

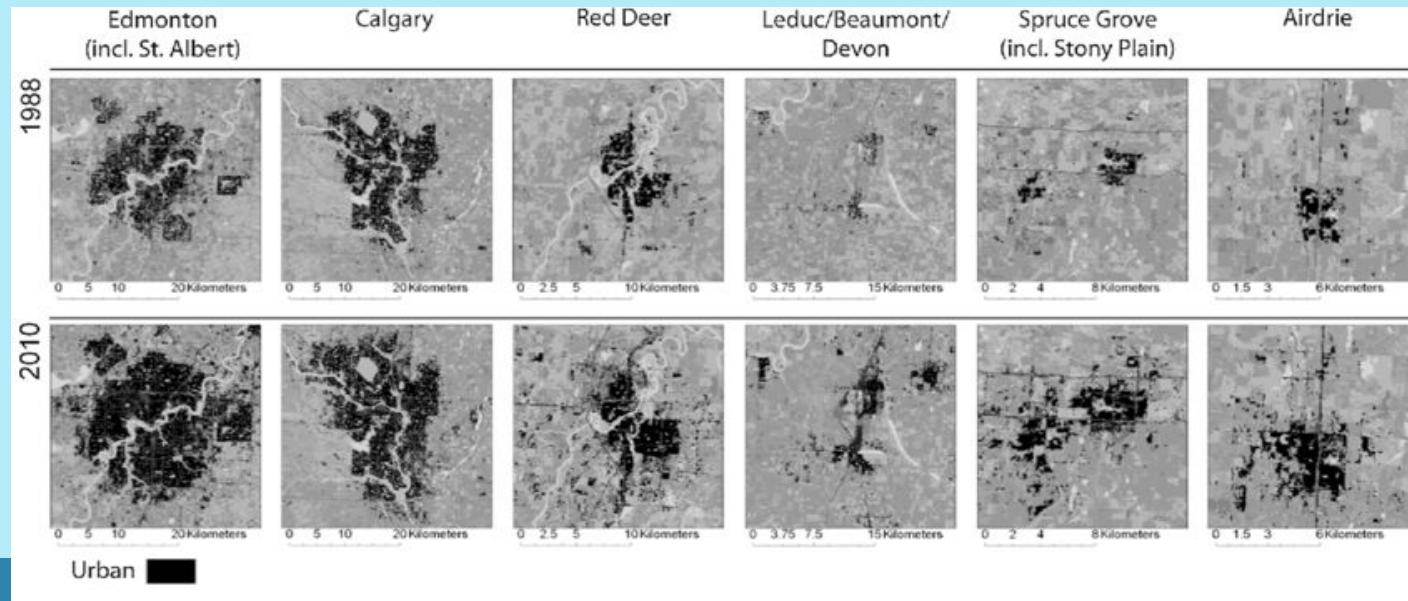
Urban Sprawl in Edmonton and Calgary

Group 4



What is Urban Sprawl?

- Rapid expansion of cities and towns
- Characterized by low-density housing, single-use zoning, and increased reliance on private automobiles



Background

Calgary

Largest City in Alberta (4th in Canada)

2011 population: 1,207,080

2021 population: 1,482,050 (+274,970)



Edmonton

2nd Largest City in Alberta (5th in Canada)

2011 population: 1,140,860

2021 population: 1,396,110 (+255,250)



Do certain socioeconomic

factors influence urban and

suburban sprawl in Edmonton

and Calgary?

Objectives

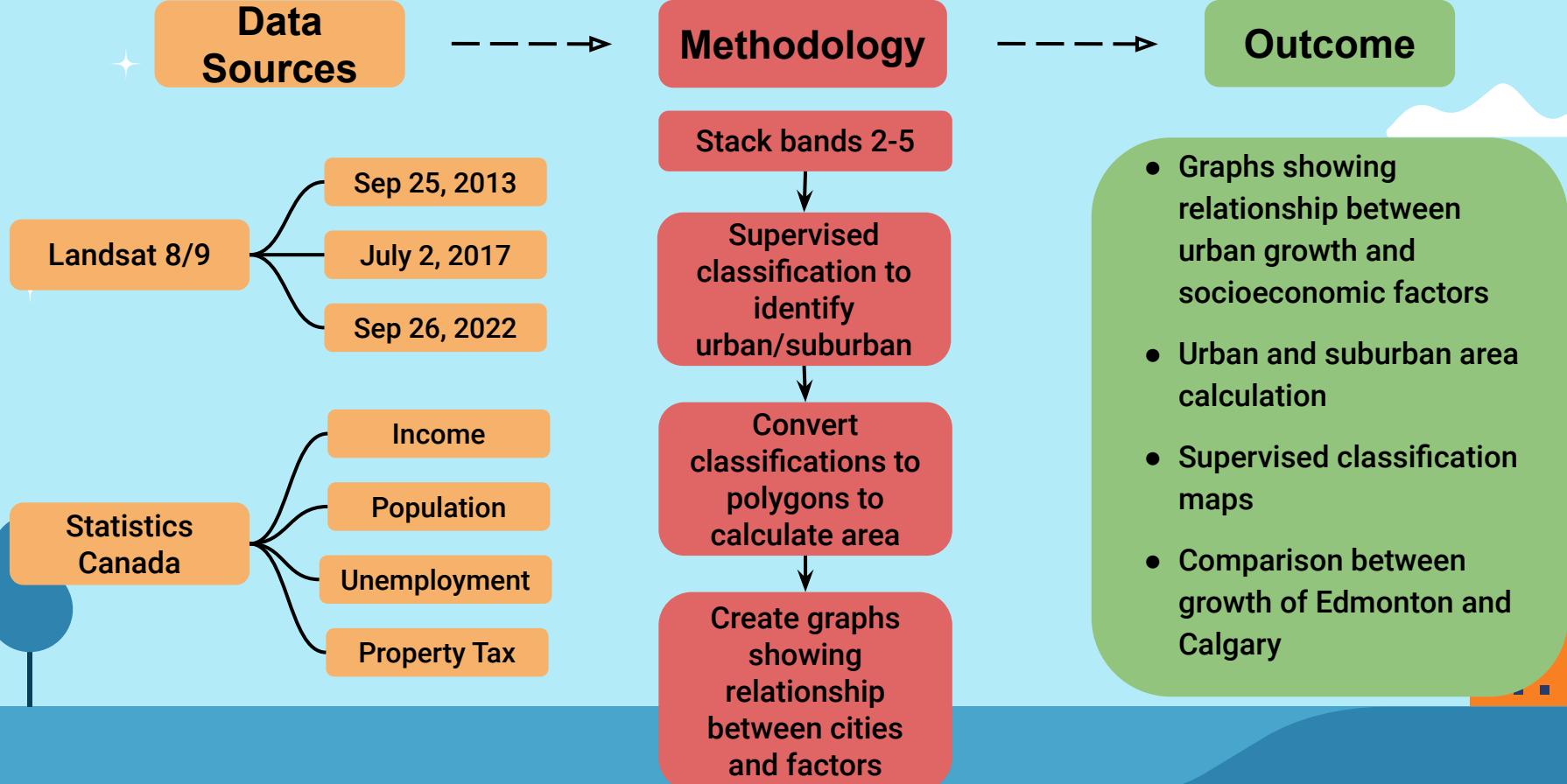
Urban and suburban expansion of Calgary and Edmonton, AB

