

City of Edmonton

Edmonton

Neighbourhood Renewal Price Index, 2021

Office of the Chief Economist

Felicia Mutheardy, Acting Chief Corporate Economist
Financial and Corporate Services
(780) 496-6144

Integrated Infrastructure Services

Nicole Wolfe, Acting Director, Neighbourhoods
Infrastructure Delivery
(780) 288-4105

TABLE OF CONTENTS

1. Executive Summary	PG 3
2. Introduction	PG 4
2.1 Neighbourhood Renewal	
2.2 Understanding Inflation	
2.3 Developing a Neighbourhood Renewal Price Index (NRPI)	
3. The City of Edmonton NRPI	PG 6
4. Appendix	PG 8
4.1 Appendix 1: Construction Category Definitions	
4.2 Appendix 2: Detailed Breakdown and Definitions of Factor Inputs	
4.3 Appendix 3: Detailed Breakdown and Data Sources of Factor Inputs	

1.0 Executive Summary

The Neighbourhood Renewal Program is a cost-effective, long-term strategic approach to address infrastructure needs such as the renewal and rebuilding of roads, sidewalks and streetlights in existing neighbourhoods and collector roadways. Monitoring inflation facing the Neighbourhood Renewal Program is important for the City of Edmonton (“City”) as it can have various effects on the year-to-year administration of the program as well as on the financial decision-making tied to its budgetary process.

Inflation is an increase in the price level of goods and services in an economy over an extended period of time. The Consumer Price Index (CPI), produced by Statistics Canada, measures the change in the price of a basket of goods and services consumed by an average customer. Although the CPI is the generally accepted measure of inflation, the City recognizes that it does not correctly represent the purchasing experience of the Neighbourhood Renewal Program.

Development of a Neighbourhood Renewal Price Index (NRPI) was undertaken as a means to measure inflation facing the Neighbourhood Renewal Program. The CPI represents the purchasing experience of the average consumer, whereas the NRPI represents the purchasing experience of the Neighbourhood Renewal Program.

Actual prices for neighbourhood renewal decreased by 1.9 per cent in 2020 as a whole, while consumer prices in the Edmonton census metropolitan area (CMA) rose by one per cent. In 2021, neighbourhood renewal prices are estimated to increase by 3.1 per cent while consumer prices¹ are expected to increase by 1.5 per cent—bringing the difference between the two inflation rates to 1.6 percentage points. A comparison of neighbourhood renewal and consumer prices in 2019 and 2020 is shown in the table below.

Comparison of Neighbourhood Renewal and Consumer Price Index², per cent

	2020	2021f
NRPI	-1.86	3.14
CPI	1.00	1.50
Difference (in percentage points)	-2.86	1.64

Source: City of Edmonton and the Conference Board of Canada

¹ The Edmonton CMA CPI forecast from the Conference Board of Canada referenced here comes from their spring 2021 update.

² 2021 values are forecasts (denoted by “f”). 2020 values are the actual rates experienced in that year.

2.0 Introduction

2.1 Neighbourhood Renewal

The Neighbourhood Renewal Program is a cost-effective, long-term approach to address Edmonton's neighbourhood infrastructure needs. It involves the renewal and rebuilding of roads, sidewalks and streetlights in existing neighbourhoods and collector roadways. The program balances the need to rebuild in some neighbourhoods with the need for preventative maintenance in others.

The types of neighbourhood renewal work vary depending on the state of infrastructure and include:

1. **Preventative maintenance** – roads are resealed to extend their lifespans.
2. **Overlay** – roads are repaved, and sidewalk panels are treated to eliminate trip hazards.
3. **Reconstruction** – roads are repaved, and streetlights and sidewalks are replaced.

By effectively combining reconstruction, overlay and preventative maintenance, the City of Edmonton can improve all of Edmonton's neighbourhoods within 30 years.

The costs of implementing the Neighbourhood Renewal Program have fluctuated considerably in recent years. As such, an index to measure the inflation of neighbourhood renewal costs was developed.

2.2 Understanding Inflation

Inflation is an increase in the price level of goods and services in an economy over a period of time. In essence, inflation means that as time passes, more money is required to purchase a particular good or service. If an item costs \$100.00 in period 1, and period-to-period inflation is two per cent, that same item will cost \$102.00 in period 2, \$104.04 in period 3 and so forth.

Since 1991, the Bank of Canada has employed an inflation control target that aims to maintain annual consumer inflation at approximately two per cent per year. This monetary policy has been successful, and consumer inflation, as measured by the Consumer Price Index (CPI), has been, on average, stable at the national level.

