TO CONTINUE TO PROVIDE VALUE TO CITIZENS, THE CITY MUST BE A NIMBLE ORGANIZATION—CONTINUOUSLY EVALUATING AND EMBRACING THE ENDLESS POSSIBILITIES THAT ACCOMPANY CHANGE.
Digital capabilities continue to transform the way individuals and businesses work.

Concurrently, a data revolution is taking place that requires transformative action to support different forms of collaboration. As our city changes and grows, we are tasked with embracing change through creative and innovative ways of delivering services.

In response, the City of Edmonton has taken steps to shift toward a City-wide approach to managing information, data and technology. We know that in order to deliver maximum value, we need to think, govern and act from a city-wide perspective. We operate in a complex ecosystem with other orders of government, non-profit organizations, businesses, academia and citizens. To best achieve our goals, deliver programs and services and provide an exceptional quality of life for citizens, we must adapt to meet the demands and expectations from citizens, stakeholders, partners and employees alike.

Business technology is at the core of this digital transformation. As a digital city, we are embracing new ways of delivering programs and services to address the challenges of the day. Specifically, for Council, this Business Technology Strategy will help us use data and analytics to make better evidence-based decisions to guide how we build a city that is more resilient, livable and workable. A city that Edmontonians are proud to call home.
From sensors that monitor air quality to analytics that guide program improvements, the City of Edmonton is ready to embrace our future: providing services, new and existing, in innovative ways.

Edmonton has decided that it doesn’t want to be Canada’s best kept secret. Recognizing that we are just one element in a larger system of city building, the City of Edmonton has facilitated transformational changes which will direct the growth of our community for years to come.

We want to make Edmonton a place where residents can see a great future for themselves and a home where they want to raise their families. We’re all part of something much bigger than ourselves. It’s exciting. It’s complex. And, it is going to take a great deal of forethought and planning to ensure we continue to build a great community.

In today’s modern municipal corporation, technology and information play an integral role in providing Edmontonians an excellent experience.

In addition to the option of interacting with City services using the digital technologies of the day, Edmontonians expect to be engaged in the planning of their municipality, empowered with relevant and timely information. Achieving these goals and meeting Edmontonians’ expectations are some of our top priorities in the coming years.

Because, at the end of the day, that is what the City of Edmonton is all about, serving Edmontonians. The Business Technology Strategy does just that by advancing Council’s Strategic Plan, and by developing partnerships throughout the community to ensure we are using technology and information to enable an exceptional quality of life.
Executive Summary

Expectations for cities around the world have changed, including Edmonton.

Modern municipalities these days operate in a period marked by a rapidly changing business environment, a call for more open and interactive government and ever increasing citizen demands. The City of Edmonton (the City) is no longer just a service and utility provider; rather, it has become a key player in improving the social welfare of all Edmontonians.

To meet these changing needs, the City needs to continue to build collaborative partnerships. The challenges it faces do not stand in isolation of one another, but are elements of a larger system of city building. In addition to strengthening internal collaboration, the City must foster strong, mutually-beneficial external partnerships.

The City has significant and valuable amounts of data, business solutions and diverse technologies. To better leverage these assets, it needs to increase internal and external data sharing, optimize processes, and deliver quality service while managing costs effectively—all in partnership with its stakeholders.

This Business Technology Strategy provides a strategic plan to connect all of these pieces. With a clear path to meet goals and the corresponding governance structure to ensure progress, this Strategy will help transform Edmonton and the region it occupies into a place that meets the expectations of the modern world.
# OUR BUSINESS TECHNOLOGY STRATEGY AT A GLANCE

**Council's Strategic Plan**

**Drivers of Change**
- Economic Development and Growth
- Strengthened Public Service
- Focused Investments
- Informed Leadership

**Principles**
- Enhance Citizen Experience
  - The City exists to serve the people who live and own businesses here. Actively listening to them and consistently examining our decisions and options from their perspectives will give us confidence that we are focused on the right things for Edmonton.
- Provide Reliable Information
  - Information is a public asset. The City stewards this asset for the public good; sharing it transparently, using it for the benefit of all Edmontonians, and managing and protecting it responsibly. The integrity of our information is paramount.