Supervised classification of each city for years: 2013, 2017, 2022

Quantify the proportion of urban and suburban areas

Evaluate the influence of each socioeconomic factor on sprawl

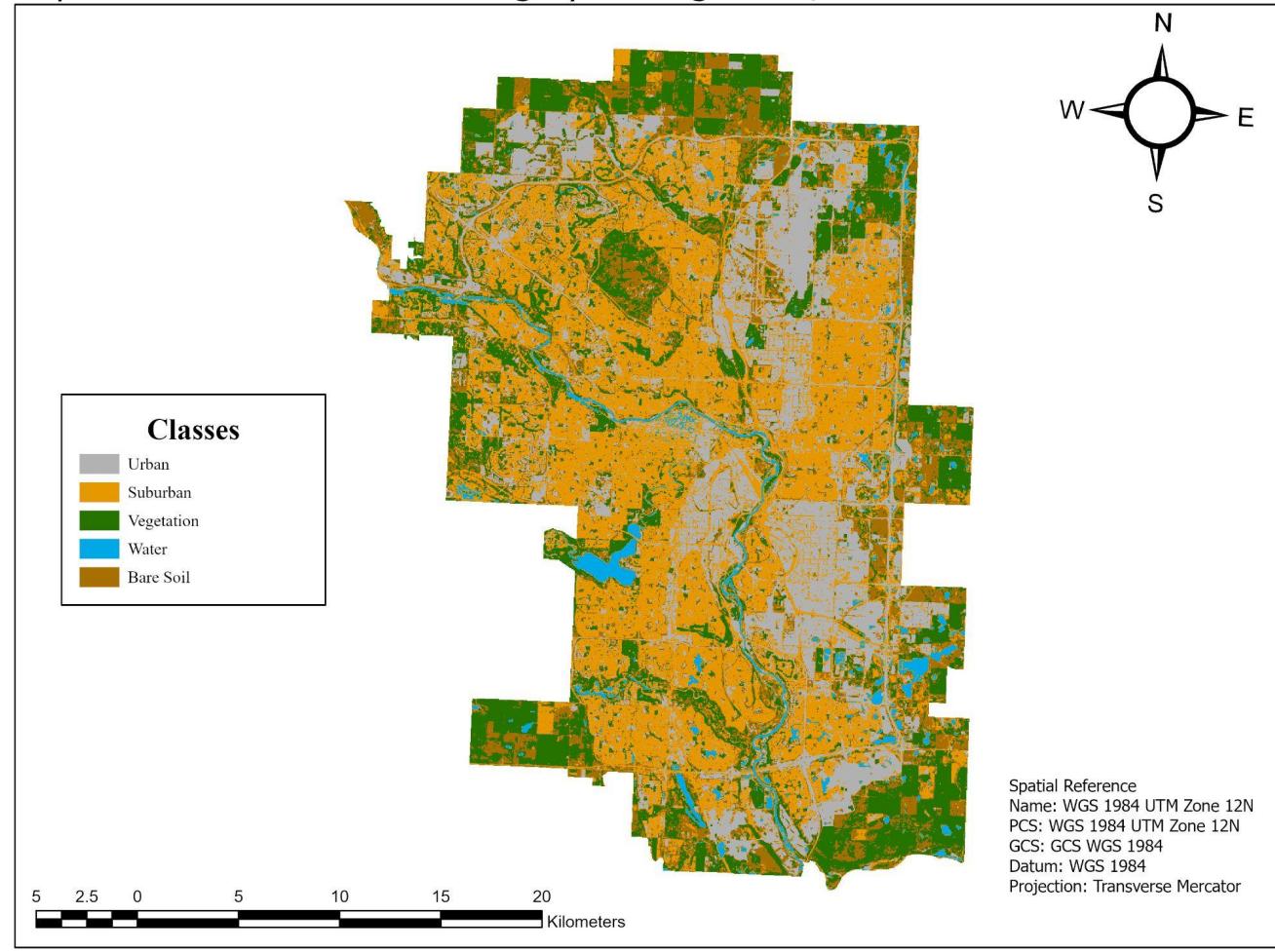
Workflow



