

# THE CITY OF THE FUTURE:

Edmonton's Journey as an Open City  
and emergence as a Smart City

*Norman Mendoza,  
Manager Business and Technology Innovation, Edmonton*



A photograph of the Edmonton skyline featuring the Walterdale Bridge in the foreground. The city's modern skyscrapers are visible against a cloudy sky. A large blue rectangular frame surrounds the central portion of the image. In the top right corner of the frame, the word "Edmonton" is written in white. A blue outline of a question mark is positioned on the left side of the frame.

Edmonton

# WHO AM I?

# OPEN DATA PROGRAM

The screenshot shows the homepage of the City of Edmonton's Open Data Portal. The header features the Edmonton logo and a search bar. The main title is "City of Edmonton's Open Data Portal". Below the title, there is a message: "Your data. Connect, download, analyze. Please click here to review our Terms of Use." The page is divided into several sections: "Open Data 101" (with a "Tip & Tricks for using this site"), "Catalogue" (with a "Access our open data catalogue"), "Stories" (with a "Stories about data? Access them here!"), "+1 / Suggest A Dataset" (with a "+1 / Suggest A New Dataset: Why Not Do Both?"), "Citizen Dashboard" (with a "Access our Citizen Dashboard"), "EPS Dashboard" (with a "Access Edmonton Police Service's Dashboard"), "Open Budget" (with a "Access our Open Budget web application"), "Open Data Toolkit" (with a "Access our Toolkit. Check out how we got to where we are today!"), "311 EDMONTON" (under Citizen Connect), "Open Up Your Data" (with a person pointing at a bar chart), "Edmonton's Open Data is odx Business ready." (with a person holding a tablet), and "OPEN DATA 150 CANADA" (with a "JOIN NETWORK WITH THE OPEN DATA 150 GLOBAL NETWORK"). The footer contains links for "Home", "Catalogue", "Applications", "Open Data Blog", "About", "Citizen Connect", "Terms of Use", "Site Maintenance Schedule", "Site Analytics", "Twitter", and "Sign In".

# Open City Policy & Open City Refresh Report

**CITY POLICY**

**REFERENCE:**  
The Way Ahead: City Strategic Plan, 2009-2018  
Strategic Roadmap: The Way Ahead, 2012  
Open City Initiative, 2014

**POLICY NUMBER:** C581

**ADOPTED BY:**  
City Council  
April 14, 2015

**SUPERSEDES:**  
Now

**PREPARED BY:** Corporate Services Department  
**DATE:** April 14, 2015

**TITLE:** Open City Policy

**Policy Statement:**  
As an Open City, the City of Edmonton will create opportunity for diverse input and participation, inviting Edmontonians to play a larger role in shaping the community and enabling social and economic growth.

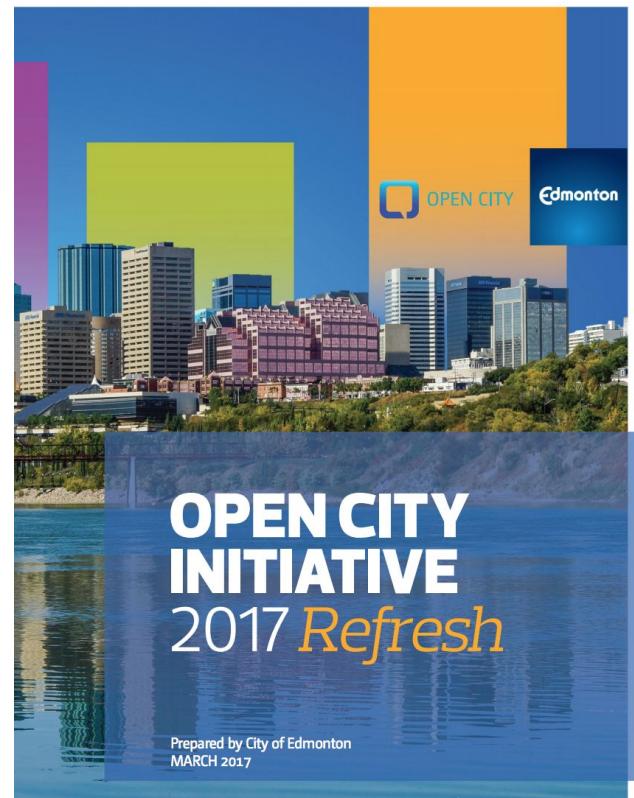
**Definitions:**  
In this policy, the following words have the following meanings:  
(a) "Open City" means the civic perspective on the broader Open Government philosophy.  
(b) "Open Government" means a philosophy of government which emphasizes the value of greater transparency and accountability, increased citizen engagement, and innovation and economic opportunities driven by these values and by the release of data and information.

**The purpose of this policy is to:**  
Articulate the City's commitment to bring to action the Open City principles of transparency, participation, collaboration, inclusiveness and innovation.

1. The City will:  

- Manage information and data assets as a strategic resource: The City will manage its information and data as a key decision-making tool, in a manner that adheres to sound data management practices, resulting in information and data being easily accessed and shared, where appropriate.
- Ensure information and data are open by default and private where appropriate: The City will share information and data in a variety of formats and media and in so doing, will adhere to relevant policy, legislation and leading practices related to the privacy and security of personal information.
- Expand opportunities to foster a collaborative environment and engage Edmontonians to ensure municipal activities reflect community values, priorities and standards: The City

OPEN CITY AND TECHNOLOGY  
FINANCIAL AND CORPORATE SERVICES  
CITY OF EDMONTON



# International Open Data Charter

Edmonton



## International Open Data Charter

- In March of 2017, **Edmonton was the first** organization in Canada and the United States **to adopt the International Open Data Charter**.
- In late 2017, the province of Ontario and the Government of Canada also declared their commitment.
- **We are committed to upholding international best practices standards.**