**Strategic Pillars**
- Citizen Focused
  - Focus business technology decisions on improving citizen experiences across the City
  - Adopt business technology that allows citizens to interact with the City how and where they want
  - Use business technology to better understand and enhance the programs and services citizens need
  - Use information and citizen feedback to create a two-way dialogue on shaping Edmonton

**Usable Information**
- Collect and share evidence that tells Edmonton’s story and inspires citizens to get involved
- Share information that will help citizens and businesses make informed choices and decisions, and support a more vibrant Edmonton
- Use information to describe our progress to commitments and anticipate future needs
- Drive decision-making through relevant information that is easy to access, review and understand
- Educate and train staff on how to steward high-quality information and best use it to drive decision-making
The Way Ahead

**CITIZEN EXPERIENCE EXPECTATIONS**

**STRENGTHENED PUBLIC SERVICE**

**INFORMED LEADERSHIP**

**TRANSPARENT PROCESSES**

**ENVIRONMENTAL STEWARDSHIP**

**ORGANIZATIONAL EFFICIENCY**

**PROMOTE COLLABORATION**

The City develops partnerships to capitalize on the information and technological capabilities of Edmontonians, academic institutions, non-profit organizations, businesses and the community.

**TRANSFORM THROUGH INNOVATION**

The City creates and fosters new approaches to business technology that support effective processes and improve what people experience when they interact with us. We embrace disruptive technology as an opportunity to forward our thinking and enable the positive transformation of Edmonton.

**THINK CITY-WIDE**

Business technology provides the most value when delivered for the benefit of the entire City of Edmonton ecosystem. The City's business technology resources and assets belong to one City and will be used as such.

**PARTNERSHIPS**

Recognize and develop the partnerships needed to advance the City’s Business Technology Strategy.

Use information to proactively identify where external partnerships will best support citizens.

Build and advance Edmonton’s reputation as a Smart City.

**INNOVATION**

Use information and technology to improve the quality and reach of City programs and services.

Welcome and embrace disruptive technology to help Edmonton to achieve its vision.

Adopt solutions that better integrate city business areas and improve people’s experiences when they interact with the City.

**INTEGRATED**

Adopt a single, transparent City-wide approach to business technology investments and decision-making.

Focus on business technology that supports and provides broad city value.

Clearly define governance accountabilities for business technology City-wide.

Use business technology to support talent management efforts and enable City staff to be their best.
Progressive organizations around the world continually reimagine themselves through innovative digital tools, systems and processes. This allows these organizations to be more efficient and effective—serving and communicating with their stakeholders in new ways. Similarly, cities are facing increasing demands from citizens for more data and information delivered in new, innovative ways.

Business technology recognizes not only the innovation found in information but also the innovation that exists within larger ecosystems. The City of Edmonton recognizes the need to embrace new technology and use its information to make evidence-based decisions.
ADVANCING THE WAY AHEAD

The Business Technology Strategy moves the City of Edmonton forward to better embrace innovative technologies and use data. This work is founded on City Council’s vision as documented in The Way Ahead.

Forming the foundation of the City’s work, The Way Ahead guides the City’s continued commitment to enhance the quality of life for Edmontonians. It was updated in 2011 and 2014 and will be further updated in 2018 following extensive engagement with our stakeholders.

By addressing our current challenges and identifying a clear plan to achieve the vision defined by The Way Ahead, the City can meet these high expectations, as well as effectively and efficiently deliver high-quality programs and services. Through the Business Technology Strategy, the City has the opportunity to define the role business technology has in shaping our economy and the quality of life in Edmonton.
The City of Edmonton delivers over 80 distinct programs and services, including roads and public transit that move people; bylaws and fire rescue services to promote safety; parks, waste management and environmental services to keep our community clean and healthy; and social programs with leisure activities that improve quality of life and health. Technology and information enable all of these programs and services as well as the employees who provide them.