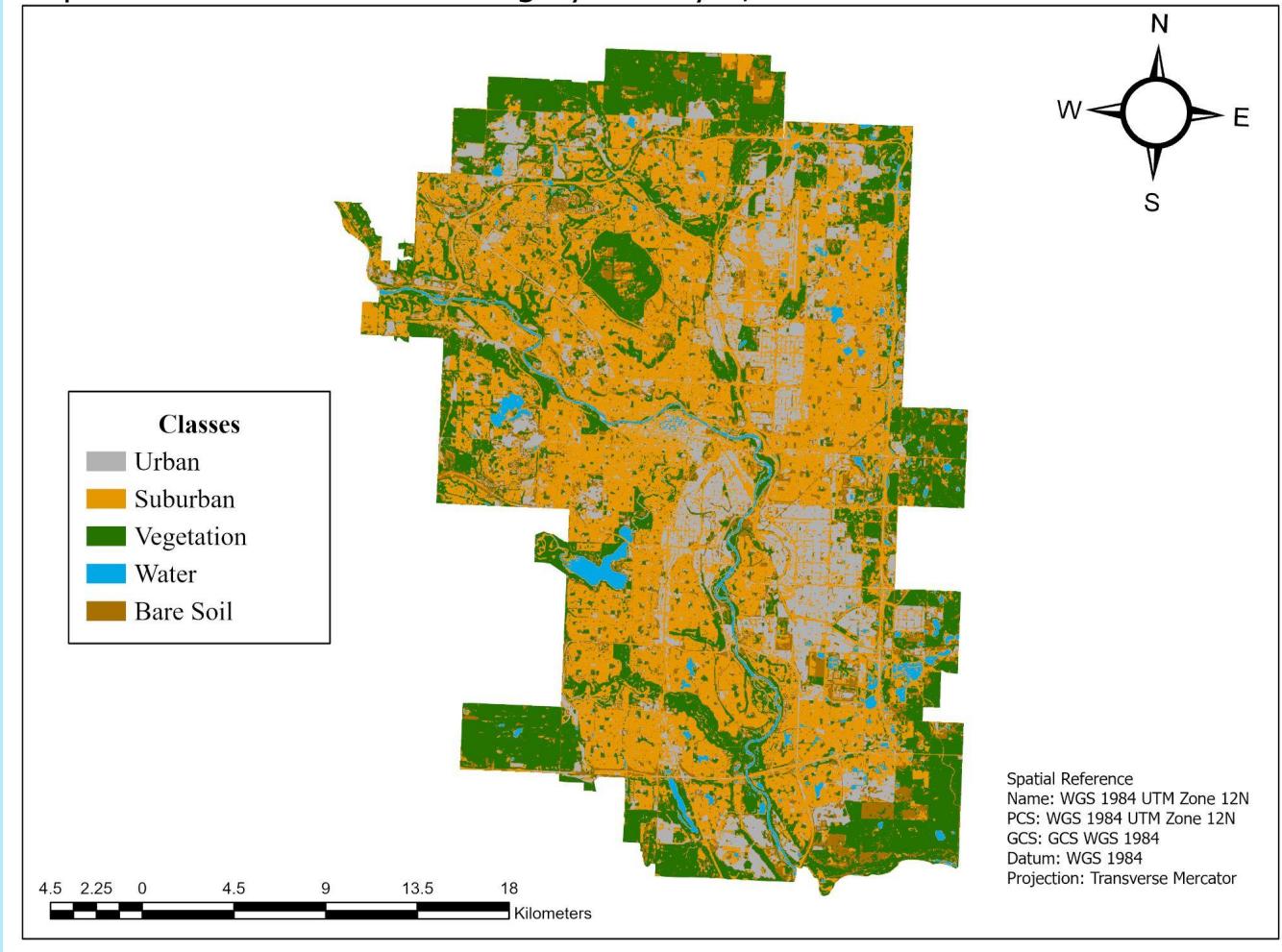
Results



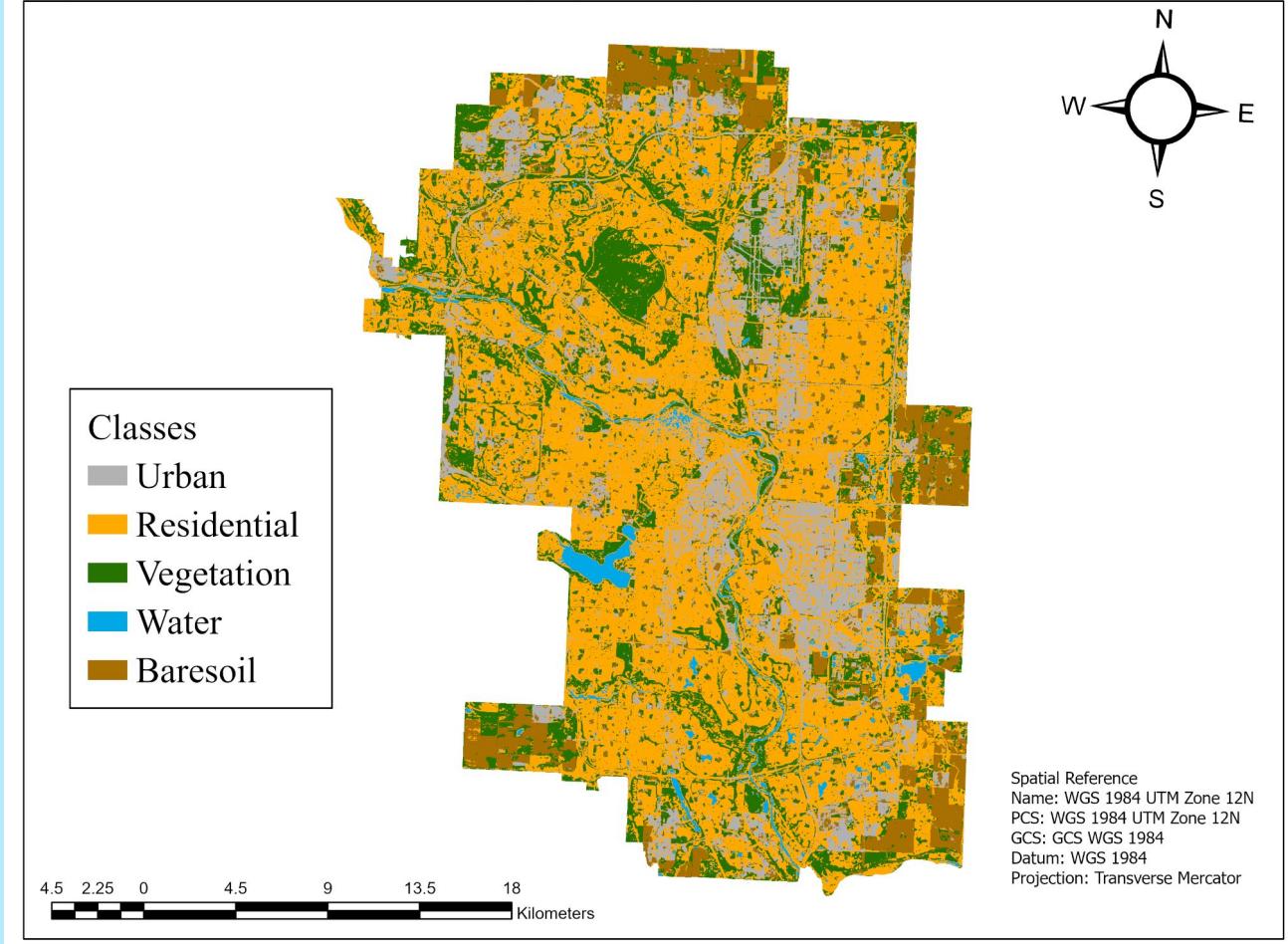
Supervised Classification of Calgary on August 24, 2013



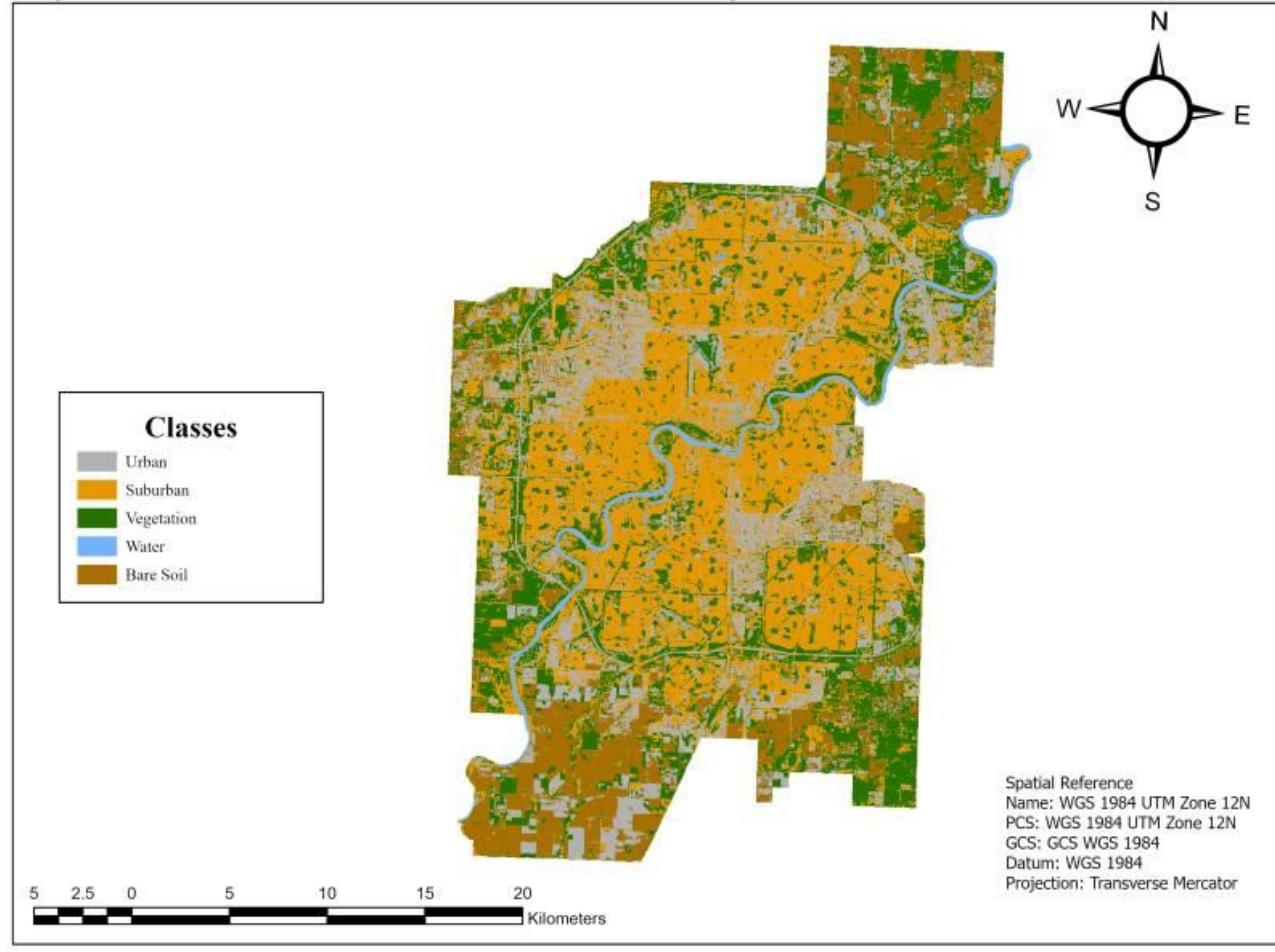
Supervised Classification of Calgary on July 2, 2017