# Leader in Open Government

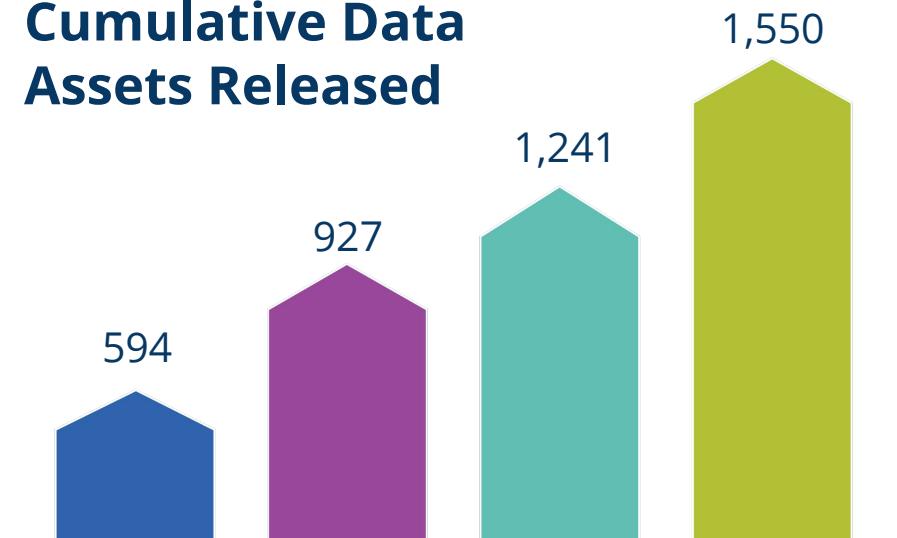
Edmonton



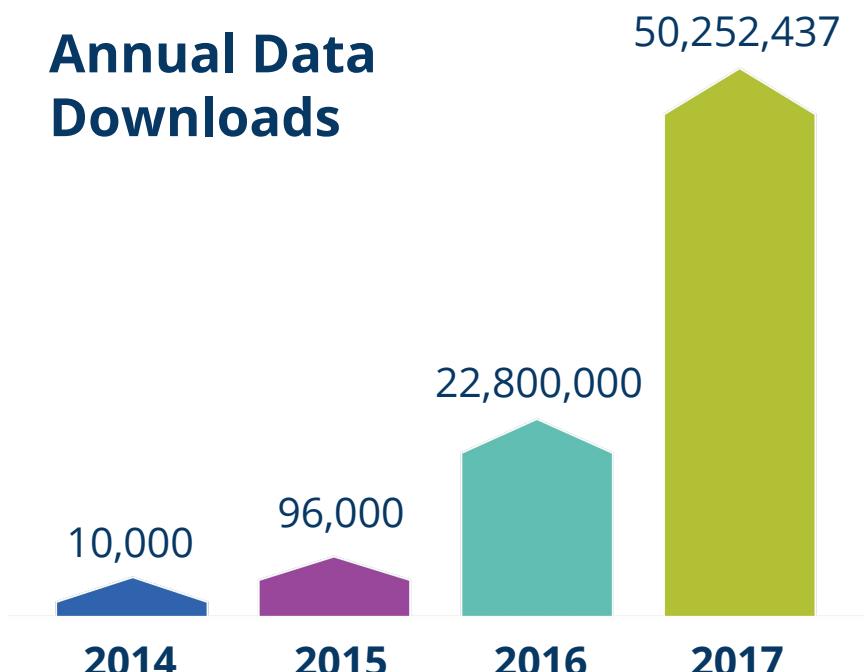
# Open Data by the Numbers



**Cumulative Data Assets Released**



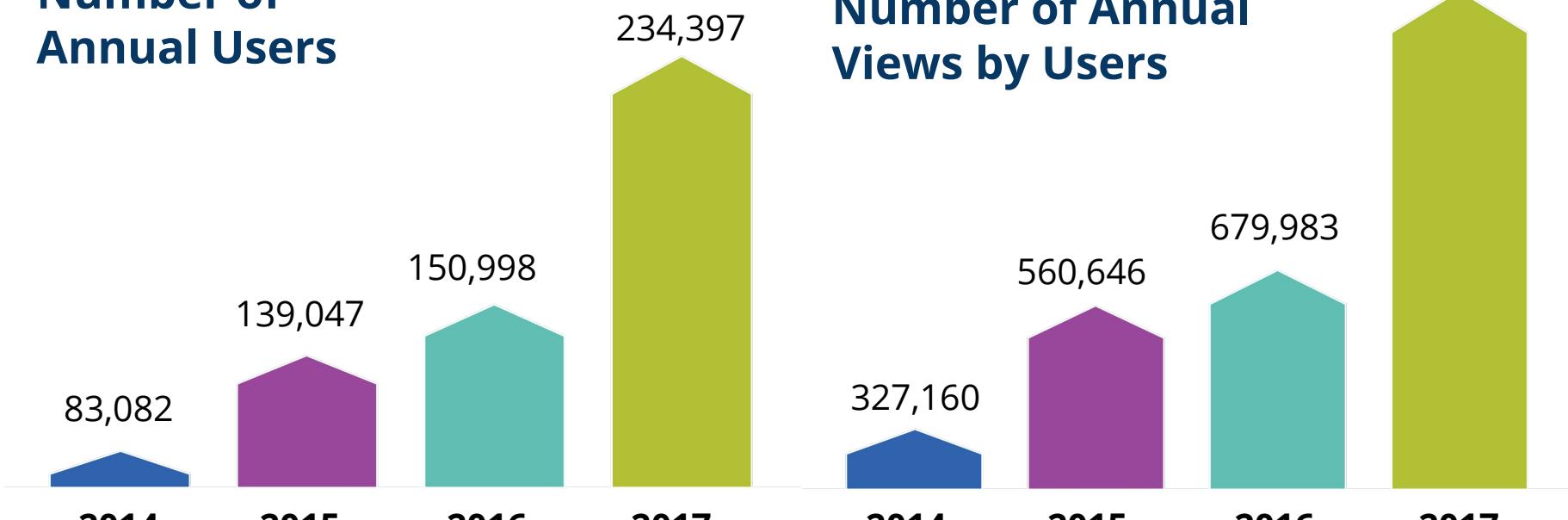
**Annual Data Downloads**



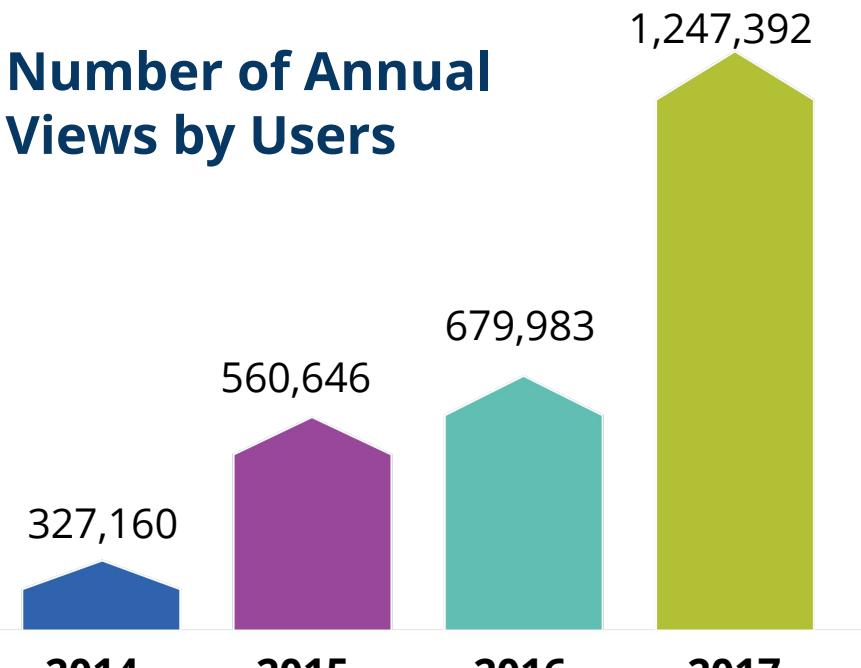
# Open Data by the Numbers



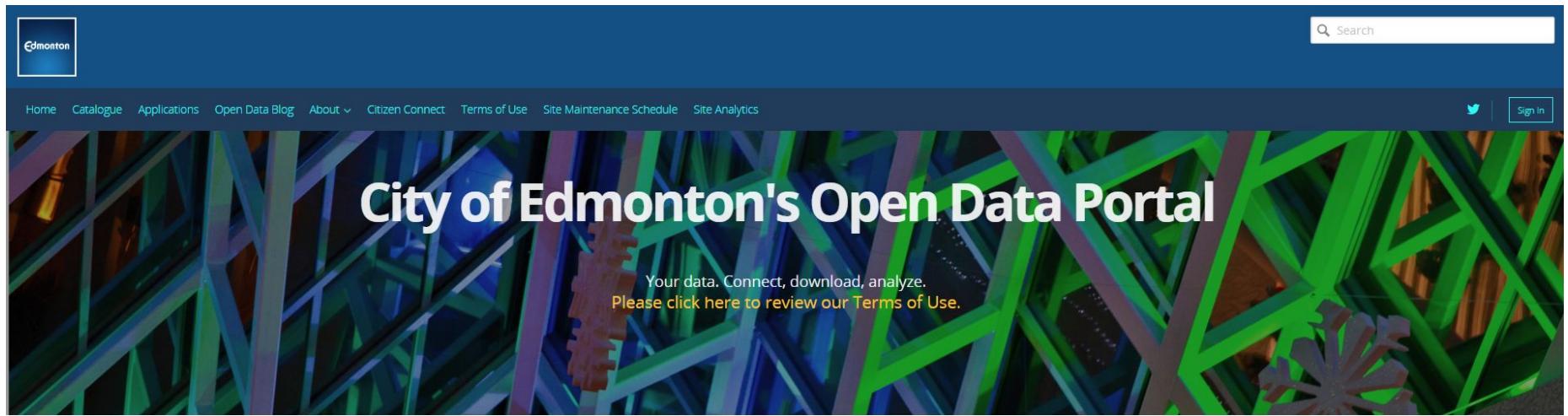
**Number of Annual Users**



**Number of Annual Views by Users**



# Open Data Portal [data.edmonton.ca](http://data.edmonton.ca)



The screenshot shows the City of Edmonton's Open Data Portal homepage. The header features the Edmonton logo, a search bar, and navigation links for Home, Catalogue, Applications, Open Data Blog, About, Citizen Connect, Terms of Use, Site Maintenance Schedule, Site Analytics, Twitter, and Sign In. The main banner has a colorful, abstract background of green and blue lines. The title "City of Edmonton's Open Data Portal" is prominently displayed in white. Below it, a subtitle reads "Your data. Connect, download, analyze." followed by "Please click here to review our Terms of Use." The page is organized into a grid of eight cards:

|   |  |  |   |
|---|--|--|---|
|  <b>Open Data 101</b><br>Tips & Tricks for using this site |  <b>Catalogue</b><br>Access our open data catalogue                 |  <b>Stories</b><br>Stories about data? Access them here!      |  <b>+1 / Suggest A Dataset</b><br>+1 / Suggest A New Dataset : Why Not Do Both?               |
|  <b>Citizen Dashboard</b><br>Access our Citizen Dashboard  |  <b>EPS Dashboard</b><br>Access Edmonton Police Service's Dashboard |  <b>Open Budget</b><br>Access our Open Budget web application |  <b>Open Data Toolkit</b><br>Access our Toolkit. Check out how we got to where we are today! |

