactpark also features a comprehensive software suite that tracks and analyzes important data points including individual space use counts, turnover, dwell time, and parking duration. The analysis of this data helps build a clear picture of parking assets and is the first step toward putting together an optimized parking strategy.

The City of Spruce Grove was also drawn to eXactpark's scalability and consideration of driver privacy: the solution only tracks the presence of the vehicle, without collecting any additional information like a camera-based parking solution might. The City was looking for a smart parking solution that would go beyond just the installation of parking sensors – and they found that in eleven-x™.

Deployment

Spruce Grove's eXactpark deployment started with a pilot project which included the easy installation of 20 subsurface sensors and 2 gateways. The City of Spruce Grove posted updates about the pilot project on its website, detailing the scope of the pilot, installation timelines, and impacts to parking that day. In the spirit of transparency, the Downtown Business Association was also notified of the main goals of the project. From the beginning of the pilot, the City was able to access parking data from eXactpark's software dashboard and monitor average parking duration, maximum parking duration, month over month parking usage, and turnover rates, among other data points.



Gateway installed on a lamp post in Spruce Grove

The sensors were shown to perform flawlessly through an exceptionally harsh winter and the eXactpark installation was expanded to include a further 125 parking stalls, as well as one more gateway, bringing the total of sensors installed to 145. As previously, Spruce Grove residents and business owners were notified of any updates or changes to parking, as well as the results of the initial pilot, the installation schedule, and sensor technology. Throughout the winter, snow and ice were able to be cleared without having any impact on the sensors' effectiveness.



SPS-X surface mount and subsurface sensors

Results

With 6 zones of parking currently being monitored by eXactpark, the City of Spruce Grove has a tremendous amount of useful data for City stakeholders to understand how downtown and EV parking are being used. In particular, this data was used to show local businesses exact figures regarding the number vehicles parked in a specific area at a specific time. Data taken from eXactpark was used by the City's Planning & Development team to table a bylaw change with City Council, asking that parking requirements be adjusted to 1 spot per 55 square meters (when previous requirements were 1 spot per 85 meters). This would allow for larger buildings to be built and, therefore, additional tax revenue to be generated for the City, as well as enabling businesses to hire more employees without jeopardizing parking. eXactpark's parking utilization data was integral to the presentation and eventual decision-making around this bylaw change.

As for next steps, the City has deployed SPS-X sensors at EV charging stations as a way to correlate charging usage with parking duration. The City is also looking to install electronic wayfinding signage to use in tandem with sensors to more easily direct drivers toward available parking. The City of Spruce Grove's eXactpark deployment will also be expanded to include a newly designed street, as part of the overarching City Centre Redevelopment Plan.

After unsuccessful attempts with other technology, the City of Spruce Grove truly found a fit with eXactpark!



Fully installed subsurface sensor