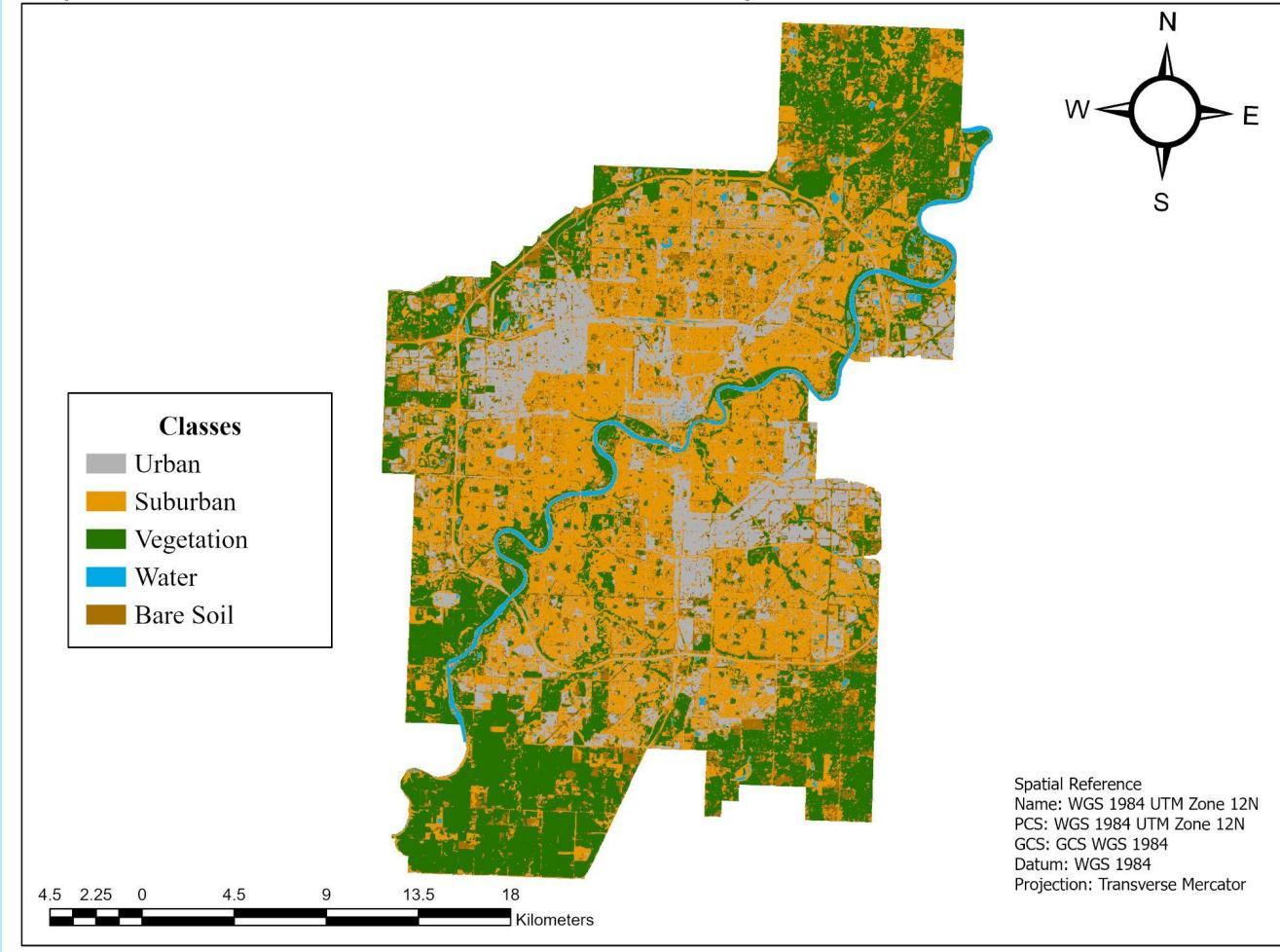
Supervised Classification of Calgary on September 26, 2022



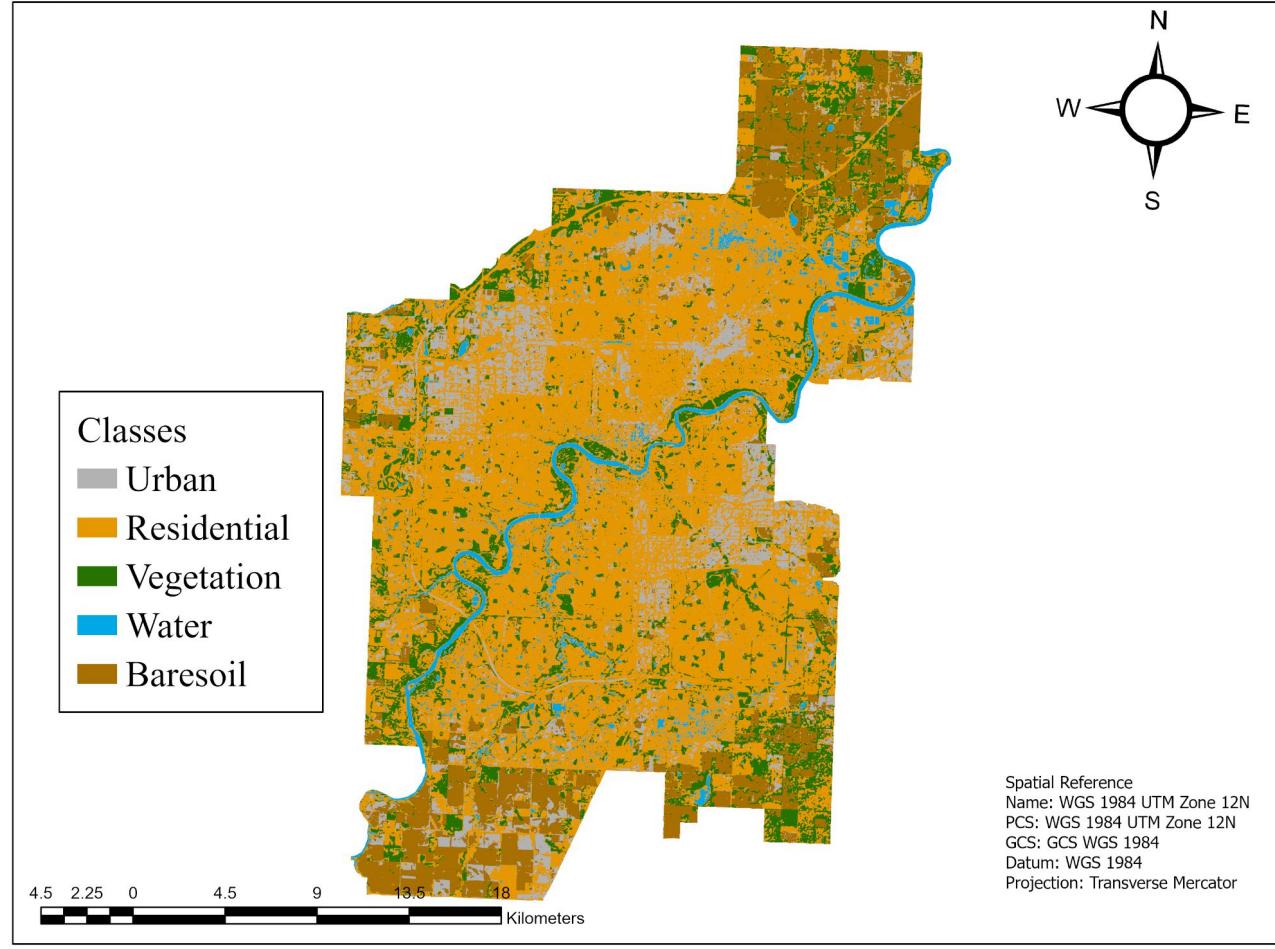
Supervised Classification of Edmonton on September 25, 2013