# OPEN DATA TECH



SAFE SOFTWARE

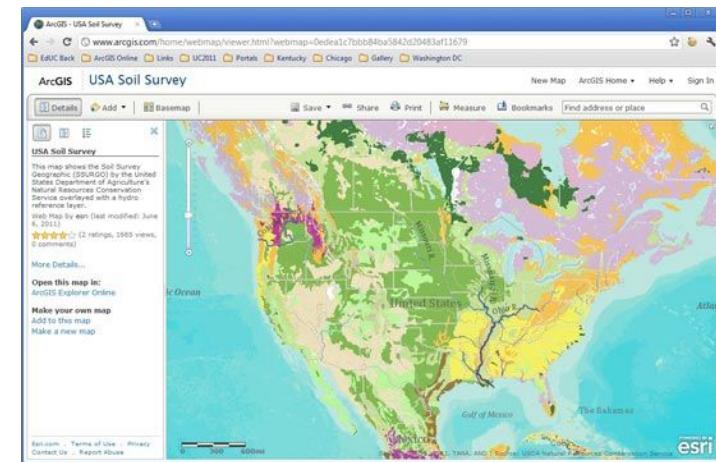


ArcGIS

# OPEN DATA APIs

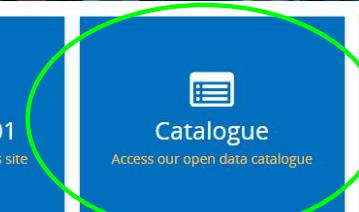
[View Data](#) [Visualize](#) [Export](#) [API](#) [...](#)

- Export
- APIs
- Odata



# City of Edmonton's Open Data Portal

Your data. Connect, download, analyze.  
Please click here to review our Terms of Use.



**Open Data 101**  
Tips & Tricks for using this site

**Catalogue**  
Access our open data catalogue

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Access our Toolkit. Check out how we got to where we are today!



New Sip Ctrl+N

Corporate Services

Financial Services and Utilities

Sustainable Development

Transportation Services

Show All...

Tags

- speed data collection
- speeding
- driver feedback sign
- insight community
- edmonton

Show All...

Federated Domains

- This site only
- dashboard.edmonton.ca

## 2016 Street Construction Projects (Map VIEW)

Transportation

A list of special projects and major road construction planned for 2016.

Tags projects, street construction

Updated September 11, 2018

Views 95,651

## 2017 Edmonton General Election - Mayoral Race

Elected Officials

This dataset reflects the official election results for the 2017 Edmonton General Election.

Tags edmonton, 2017, councillor, municipal, results, and 3 more

Updated October 20, 2017

Views 94,756

## Traffic Disruptions

Transportation

This dataset provides information about what's happening on Edmonton's roads that could impact your drive, including: ...

