DEVELOPING
THREE DISTINCT
EVALUATION SCENARIOS

Edmonton

This document was written by The City Plan Team to describe how three distinct evaluation scenarios were created to inform learnings for The City Plan.

Developing Evaluation Scenarios

STEP 1

In order to develop a recommended land use concept and supporting intentions and directions, The City Plan team created three conceptual scenarios for the purpose of learning and assessment. These conceptual scenarios, referred to as evaluation scenarios in this document, are used to understand the consequences of a future city of two million people when very different growth patterns and policy are applied. A business-as-usual evaluation scenario was also created to show what a future city would look like if Edmonton continued to grow as it has been growing over the last 10 years. This provides valuable information and a basis of comparison on how differing evaluation scenarios would change the current growth and development of Edmonton and what any impacts or trade-offs might be relative to alternative approaches.

These evaluation scenarios were not developed for the purpose to show potential alternatives for a recommended future city, rather they were developed to provide specific learnings from each of the conceptual scenarios. They represent exaggerated city forms, each one distinct enough to allow for testing and evaluation of various development patterns to help inform a recommended land use concept. In each of the evaluation scenarios the allocation of land use and population was informed by these inputs:

1. **Rationale for future land use allocation**
2. **Research on specific elements such as nodes and corridors, planning districts, climate impact analysis and mass transit**

Land use rationale for a future Edmonton

To fully integrate the five Big City Moves into the physical form of the city, allocating land use for a future Edmonton at two million people was advanced using the following ideas:

1

Maintain population growth within our existing boundary

a. Continuing to grow as Edmonton has historically grown, the current city boundary would only accommodate a population of 1.8 million, and would consume all available land. The expansion of Edmonton's urban footprint by approximately 5,000 hectares would be required to accommodate an additional 200,000 people within the city's municipal boundary

b. Historical growth patterns or business–as–usual (BAU) require more efficient land development

c. Positively affect climate resilience and adaptation by lowering environmental impact by consuming less land

d. Create more vibrant, intensive and intentional communities to reduce social isolation and increase social connectedness

e. Provide alignment to the Edmonton Metropolitan Growth Plan, including the regional agriculture master plan and other regional considerations

2

Maintain and increase access to green space in Edmonton

a. Reconnect fragmented ecological habitat

b. Bring nature into existing and new communities, including lands newly added to Edmonton

c. Focus on current gaps in green spaces, improving existing areas and their connectivity, building on what we have (e.g., utility and transportation rights–of–way)

d. Use natural areas to protect against climate change and reduce urban heating risk

e. Make open and natural spaces more easily accessible to Edmontonians support physical and mental health

3

Need for greater integration and connected thinking of / for places, systems, networks

a. Provide a more equitable distribution of places to live, learn, work, recreate

b. Form a network of strategically located areas for intensification to spatially focus and organize development, investment, operations and services at a district level

c. Better connect people, density, and transit at all scales (i.e., a wide range of transit–oriented development opportunities)

d. Shift toward more physically and socially connected places in Edmonton

4

Increase development potential within the city by rebuilding and repurposing spaces

a. Identify areas for intensification in places built on existing opportunities and strengths such as underutilized lands, malls and arterial corridors

b. Extend infill throughout the city to provide more efficient use of available lands

c. Support adaptable spaces / for new development and redevelopment over time

d. Support more efficient use of infrastructure through upgrades over time

e. Promote more livable, healthy places where spaces evolve into places

f. Build more inclusive spaces with a focus on greater accessibility and quality design

5

Diversify Edmonton's Economy

a. Intensify older industrial areas helping them to evolve and diversify over time

b. Recognize the opportunity for economic diversification using agricultural development within and outside Edmonton's boundary

c. Grow new industrial lands in a manner that supports the regional context

d. Leverage local knowledge and expertise to recognize and act on emerging trends within a central innovation corridor

e. Activate strategically located areas for intensification to act as economic hubs across the city and with regard to the region

Additionally, The City Plan team drew on research carried out on policy topics such as:

1. **Nodes and Corridors**
2. **Planning Districts**
3. **Mass Transit**

These elements, as well as the expertise and experience of both external consultants and in-house professional planners and engineers, were used to inform different approaches to land use forms for each of the evaluation scenarios.

The resulting evaluation scenarios, including "businesses-as-usual" (BAU) are briefly described as follows:

Business-As-Usual

Under this scenario, the target to achieve two million people within Edmonton cannot be accommodated within the existing boundary of the city, requiring the future annexation of approximately 5,000 hectares of land to achieve the anticipated growth. The business-as-usual evaluation scenario is based on existing development patterns and trends. This scenario distributes future growth according to the same patterns Edmonton has experienced over the past 10 years. It also reflects the required infrastructure upgrades that will be required to sustain the business as usual development trends.