Supervised Classification of Edmonton on July 2, 2017

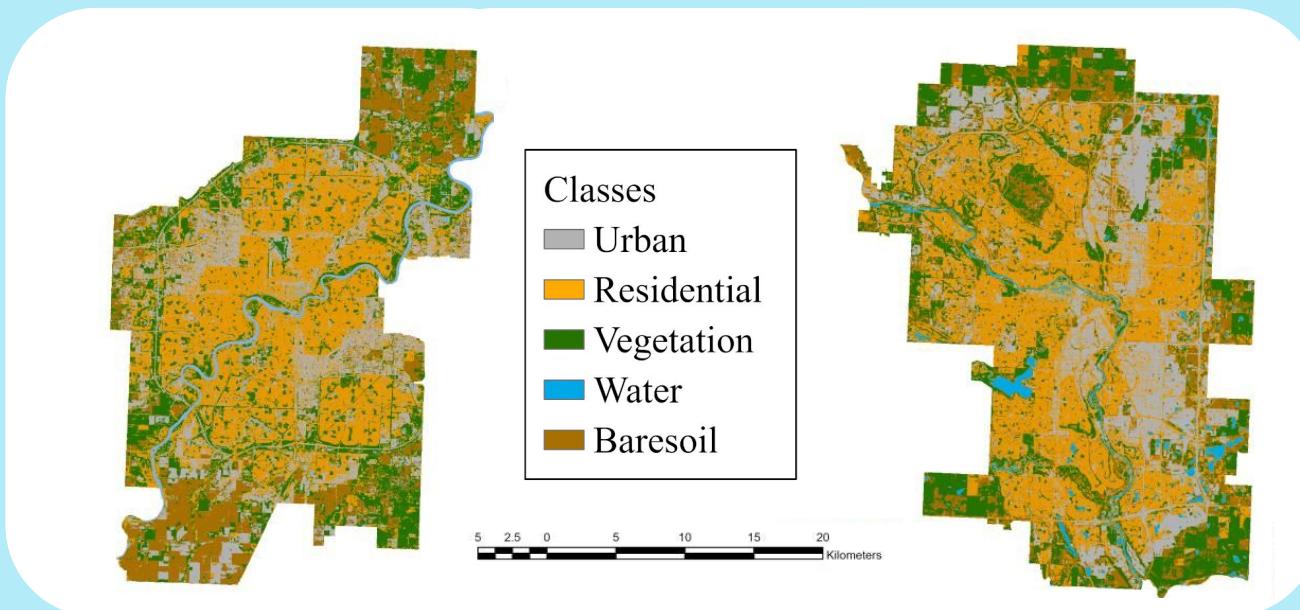


Supervised Classification of Edmonton on September 26, 2022

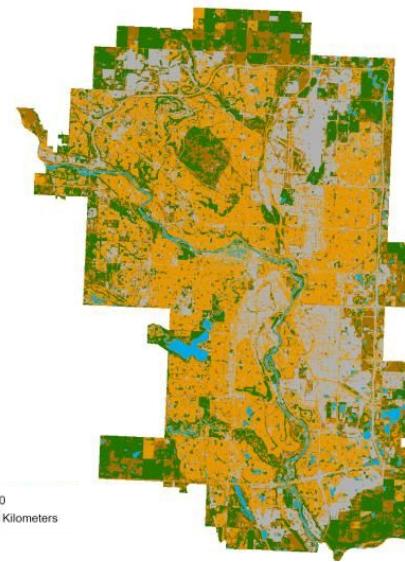


2013 Classified Maps

Edmonton

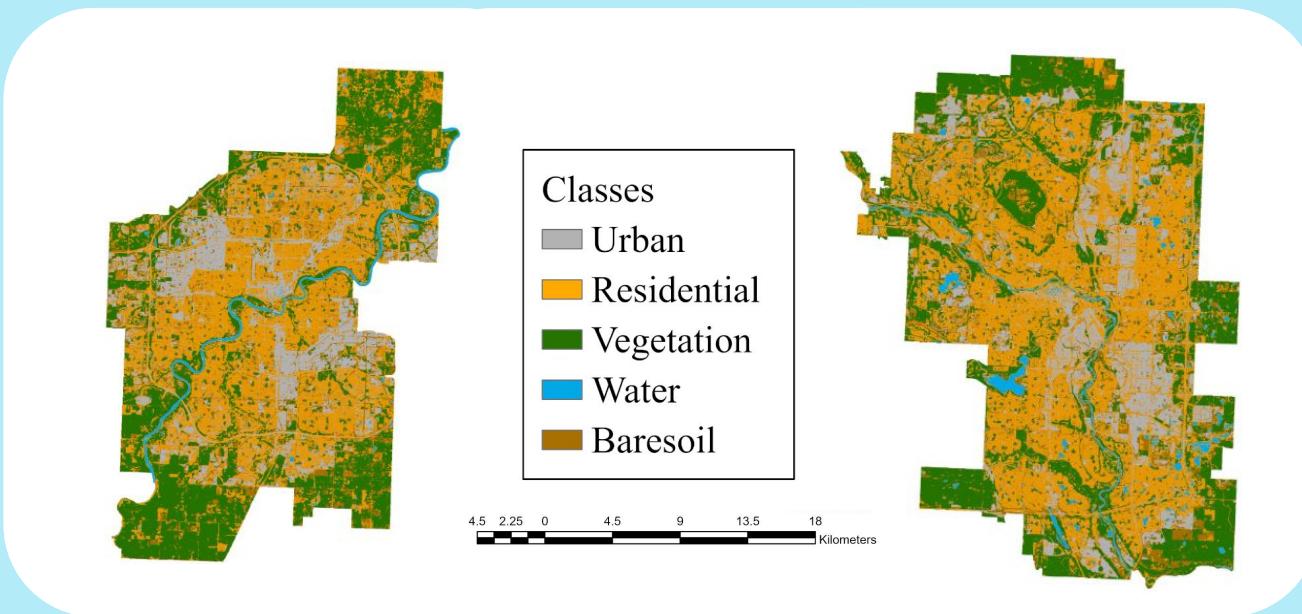


Calgary

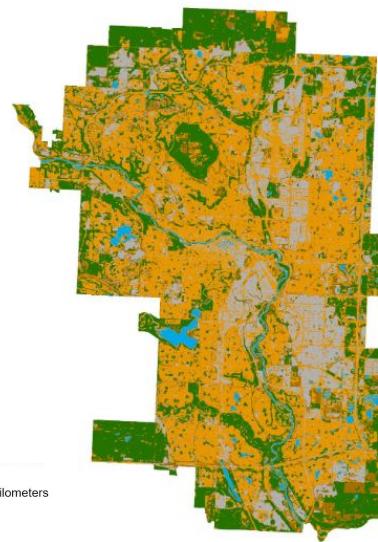


2017 Classified Maps

Edmonton