More

Tags construction, traffic, detours

API Docs

Updated January 18, 2019

Views 92,720

## Current Road Projects

Transportation

A dataset of road projects in the design, current or complete stages of the project.

Tags planning, current, construction, complete, design

Updated February 22, 2018

Views 66,957

## Residential Snow Clearing Schedule

Transportation

A list of all City of Edmonton transportation maintenance areas and the date on which each is scheduled for residential snow clearing. Does NOT include arterials or major routes...

More

Updated January 18, 2019

Views 65,119



## Traffic Disruptions

Transportation

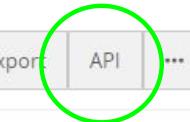
[View Data](#)

Visualize ▾

Export

API

...



This dataset provides information about what's happening on Edmonton's roads that could impact your drive, including:  
Major road closures and detours, Road construction, Travel delays and special events that impact traffic.

Updated  
January 18, 2019

Data Provided by  
City of Edmonton

### About this Dataset

Updated

**January 18, 2019**

Data Last Updated  
January 18, 2019

Metadata Last Updated  
January 18, 2019

#### General Information

Primary Dataset or View

Primary

Spatial

each is scheduled for residential snow clear

View Data   Visualize ▾   Export   API   ...

Access this Dataset via SODA API X

The Socrata Open Data API (SODA) provides programmatic access to this dataset including the ability to filter, query, and aggregate data.

[API Docs](#) [Developer Portal](#)

API Endpoint

`https://data.edmonton.ca/resource/2p9r-pjc9.` [JSON](#) [Copy](#)

Updated  
January 18, 2019

Data Provided by  
City of Edmonton

# Tools in the API Docs

Edmonton

## App Tokens

All requests should include an [app token](#) that identifies your application, and each application should have its own unique app token. A limited number of requests can be made without an app token, but they are subject to much lower throttling limits than request that do include one. With an app token, your application is guaranteed access to its own pool of requests. If you don't have an app token yet, click the button to the right to sign up for one.

Once you have an app token, you can include it with your request either by using the `X-App-Token` HTTP header, or by passing it via the `$$app_token` parameter on your URL.

 Sign up for an app token!

Learn more about [App Tokens & Throttling](#).

## Fields

Each column in the [dataset](#) is represented by a single `field` in its SODA API. Using [filters](#) and [SoQL queries](#), you can search for records, limit your results, and change the way the data is output. For example, you could filter this dataset by its `maintenance_area_number` field using a query like the following:

For richer filtering, you can combine filters together by stacking parameters on your URL or by using [SoQL queries](#). Learn more about each of the fields in this dataset by clicking the headers below, or read more about the SODA API using the navigation at the top of the page.

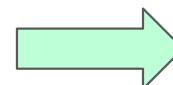
## Code Snippets

The following are grab-and-go code samples you can use with popular programming languages and data science tools.

[jQuery](#) [Python](#) [Pandas](#) [PowerShell](#) [RSocrata](#) [SAS](#) [soda-ruby](#) [SODA.NET](#) [Stata](#)

jQuery makes it super simple to fetch and parse JSON from an API endpoint.

```
$.ajax({
  url: "https://data.edmonton.ca/resource/2p9r-pjc9.json",
  type: "GET",
  data: {
    "slimit" : 5000,
    "$$app_token" : "YOURAPPTOKENHERE"
  }
}).done(function(data) {
  alert("Retrieved " + data.length + " records from the dataset!");
  console.log(data);
});
```



- Filter code samples from different languages
- Easily accessible from the data
- Easily export the data

# Developer Portal

Edmonton



Welcome to this Edmonton's Open Data Portal API, powered by Socrata

For more information on how to access this dataset via the Socrata Open Data API, read on. Additional information on query functionality, code samples, and libraries can be accessed using the navigation above.

## Traffic Disruptions

Good to go! You're already using the latest version of this dataset API.

This dataset provides information about what's happening on Edmonton's roads that could impact your drive, including: Major road closures and detours, Road construction, Travel delays and special events that impact traffic.

### Getting Started

All communication with the API is done through HTTPS, and errors are communicated through HTTP response codes. Available response types include `JSON`, `XML`, and `CSV`, which are selectable by the "extension" (`.json`, etc.) on the API endpoint or through content-negotiation with HTTP `Accepts` headers.

This documentation also includes inline, runnable examples. Click on any link that contains a next to it to run that example live against the `Traffic Disruptions` API. If you just want to grab the API endpoint and go, you'll find it below.

try it docs copy json

<https://data.edmonton.ca/resource/ju4q-wijd.json>

Learn more about:

- Getting started with the SODA Consumer API

#### About This Dataset

**Dataset Identifier:** ju4q-wijd  
**Total Rows:** 43  
**Source Domain:** data.edmonton.ca  
**Created:** 3/26/2015, 9:47:19 AM  
**Last Updated:** 1/18/2019, 2:15:08 PM  
**Category:** Transportation  
**Attribution:** City of Edmonton  
**License:** See Terms of Use  
**Owner:** TrafficOpenData  
**Endpoint Version:** 2.1  
**Embed These Docs:** copy

[View dataset >](#)

#### Download & Export

Just want to grab this dataset in bulk to analyze offline? You can use the



# OPEN DATA REFLECTIONS

Edmonton

# What We Found

*“What is the most significant factor holding your organization back from using data and analytics to drive more day-to-day decisions?”*

- 46% lack of information about the available data and contact person
- 42% data is not integrated
- 39% lack of skills/training/education
- 29% poor data quality



# What We Found

- Many employees lack the skills/training for self-serve analytics
- Majority of users still using Excel/Google Sheets for analysis
- Strong demand for Data preparation, integration and analysis training