Central City ("City 1")

The central city evaluation scenario examines what might happen if, over the next few decades, Edmonton's growth were to happen primarily downtown and predominantly in the core neighbourhoods and some mature areas. In this scenario, the City would develop policies that would lead to a large concentration of people and jobs supporting a strong central core.
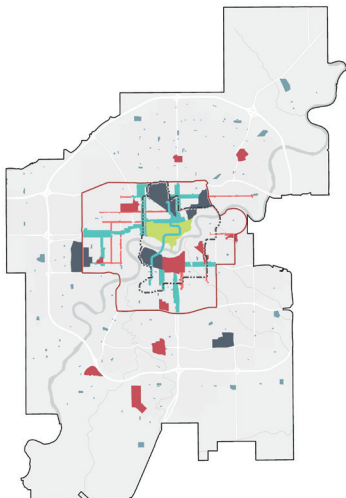
Node City
("City 2")
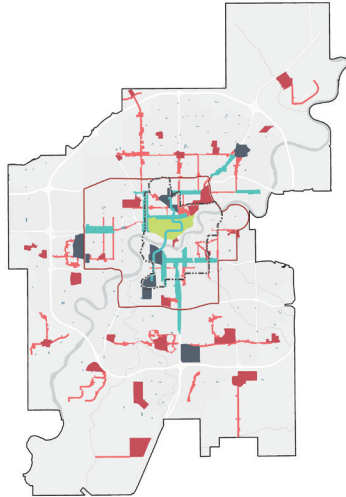
The node city evaluation scenario focuses on a large number of dispersed urban villages city-wide. It considers a future where growth is distributed primarily among the central core and key transit-supported nodes throughout the city. Each of the city's 15 proposed planning districts would contain one or more nodes featuring concentrations of housing, jobs and everyday needs like shopping and recreation.

Corridor City
("City 3")
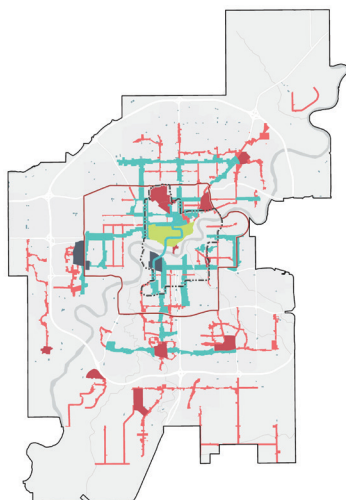
In the corridor city evaluation scenario, growth would be distributed primarily along medium to high density mixed use corridors, with less emphasis on nodes. This development pattern takes more of a "main street" approach and would add more activity and vitality to business and residential corridors and provide more equitable access to jobs, services and housing. It would also create more green spaces and naturalized corridors throughout the city.

Modelling Methodology

The City Plan team incorporated the help of modelling software to understand the effects of the land use and transportation interaction for each of the evaluation scenarios. The modelling tools produced a range of conditions that could be expected if Edmonton followed a specific growth pattern set for each of the evaluation scenarios.
In order to visualize the evaluation scenarios, the modelling tools use real-world data inputs such as:

- **existing plans and land use policies in effect that included approvals or targets,**
- **existing and proposed road and transit infrastructure,**
- **municipal survey and federal census data, and**
- **future projections for economic, demographic and employment growth.**

These inputs were processed using several modelling software platforms in order to create a future projection of land use and transportation for each evaluation scenario. Once the modelling tools finished working through the data, City staff and consultants interpreted the information to inform the following topics relevant to the City Plan:

- **expected land use changes,**
- **housing mix at a district and city wide level,**
- **population distribution,**
- **transportation network performance, transit ridership, travel times,**
- **greenhouse gas emissions, and**
- **effects to natural areas and energy use.**

As part of this modelling methodology, indicators were developed to measure the relevant topics listed. These key indicators help demonstrate how elements like transportation and greenhouse gas emissions performed in each evaluation scenario at a district level and city-wide scale. This technical analysis also allowed the City Plan team to further compare each evaluation scenario against each other and against Edmonton's current performance.
By analyzing these elements in each scenario, the City Plan team could learn about the impacts of how the city grew in each of the evaluation scenarios, including the benefits and drawbacks associated with each.

This modelling approach of evaluation scenarios was used in order to inform a recommended (draft) land use concept. This modelling methodology is comparable to growth scenario modelling methods used in other jurisdictions such as the City of Portland and the Greater Toronto Area.