The costs of implementing the Neighbourhood Renewal Program also face inflation. From year to year, a larger amount of money is required by the City to purchase the same quantity of inputs necessary for neighbourhood renewal. However, because the basket of goods and

services purchased by the Neighbourhood Renewal Program is considerably different compared to the basket of goods and services purchased by the average consumer, the CPI is not an adequate measurement of the inflation rate facing neighbourhood renewal. Moreover, the inflation rate facing the Neighbourhood Renewal Program tends to be considerably more volatile than the rate facing the average consumer.

2.3 Developing a Neighbourhood Renewal Price Index (NRPI)

The development of the Neighbourhood Renewal Price Index (NRPI) was undertaken by a steering committee of representatives from the Office of the Chief Economist and senior managers from Integrated Infrastructure Services. Prior to developing the NRPI, the Office of the Chief Economist constructed a Municipal Price Index (MPI). The MPI was designed to measure year-to-year inflation affecting the City's operating budget. The MPI does not, however, measure inflation for the City's capital projects. As a result, the NRPI project was launched with the specific goal to measure year-to-year inflation facing the Neighbourhood Renewal Program.

Measuring and understanding inflation is important as it affects both the planning and administering of municipal services. By understanding inflationary pressures, management can make informed decisions with respect to the Neighbourhood Renewal Program and strategically respond to external economic conditions.

Details on the NRPI methodology can be found in the NRPI Backgrounder available [here](#).

3.0 The City of Edmonton's NRPI

The inflation/deflation facing the Neighbourhood Renewal Program is shown in Table 3. The inflation rate for 2020 represents the actual inflation rates experienced over that period, whereas the inflation rate for 2021 represents the expected price renewal inflation to occur over the current year.

The NRPI is updated annually, generally in the spring. The update process involves revising the previous year's values, if necessary, to reflect actual inflation rates and calculating the forecasted inflation rates for the current year. The expenditure category weights from the 2018 report were used for the 2021 NRPI calculations, as well as the weighting of each input factor by expenditure category.

Actual prices for neighbourhood renewal decreased by 1.86 per cent in 2020 while consumer prices in the Edmonton CMA rose by one per cent. Neighbourhood renewal prices in 2021 are estimated to increase by 3.14 per cent, whereas consumer prices are expected to increase by 1.5 per cent—bringing the difference between the two inflation rates to 1.6 percentage points. The sharp increase in the 2021 NRPI was primarily influenced by much higher prices year-over-year for aggregate supply.

Table 3 shows construction category weights and inflation rates used to generate the NRPI in 2020 and 2021. The table also compares the NRPI to the CPI over those years.

Table 3: City of Edmonton NRPI³, per cent

No.	Construction Category	Weight (per cent)	Inflation Rates (per cent)	
			2020	2021f
1	Asphalt	16.60	0.89	0.00
2	Base Work - Sidewalk	19.00	-0.52	1.70
3	Base Work - Full-depth Reclamation (FDR)	9.40	-0.13	0.60
4	Concrete	30.60	-1.85	0.00
5	Drainage/Underground	9.40	-0.22	0.66
6	Excavation	11.60	0.01	0.00
7	Landscaping	3.40	-0.05	0.18
		100.00		
	NRPI		-1.86	3.14
	CPI		1.00	1.50
	Difference (in percentage points)		-2.86	1.64

Source: City of Edmonton and the Conference Board of Canada

³ 2021 values are forecasts (denoted by “f”). 2020 values are the actual rates experienced in that year. Sum of components may not equal 100 due to rounding

4.0 Appendix

4.1 Appendix 1: Construction Category Definitions

No.	Construction Category	Definition
1	Asphalt	The top layer of road structure consisting of oil, aggregate and binder.
2	Base Work – Sidewalk	The substructure of a sidewalk consisting of aggregate, cement and/or soil cement.
3	Base Work – Full-Depth Reclamation (FDR)	The substructure of a roadway consisting of aggregate, cement and or/soil cement. Full-Depth Reclamation is the use of existing road base in the construction of new road base.
4	Concrete	A major component of cement-incorporated work consisting of curb and gutter, sidewalk, moonwalk lane crossings, etc.
5	Drainage/Underground	The underground component of a roadway structure associated with drainage pipes, manholes, catch basins and associated work.
6	Excavation	Roadway-associated work consisting of removal and disposal of existing soils, existing concrete, asphalt and other roadway-associated materials.
7	Landscaping	Roadway-associated work consisting of sod, black dirt and associated landscaping features.