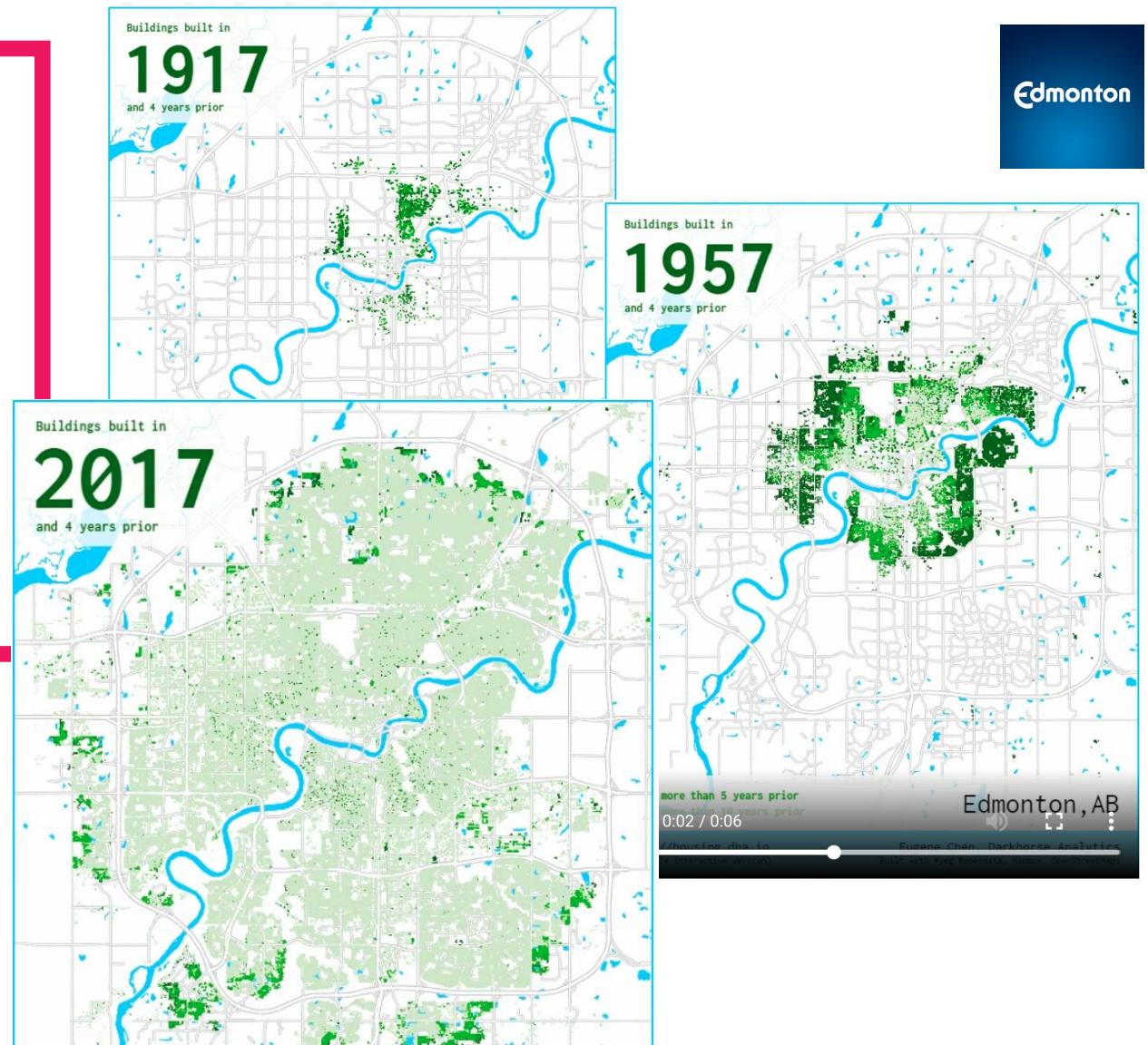




# Key Focus Areas



# OPEN DATA USES



# Recent Open Data Releases

Edmonton



Driver Feedback Signs  
and Speed Survey



Visualizing Water  
Consumption



Mapping Historic  
Properties and Resources

# Open Data for Business

Edmonton



Census



Business Licensing



Pet Licensing

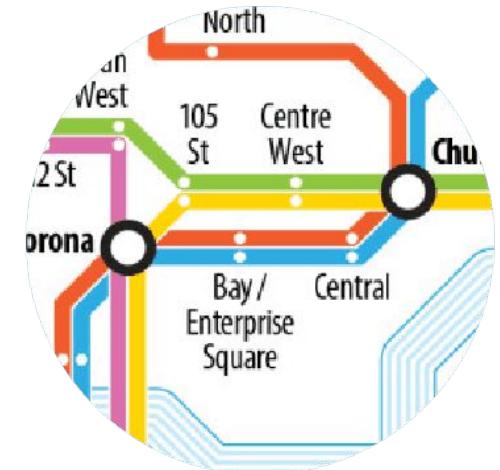
# Open Data and Citizen Analysis

Edmonton



Understanding Property  
Tax Assessments

Addressing Poverty &  
Homelessness



Visualizing Route  
Maps

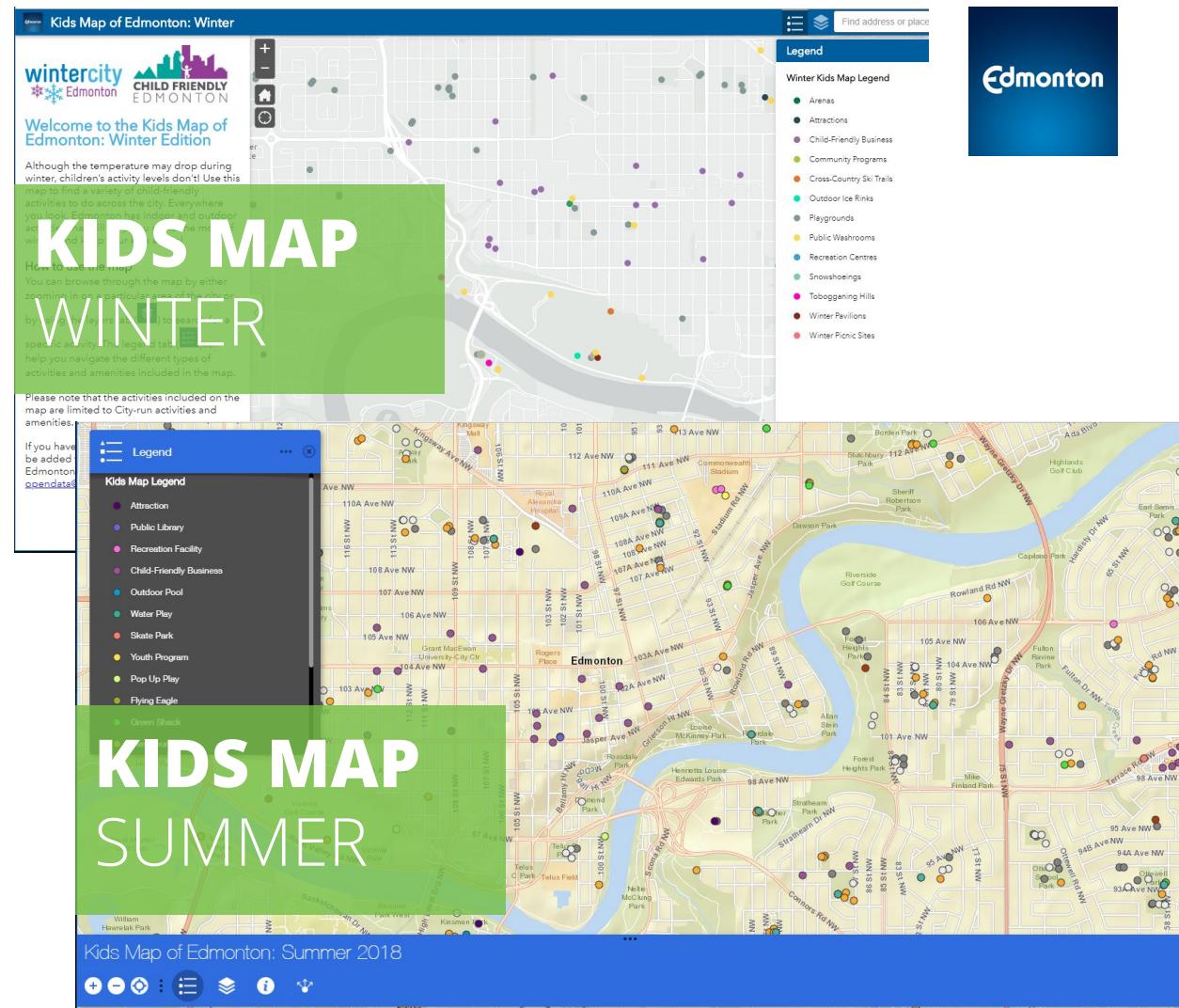
## How do members of the community view Open Data?