To continue to provide value to our citizens, the City must be a nimble organization, continuously evaluating the evolving landscape and embracing the endless possibilities that accompany change.
In understanding and recognizing these eight drivers of change, the City will be flexible and adaptable in the implementation of the Business Technology Strategy and in meeting the evolving expectations of the citizens it serves.
The Business Technology Strategy's principles define what is essential for the City's success. The principles describe the beliefs and philosophy that guide what we do and why we do it. Our pillars set a clear path for the principles and focus on bringing together businesses and citizens to transform Edmonton into a community that is truly responsive to the wants and needs of those who work and live here.
## PRINCIPLES

<table>
<thead>
<tr>
<th>Principle</th>
<th>Strategic Pillar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhance Citizen Experience</td>
<td>Citizen Focused</td>
</tr>
<tr>
<td>Provide Reliable Information</td>
<td>Usable Information</td>
</tr>
<tr>
<td>Promote Collaboration</td>
<td>Partnerships</td>
</tr>
<tr>
<td>Transform Through Innovation</td>
<td>Innovation</td>
</tr>
<tr>
<td>Think City-Wide</td>
<td>Integrated</td>
</tr>
</tbody>
</table>

### Enhanced Citizen Experience
The City exists to serve the people who live and own businesses here. Actively listening to them and consistently examining our decisions and options from their perspectives will give us confidence that we are focused on the right things for Edmonton.

### Provide Reliable Information
Information is a public asset. The City stewards this asset for the public good; sharing it transparently, using it for the benefit of all Edmontonians, and managing and protecting it responsibly. The integrity of our information is paramount.

### Promote Collaboration
The City develops partnerships to capitalize on the information and technological capabilities of Edmontonians, academic institutions, non-profit organizations, businesses and the community.

### Transform Through Innovation
The City creates and fosters new approaches to business technology that support effective processes and improve what people experience when they interact with us. We embrace disruptive technology as an opportunity to forward our thinking and enable the positive transformation of Edmonton.

### Think City-Wide
Business technology provides the most value when delivered for the benefit of the entire City of Edmonton ecosystem. The City’s business technology resources and assets belong to one City and will be used as such.

---

**STRATEGIC PILLARS**

- **Citizen Focused**
- **Usable Information**
- **Partnerships**
- **Innovation**
- **Integrated**

**SMART**

Building a city that is more resilient, livable, workable and altogether more uplifting.
The City will drive Edmonton toward a more engaged and collaborative community, where business technology is a tool to understand the needs and expectations of Edmontonians.

Understanding what Edmontonians value is essential for Council to make critical decisions on behalf of a diverse community. To create rich opportunities for input and participation, the City must leverage data, information and technology to identify meaningful channels for all audiences, at times and places convenient to them. New opportunities for technology-based analysis will allow the City to unlock the insights from feedback and ideas—all to help sharpen thinking and deliver programs and services which are truly responsive to the public need.
Increased digital interaction with the City’s programs and services

Enhanced program and service experiences through digital and online mediums

Consistent, integrated delivery of citizen and business programs and services
SMART CITIES CHALLENGE
CITIZEN INPUT
Infrastructure Canada’s Smart Cities Challenge encourages communities to adopt a smart cities approach to improve the lives of their residents through innovation, data and connected technology.

People from all orders of governments, post-secondary institutions, startup communities and the tech industry have come together along with individual Edmontonians to narrow the field of ideas to work toward Edmonton’s pitch. All of these valued stakeholders were invited to submit their ideas for Edmonton’s Challenge Theme (and later the specific $50 million proposal) through an online portal at www.smartcities.edmonton.ca.

REGIONAL SMART FARE
Smart Fare will allow riders in the Edmonton region to pay for transit using a variety of methods, as early as 2020. Customers will be able to use their credit cards, debit cards, other compatible smart cards and smart devices. The “tap and go” fare payment system will make paying for transit (within and across the Metropolitan Edmonton Region) as simple as buying a cup of coffee.
CITIZEN OPEN DATA PRIORITIZATION

As citizens explore and use open data, their feedback plays a pivotal role in increasing the quantity and quality of data provided. Citizens’ requests spur the City in its efforts to ensure that the data is understandable, easily located, appropriately contextualized, and usable by both people and machines.