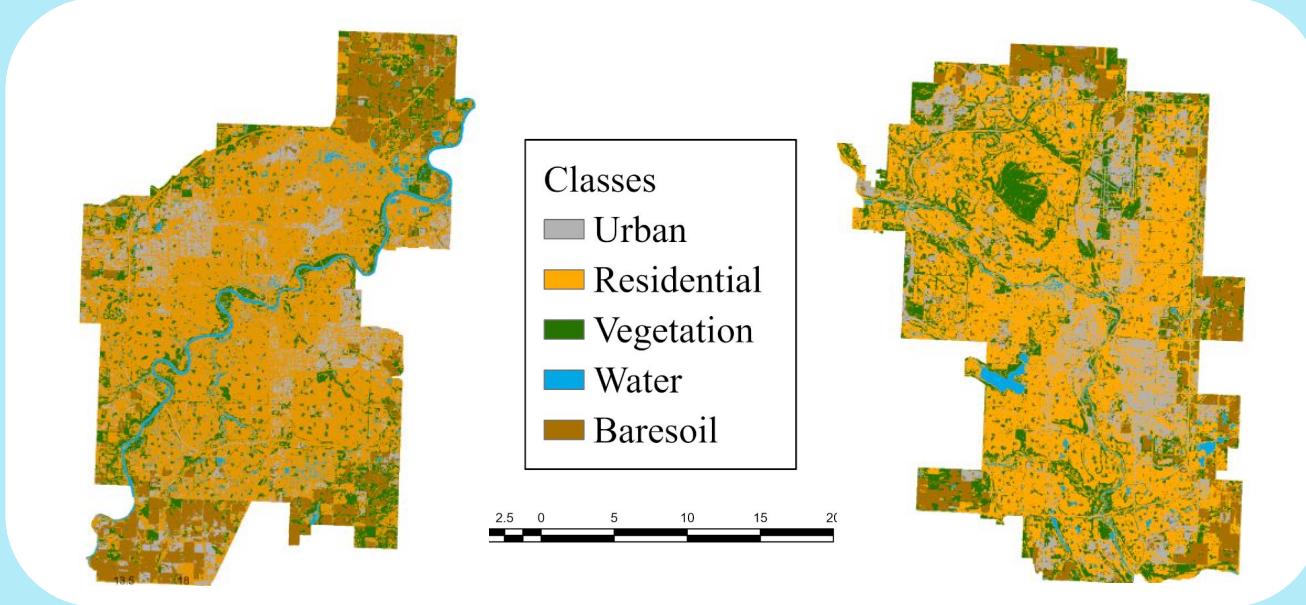


Calgary

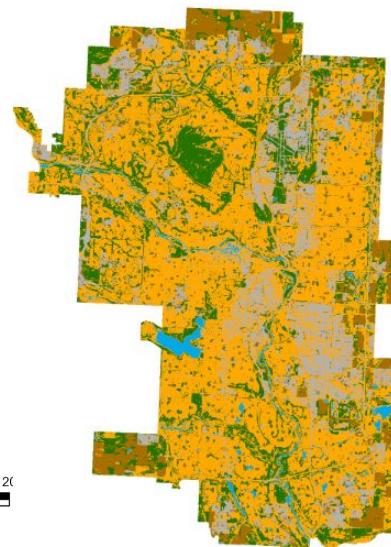


2022 Classified Maps

Edmonton

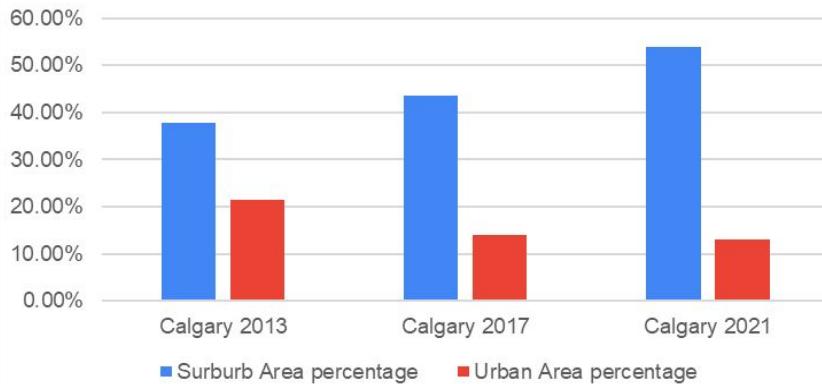


Calgary

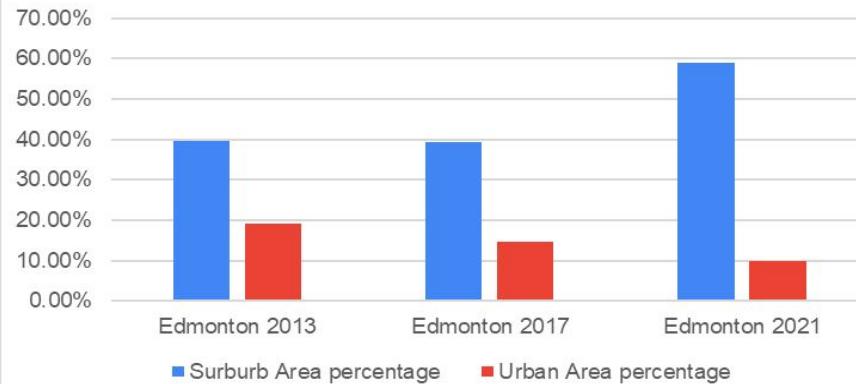


Urban and Suburban Growth

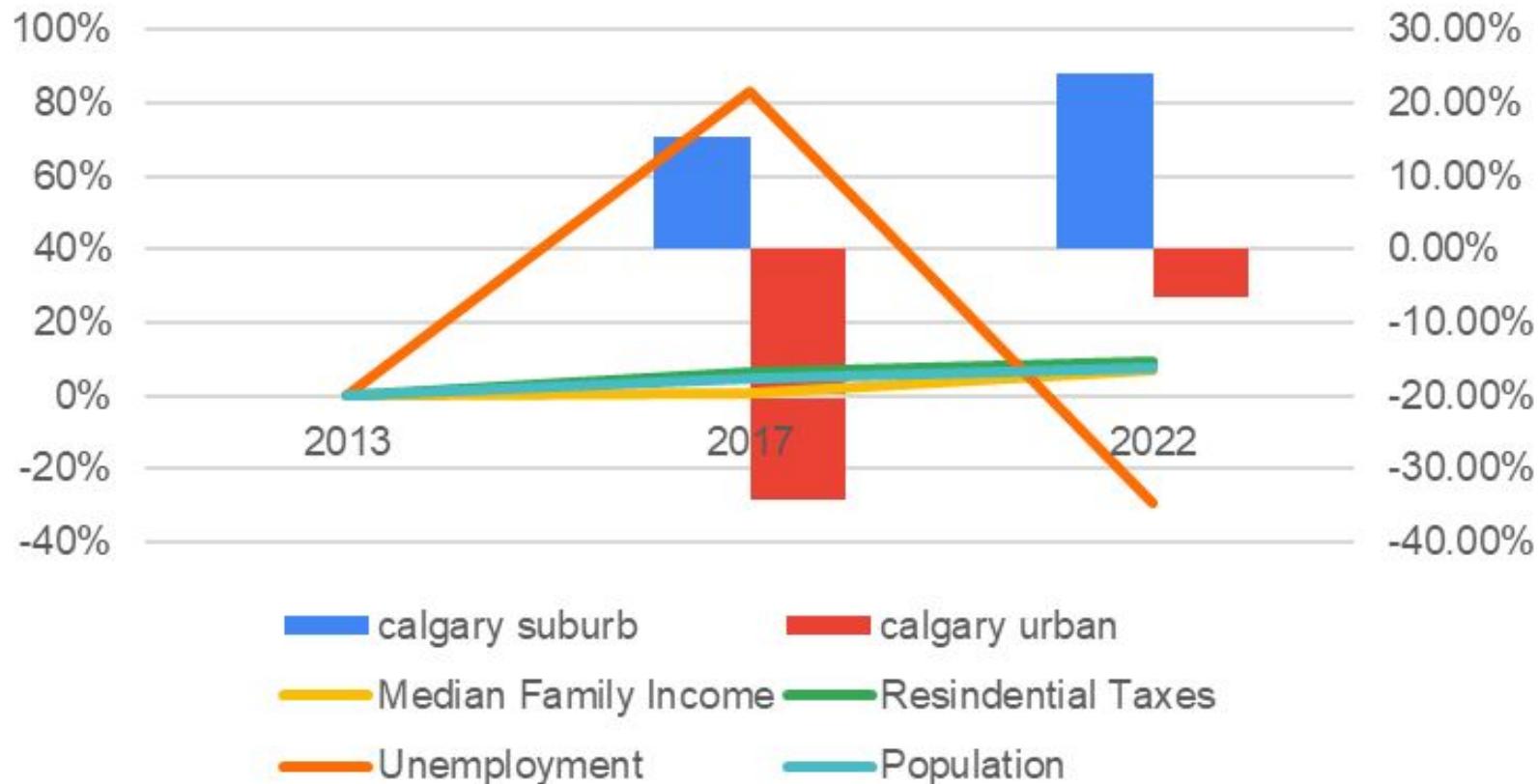
Percentage of Urban and Suburban Area in
Calgary, AB from 2013 to 2021