*"It's great how we can do cutting edge stuff using open source tools"*

*"Open Data creates a community for developers and programmers"*

*"Helps reduce barriers for young coders and programmers to foster a new wave of innovation"*

# OPEN DATA INTERACTIVE





# OPEN DATA FUTURE





# Edmonton's Open Data - Moving Forward

Increase  
ease of use



Maps and visualizations



Citizen Connect and  
other integrated apps



Storyboarding data  
processes

Enhance quality and  
connectedness



Correlate our data with  
other existing data



Integrate with other  
orders of Government



More historical granular  
data to allow longer  
trending

Continue to cater  
to data experts



Partnerships with  
academia



Working closely with  
Residents



Provide foundation for  
innovation and app  
development



# SMART CITIES

*'A Smart City is not just about technology. It is about creating and nurturing a resilient, livable, and workable City through the use of technology, data and social innovation.'*

~ City of Edmonton



# SENSORS



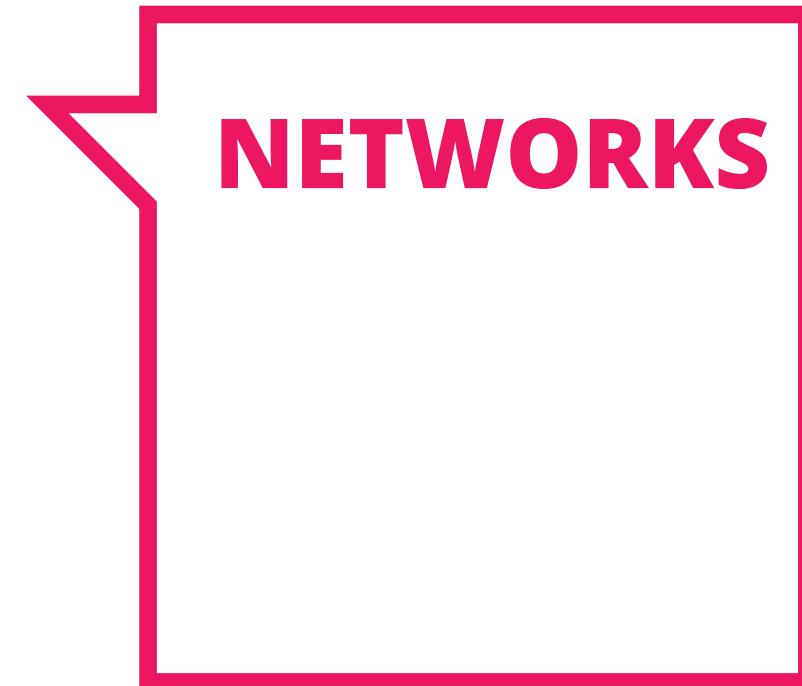
# SENSORS



WILDLIFE  
MOVEMENT

PEST  
CONTROL





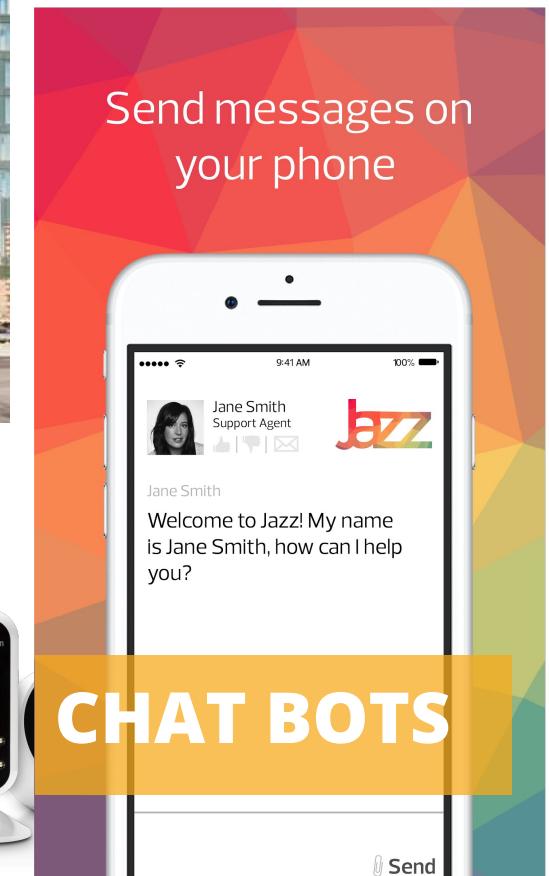
**NETWORKS**



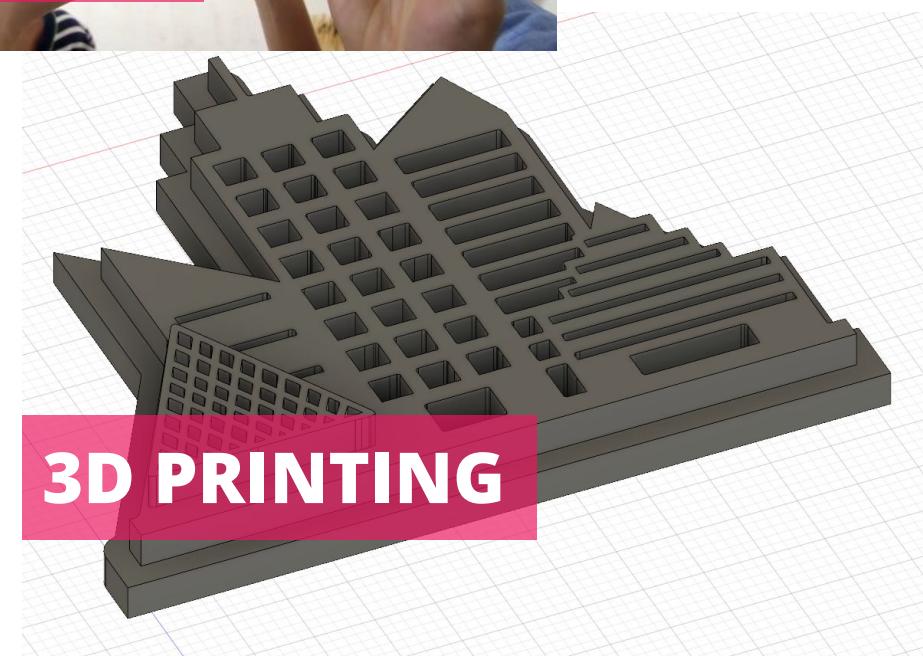
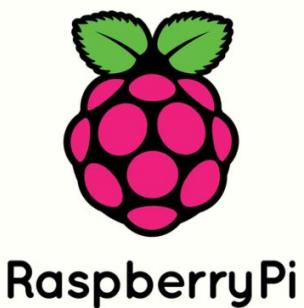
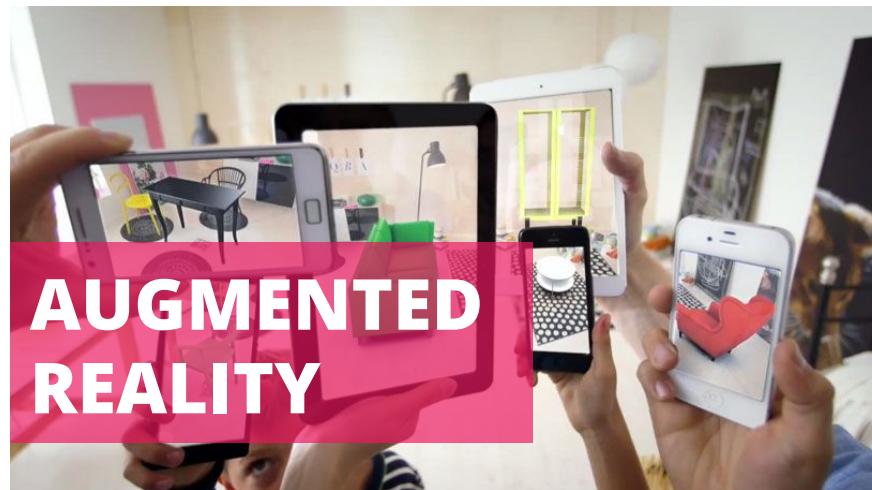
**SENSOR  
NETWORKS**



# ARTIFICIAL INTELLIGENCE

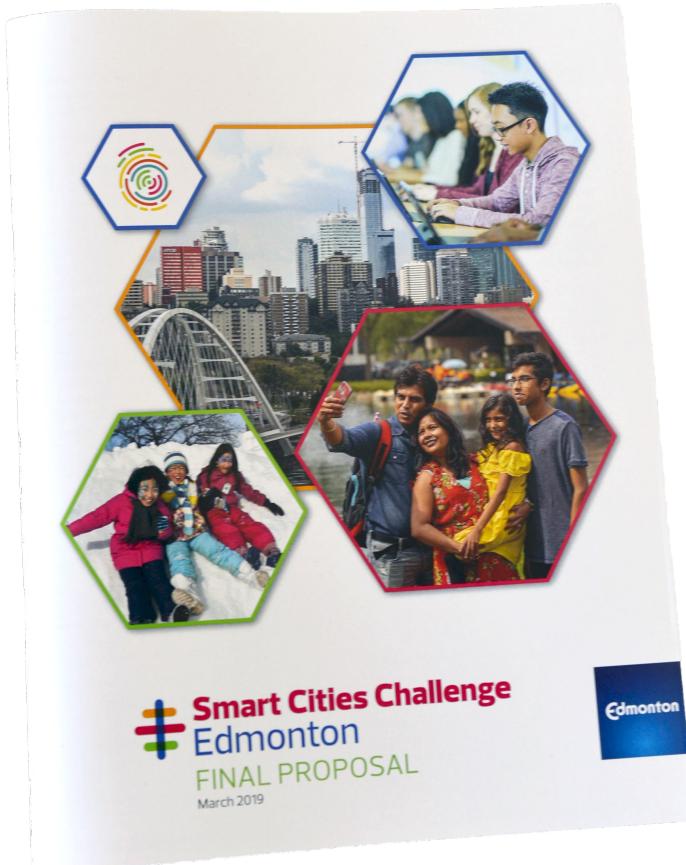


# EMERGING TECHNOLOGY



# CITY OF EDMONTON SMART CITIES CHALLENGE

 Smart Cities Challenge  
Edmonton



# OUR VISION

Edmonton



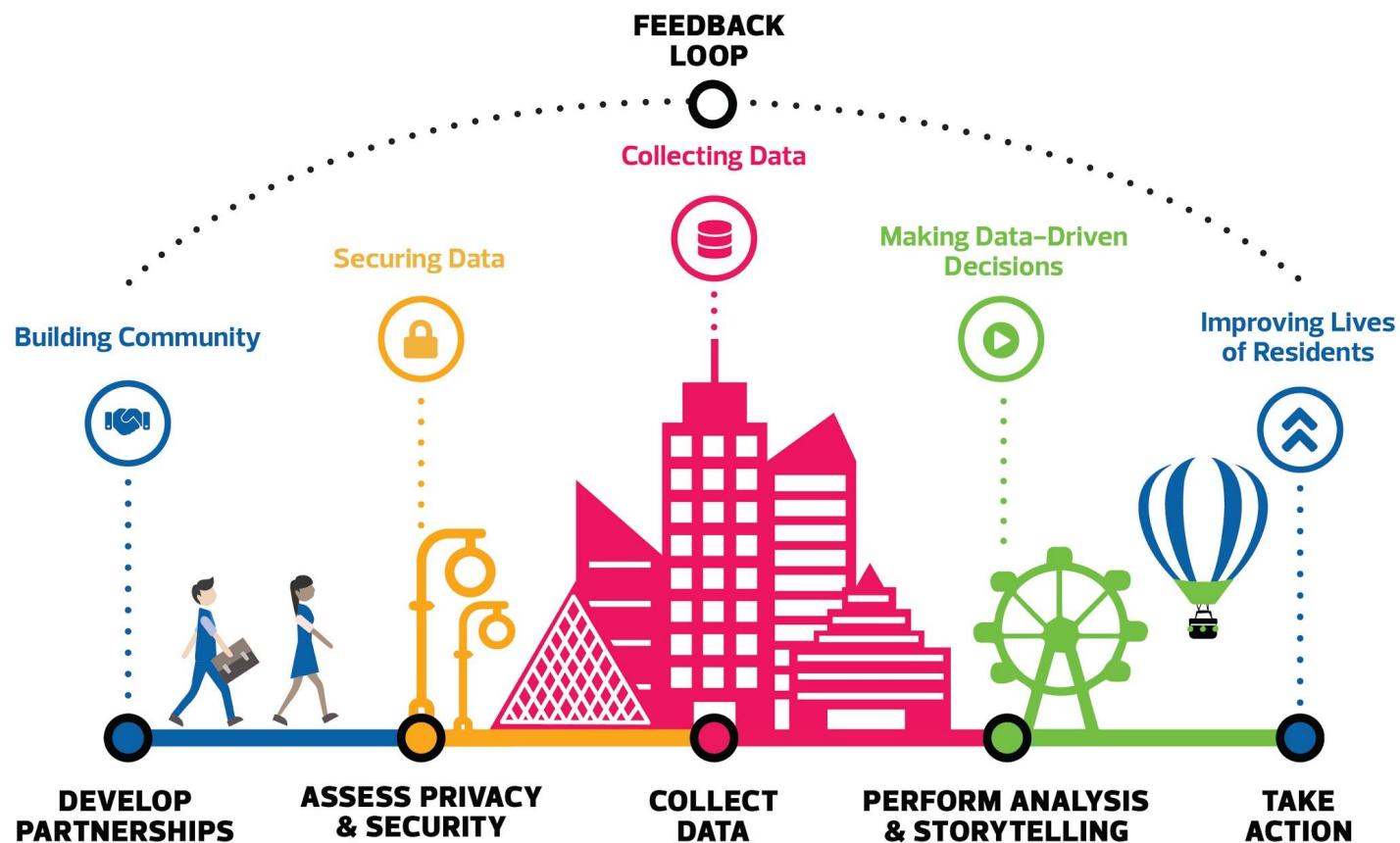
## **1. To improve quality of life for residents.**