To ensure that the processes of requesting, organizing and delivering data are efficient and responsible, citizens are able to track and up and down vote dataset requests. This allows City staff to prioritize internal work based on citizen choice.
The City will continue to enable more strategic, community-based decision-making by providing data and information to all stakeholders and ensuring these stakeholders have the tools and knowledge to perform meaningful analysis.

Data and information will be treated as assets that can be collected, accessed, analyzed and shared globally. City employees will be trained and educated on the full potential of our information, how to steward and maintain high-quality information for wider sharing and how to use analytics to guide Edmonton’s way forward. With trustworthy information and a driving vision of “open by default”, the City will be able to consistently describe the story of Edmonton and its progress toward Council’s vision.
Business Technology Strategy  

City of Edmonton

Transparent access to consistent, reliable and accurate near-real-time data and information for citizens, businesses and staff

Use of data and information to make decisions and measure results

Increased trust in available data and information

Success will be measured by:

Collect and share evidence that tells Edmonton’s story and inspires citizens to get involved

Share information that will help citizens and businesses make informed choices and decisions, and support a more vibrant Edmonton

Use information to describe our progress toward commitments and anticipate future needs

Drive decision-making through relevant information that is easy to access, review and understand

Educate and train staff on to how to steward high-quality information and best use it to drive decision-making

To do this work, we will:

Success will be measured by:

Transparent access to consistent, reliable and accurate near-real-time data and information for citizens, businesses and staff

Use of data and information to make decisions and measure results

Increased trust in available data and information
MANAGEMENT OPERATIONAL DASHBOARD

The Management Operational Dashboard (MOD) provides City leadership with a single place to go to get information. This includes visualized financial results, safety statistics, operational statistics and much more. As of April 2018, over 65 Google Sheets, data visualizations, dashboards and reports can be accessed through MOD.

DATA GOVERNANCE

In 2017, What Works Cities (a Bloomberg Philanthropies initiative delivered by Johns Hopkins University) reviewed the City of Edmonton’s data governance practices. From this engagement, the Data Governance Committee was created to support the City by treating data as a strategic asset, protecting it and reducing the associated Corporate risk. The work of the Committee is supported by specialized training on data storytelling and visualization.
**NATURAL LANGUAGE PROCESSING**

The City collects a vast amount of free-form text through a number of channels including 311, social media and surveys. Millions of Tweets, blog comments, and Insight Survey comments, are collected into datasets. This data is analyzed, assigned a sentiment (positive, negative or neutral) and then associated with keywords and concepts to determine the general feeling of groups or individuals toward a particular subject.

---

**ONE CITY DATA HUB**

The OneCity Data Hub (OCDH) is a one-stop shop for City employees to access city-wide data for business analytics and evidence-based decision-making. It delivers role-based and secure data gathered from the wide range of assets across the City.

Data available in the OCDH can be browsed through the Business Analytics Catalogue application through which users can easily discover, request access and suggest new datasets and data visualizations.
The City will drive growth and increase the reach of programs and services by encouraging strong, open and collaborative partnerships enabled by technology, data and information.

Insights from business technology will proactively identify previously unconsidered partnership opportunities. Open, high-quality information will build trust in the City’s partnerships and align coordinated efforts. The City will continue to build and advance Edmonton’s global reputation and vision through open collaboration with all orders of government, non-profit organizations, businesses, academia and citizens.
To do this work, we will:

- Recognize and develop the partnerships needed to advance the City’s Business Technology Strategy
- Use information to proactively identify where external partnerships will best support citizens
- Build and advance Edmonton’s reputation as a Smart City

Success will be measured by:

- Increased strategic partnerships
- Increased stakeholder participation in realizing the information and technology vision of the City
- Increased economic diversity through a stronger technology sector
AIR QUALITY SMART LIGHT INTEGRATION
The City of Edmonton is partnering with BetaCity YEG (a local civic technology group) to monitor air quality through smart light bulbs. This initiative raises awareness of Edmonton’s air quality and Edmonton will be the first city in Canada to use the IFTTT (“if this, then that”) platform. The platform allows anyone to connect a Wi-Fi-enabled light bulb to provincial air quality data, which updates every half hour. A large light installation (inspired by a similar initiative in Paris) is planned for City Hall for Clean Air Day in June 2018.