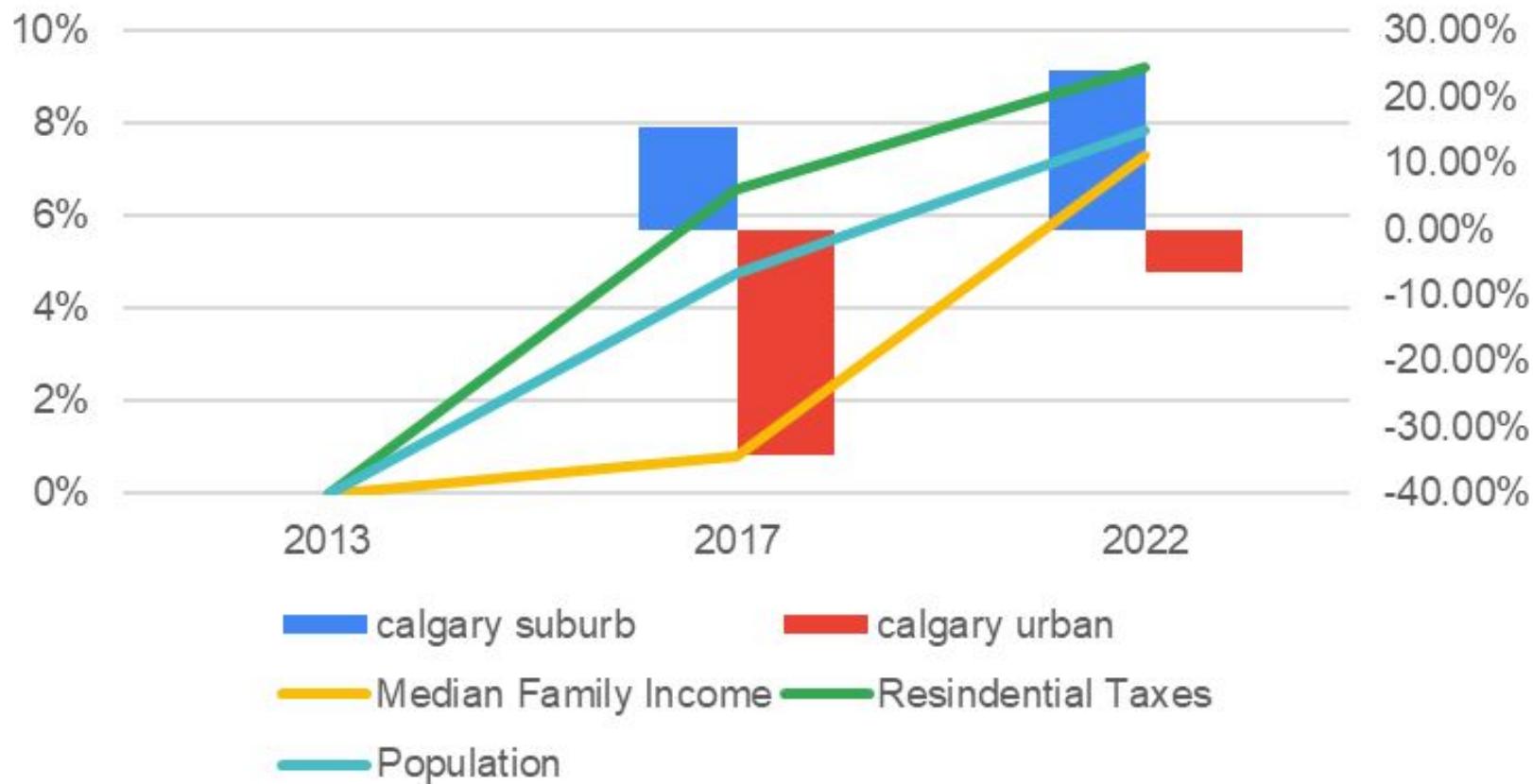
Percentage of Urban and Suburban Area in
Edmonton, AB from 2013 to 2021