The City of Edmonton and partners will implement changes to policies, programs and services to positively impact the health and well-being of residents.

## **2. To transform how municipalities across Canada work with residents and partners to achieve excellence in data and technology.**

The City of Edmonton will lead the creation of a municipal-focused digital innovation collective that spans communities across Canada in order to build capacity for resident-driven open data and analytics. This would also extend to First Nations, Metis and Inuit communities.

# SMART CITY FRAMEWORK



Partners across the public, private and not-for-profit sectors and residents will join together.

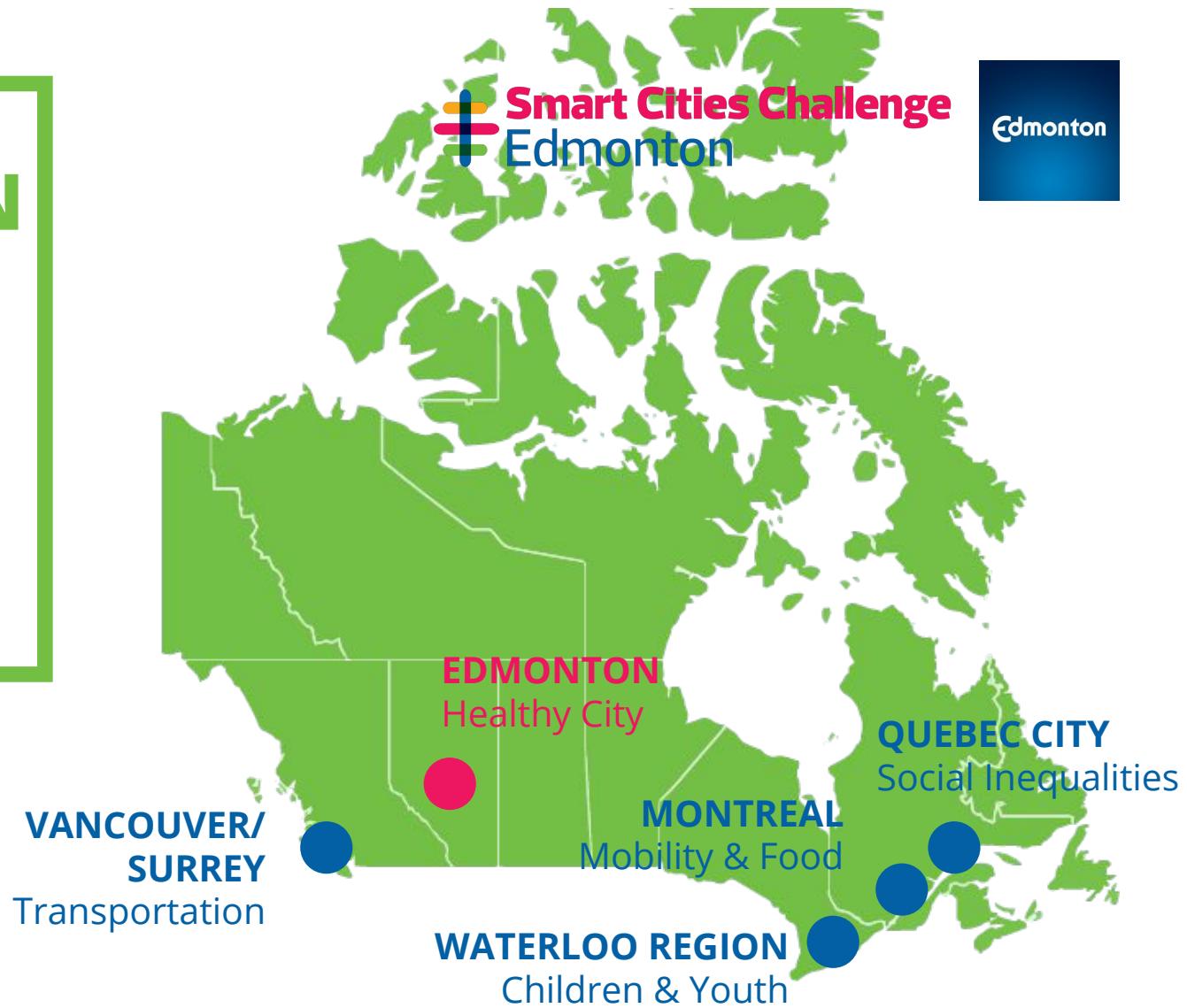
The privacy and security of our residents is top of mind. Data is securely managed between partners.

As determined by each project, data will be gathered and secured.

Analysis and storytelling will transform raw data to identify changes to policies, programs and/or services.

Actions to improve policies, programs and/or services will impact the quality of life of residents.

**\$50 MILLION  
CATEGORY  
BIDS**





A large, dense crowd of people of various ages and ethnicities is shown walking across a light-colored paved surface. The scene is captured from a high-angle perspective, looking down at the crowd. The people are dressed in casual attire, including t-shirts, jeans, and backpacks. The overall atmosphere is one of a busy, everyday urban environment.

THANK  
YOU

Edmonton