VIRTUAL REALITY FOR PUBLIC ENGAGEMENT
The City is partnering with citizen technology developers to explore using virtual or augmented reality in gathering citizen input. The first citizen engagement pilot will focus on Smart City. Citizens will be able to view and engage with new smart city technologies embedded in the city environment such as autonomous vehicles, sensors and kiosks in order to increase their digital literacy.

TECHNOVATION
Technovation is a global 10-week STEM (Science, Technology, Engineering and Math) app competition, which brings together girls from six schools across the Greater Edmonton area. Participants are supported by female technology and business mentors working in organizations such as Bioware, the City of Edmonton and University of Alberta. Technovation is delivered in partnership with the Northern Alberta Institute of Technology (NAIT) and Lift Interactive.

GAMIFY YOUR CIVIC PARTICIPATION
The City is partnering with Volunteer Alberta to promote participation and volunteerism in diverse community and cultural events by encouraging friendly competition among people and organizations in the Edmonton region. By working with the civic technology community, an app will be created that makes checking into events automatic and displays a public leaderboard of the area’s most active community event attendees and volunteers.
The City will identify and explore emerging and existing technologies that could profoundly improve the way it furthers Council’s strategic vision.

Increased access to faster internet, interconnected services and new, advanced technologies will result in cost efficiencies, resilient infrastructure and an improved urban experience for Edmontonians. The City will work diligently to make best use of our existing assets and improve our processes prior to investing in more innovative technologies. To compliment this work, the City will continue to welcome and embrace disruptive technology to help Edmonton achieve its vision and provide improved opportunities for citizen engagement.
To do this work, we will:

- Use information and technology to improve the quality and reach of City programs and services
- Welcome and embrace disruptive technology to help Edmonton to achieve its vision
- Adopt solutions that better integrate the organization and improve people’s experiences when they interact with the City

Success will be measured by:

- Improved access to digital programs and services for citizens and businesses
- Increased coordination and integration of programs and services
- Reduced environmental footprint of the City’s operations
- More efficient and effective service provision
AUTONOMOUS VEHICLES STRATEGY

New and emerging technology for vehicles will impact the way people and goods travel in Edmonton. Aligned to the Smart City Strategy, the City is developing a Smart Transportation Action Plan that focuses on automated, connected, shared and electric mobility technologies.

The Action Plan will guide the City’s short term actions on how to prepare for these emerging technologies and will also take an integrated approach, ensuring that all of the City’s departments are responding in a coordinated way.

ROBOTIC PROCESS AUTOMATION

Robotic Process Automation (RPA) replicates the actions of a human interacting with the user interface of a computer system—similar to a “software robot”. The City is developing a plan to identify and pilot use cases for this technology. This will allow staff to be re-focused from repetitive tasks to activities providing increased value to citizens.
ROUTING OPTIMIZATION

Everyday, many City services are completed using dispatched teams and equipment. Currently, routes are determined by the individual operator at the beginning of the work day using their expertise regarding the task at hand.

To leverage data and analytics, the City has begun applying routing optimization to services such as grass cutting and parking machine coin collection. Web portals use state-of-the-art algorithms that leverage data such as traffic information and equipment inventories to find optimal routes. The optimized routes are then automatically uploaded to mobile devices, allowing the City’s team members to maximize their efforts and contribute to a greener environment through a reduction in fuel consumption.

CROWDMAPPING

The City of Edmonton, in partnership with the University of Alberta, is collecting accessibility information for public and private buildings. By gathering and publishing this information, citizens of all ability levels will be able to better plan and navigate Edmonton’s physical environment.