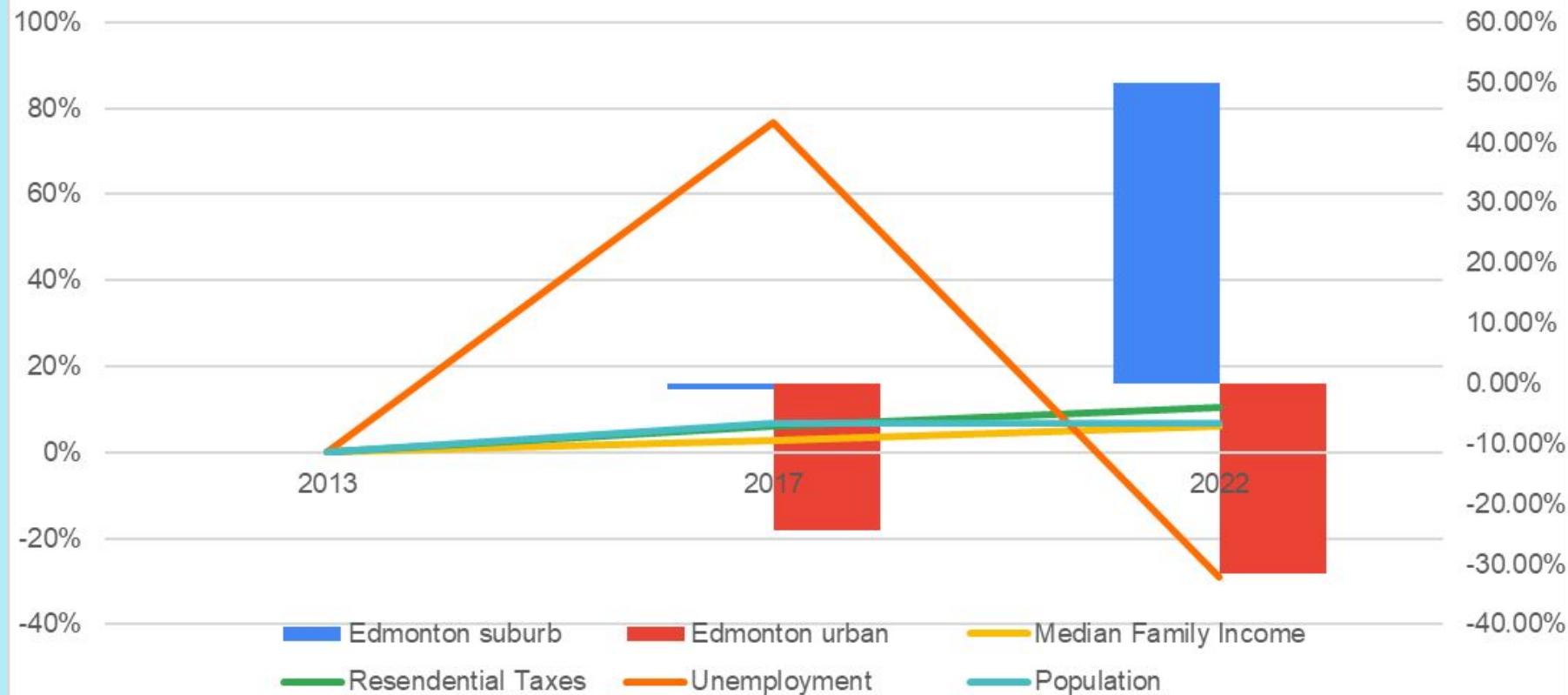
Calgary 2013 - 2022



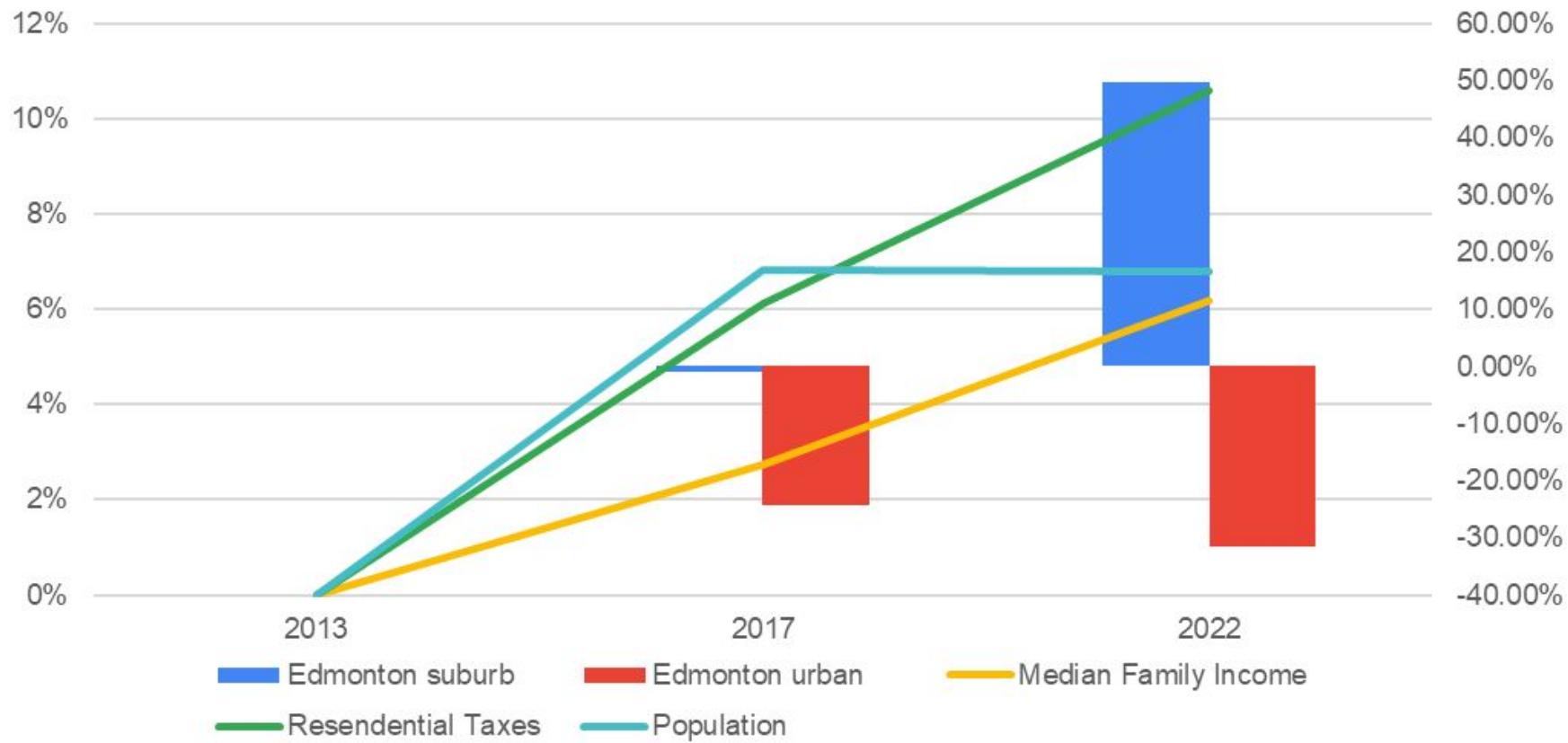
Calgary 2013 - 2022



Edmonton 2013-2022

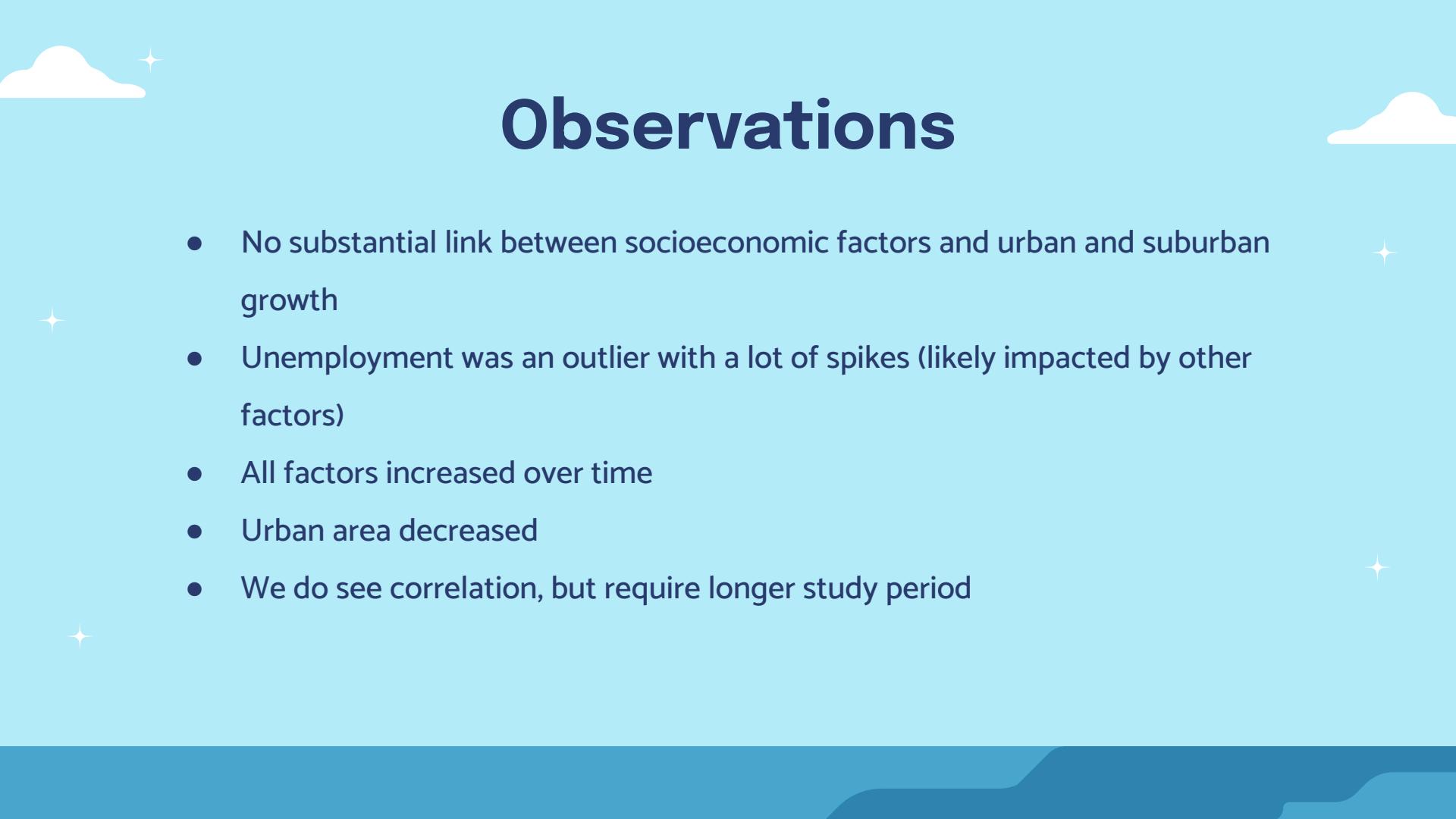


Edmonton 2013-2022



Data

	Urban Area	Suburban Area	Income	Population	Property Tax	Unemployment
Calgary (2013)	21.45%	37.69%	\$101,260	1,311,740	0.61%	4.80%
Calgary (2017)	14.11%	43.48%	\$102,060	1,374,450	0.65%	8.80%
Calgary (2022)	13.17%	53.91%	\$109,520	1,482,050	0.71%	6.20%
Edmonton (2013)	19.23%	39.72%	\$98,480	1,223,720	0.80%	4.70%
Edmonton (2017)	14.54%	39.38%	\$101,190	1,307,220	0.85%	8.30%
Edmonton (2022)	9.94%	59.02%	\$107,450	1,396,110	0.94%	5.90%



Observations

- No substantial link between socioeconomic factors and urban and suburban growth
- Unemployment was an outlier with a lot of spikes (likely impacted by other factors)
- All factors increased over time
- Urban area decreased
- We do see correlation, but require longer study period



Thank You

Questions?