4.2 Appendix 2: Detailed Breakdown and Definitions of Factor Inputs

No.	Component	Definition	Inputs Used
1	Labour	The productive services provided by people.	General labourers (foremen, lead hands, formsetters, concrete finishers, raker people, screed people, pipe layers, pipe layer helpers, grade people, labourers and flag people) and operators (journeymen, group 1, group 2, group 3 and group 4).
2	Equipment	The machinery used to perform the construction work.	Crawler pavers, pneumatic tire rollers, double-drum steel rollers, tandem-axle dump trucks, pneumatic steel combinations, loaders–rubber tires, loaders–skid steers, reclaimers/stabilizers, single-drum padfoots, single-drum smooth–vibratory, motor graders, loaders–backhoes, hydraulic excavators and water trucks.
3	Materials	The physical materials that are used in construction.	Asphalt material (ACF-LT, ACF-HT, 20mm-B, 10mm sandmix), concrete (class C summer mix, class C fall mix, class C cold weather mix) and aggregate supply (20mm).

4.3 Appendix 3: Detailed Breakdown and Data Sources for Factor Inputs

No.	Construction Category	Component	Inputs Used	Data Source
1	Asphalt	Labour	Combined general labourer and operator rate	Alberta Roadbuilders & Heavy Construction Association (ARHCA) 2021 Labour Rates – City of Edmonton Labour Rates
		Equipment	Crawler Pavers (Groups 3 & 4) Pneumatic Tire Rollers (Groups 5 & 6) Double Drum Steel Rollers (Group 4) Tandem Axle Dump Trucks	ARHCA 2021 Equipment Rental Rates
		Materials	Asphalt material (ACF-LT, ACF-HT, 20mm-B, 10mm sandmix)	City of Edmonton Materials Management - Corporate Services
2	Base Work - Sidewalk	Labour	Combined general labourer and operator rate	ARHCA 2021 Labour Rates – City of Edmonton Labour Rates
		Equipment	Crawler Pavers (Groups 3 & 4) Pneumatic Tire Rollers (Groups 1 & 2) Loaders-Rubber Tires (Group 5) Loaders-Skid Steers (Group 4)	ARHCA 2021 Equipment Rental Rates
		Materials	Aggregate Supply (20mm)	City of Edmonton Materials Management - Corporate Services
3	Base Work – Full-Depth Reclamation (FDR)	Labour	Combined general labourer and operator rate	ARHCA 2021 Labour Rates – City of Edmonton Labour Rates
		Equipment	Reclaimers/Stabilizers (Group 5) Pneumatic Tire Rollers (Groups 5 & 6) Single Drum Padfoots (Groups 4 & 5) Single Drum Smooth – Vibratory (Groups 4 & 5)	ARHCA 2021 Equipment Rental Rates

			Loaders – Rubber Tires (Group 5) Motor Graders (Groups 3 & 4)	
		Materials	Aggregate Supply (20mm)	City of Edmonton Materials Management - Corporate Services
4	Concrete	Labour	Combined general labourer and operator rate	ARHCA 2021 Labour Rates – City of Edmonton Labour Rates
		Equipment	Crawler Pavers (Groups 3 & 4) Loaders – Skid Steers (Group 4)	ARHCA 2021 Equipment Rental Rates
		Materials	Concrete Supply (Class C summer mix, Class C fall mix, Class C cold weather mix)	City of Edmonton Materials Management - Corporate Services
5	Drainage/ Underground	Labour	Combined general labourer and operator rate	ARHCA 2021 Labour Rates – City of Edmonton Labour Rates
		Equipment	Tandem Axle Dump Trucks Loader Backhoes (Groups 3 & 4)	ARHCA 2021 Equipment Rental Rates
		Materials	Aggregate Supply (20mm)	City of Edmonton Materials Management - Corporate Services
6	Excavation	Labour	Operator rate (journeyman, Group 1, Group 2, Group3, Group 4)	ARHCA 2021 Labour Rates – City of Edmonton Labour Rates
		Equipment	Tandem Axel Dump Trucks Hydraulic Excavators (Group 5, 6 & 9)	ARHCA 2021 Equipment Rental Rates
7	Landscaping	Labour	Combined general labour and operator rate	ARHCA 2021 Labour Rates – City of Edmonton Labour Rates
		Equipment	Loaders – Skid Steer (Group 4) Tandem Axel Dump Truck Water Trucks (8.422 – 16.380L)	ARHCA 2021 Equipment Rental Rates
		Materials	Aggregate Supply (20mm)	City of Edmonton Materials Management - Corporate Services