As crowdmapping proceeds, the City will be able to identify opportunities for improvements to ensure all Edmontonians have equal access to enjoy their community and all that it entails.
The City will implement an integrated and transparent approach to business technology decisions, anticipating the needs of the organization for decades to come.

Business technology enables every one of the City’s diverse programs and services—from recruiting and developing high-performance teams to collecting environmental readings as the City addresses climate change. The City’s investments will prioritize assets and solutions and provide City-wide value, supported by policies and procedures, making the best use of the available people, resources and time.
To do this work, we will:

- Adopt a single, transparent City-wide approach to business technology investments and decision-making
- Focus on business technology that supports and provides broad organizational value
- Clearly define governance accountabilities for business technology City-wide
- Use business technology to support talent management efforts and enable City staff to be their best

Success will be measured by:

- Reduced duplication of business technology assets and solutions
- Greater returns on business technology investments
- More efficient use of resources through simplified and streamlined business technology
APPLICATION PORTAL
The Application Portal allows City of Edmonton employees to connect to applications and intranet with a consistent look and feel from any device, anywhere, anytime. The Portal enables the use of Alternate Work Strategies—a program that minimizes the City's impact on the environment and contributes to the revitalization and growth of downtown Edmonton.

COMPUTER-AIDED DISPATCH
In a collaborative effort, Fire Rescue Services, Edmonton Transit Service and Corporate Security all dispatch emergency services using the same computer-aided dispatch (CAD) system. Over the past 20 years, CAD has evolved into an intuitive emergency response tool integrated with Alberta Health Services’ real-time Emergency Management Systems. This integration provides citizens a more complete emergency response service.

EDMONTON.CA/JOBS
RECRUITMENT PODCASTS
The addition of podcast functionality to the City of Edmonton’s online job portal gives prospective employees insight into the expectations of the position and the manager’s leadership style. Not only are podcasts inexpensive to produce, it is the first time, from a recruiting perspective, that the City is enabling transparency between candidates and hiring managers.

ESIGNATURES
As part of the technology procurement process, the City has piloted and is now implementing electronic signatures for all internal procurement documents. eSignatures removes the need for mail deliveries between the City’s far reaching buildings, recreation centres and offices. eSignatures reduces the City’s environmental footprint and allows for more timely authorizations.
THE CITY WILL ACHIEVE ITS GOALS, DELIVER PROGRAMS AND SERVICES, AND PROVIDE AN EXCEPTIONAL QUALITY OF LIFE FOR EDMONTONIANS BY EMBRACING BOTH THE PERSPECTIVES OF A DIVERSE COMMUNITY AND THE OPPORTUNITIES PRESENTED BY TECHNOLOGICAL ADVANCES.
The Business Technology Strategy describes a bold and ambitious vision for business technology for Edmonton. With dedication, hard work and leadership from across the City, the objectives of the Strategy are achievable.

To enable Edmonton to fully benefit from the opportunities, engagement, inclusion and innovation presented through business technology, the City will work to fully to implement the supporting strategies highlighted in the Business Technology Strategy.
Assessing the degree to which the Business Technology Strategy supports the progress and achievement of Council's Strategic Goals articulated in The Way Ahead will be accomplished by:

1. Establishing a governance structure which reviews and prioritizes technology investments against the five pillars of the Business Technology Strategy.

2. Linking each outcome identified in the Business Technology Strategy to performance measures that already exist within the City. If a relevant measure does not currently exist for a business technology outcome, careful consideration will be given to define and implement a new measure to assess performance.

3. Ensuring each performance measure will also be linked back to a set of City Outcomes that assess the City’s progress towards achieving Council's Strategic Goals.

4. Confirming a baseline for each measure that will be used to gauge future performance against a recorded current state.

5. Setting a target for each measure to define the level of performance aspired to by the City that will indicate achievement of our strategic business goals.

6. Identifying annual performance measure improvements to signal the intended incremental growth and provide focus for business technology resource and investment plans.

7. Reporting on and reviewing performance measures at regular intervals against targets to assess progress, confirm priorities or inform changes to ensure the City is best positioned to achieve our goals and advance Edmonton’s vision.