Examining the relationship between cycling infrastructure and residential property prices in Kitchener Waterloo

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Executive summary

Professors at the University of Waterloo School of Planning (Dr. Brian Doucet, the Canada Research Chair in Urban Change and Social Inclusion in the School of Planning at the University of Waterloo; Dr. Dawn Cassandra Parker, a Professor in the School of Planning at the University of Waterloo and the lead of the Urban Growth and Change research group.) recently conducted a research project to investigate the relationship between cycling infrastructure and residential property prices in Waterloo Region. This project is a joint initiative of the Region of Waterloo, City of Cambridge, City of Waterloo and City of Kitchener, in cooperation with the University of Waterloo's Planning Department.

There is a commonly held myth that bike lanes will reduce local property values. The local community may fear changes of streets or loss of road-side parking space. This myth is part of an often vocal 'Bikelash' – resistance to cycling infrastructure. The project seeks to understand to what extent cycling infrastructure is associated with changes in residential property values. It uses a mixed-method approach, including the qualitative approach through interviewing realtors and developers and the quantitative approach through building statistical models. This briefing mainly covers the findings from the quantitative study conducted by Dr. Dawn Parker and her former students Yu Huang and Devin Feng.

This research uses housing sales data provided by MPAC and Teranet under a research agreement with the University of Waterloo. The dataset includes 13,363 single-family housing transactions and 4,326 condominium housing transactions from Jan 2013 to Mar 2018 in the City of Kitchener. We consider three major types of cycling infrastructure: (1) on-road bike lanes (or painted bike lanes, excluding sharrows); (2) multi-use trails (or multi-purpose trails); and (3) separated or protected bike lanes. The models also control for the impacts of other factors, such as green space and transit facilities. The findings show that cycling infrastructure was not associated with reduced property values for condos or single-family houses. For condos, both on-road bike lanes and multi-use trails are associated with higher sale prices. No evidence shows that cycling infrastructure adjacent to single-family homes reduces property values. These findings help inform the local community of the true relationship between cycling infrastructure and property values and lower the resistance faced by municipalities when making cycling infrastructure improvements. In addition, the research finds strong evidence of the value of urban trees. Thus, any development of on-road or separated cycling infrastructure that sacrifices mature trees should be carefully considered.

Key findings

Uneven access to cycling infrastructure

At the time of the study, Kitchener had good coverage of open space and multi-use trails across the City, but not many on-road bike lanes and very few separated bike lanes. The cycling

infrastructure across the city was often present in isolated segments, without connections that would ensure a full trip could be completed via cycling infrastructure. The Kitchener urban core had less cycling infrastructure compared to the suburbs during the study period. This difference can be explained in part by the prevalence of older, narrower streets, which may not have room for cycling infrastructure. Therefore, access to various forms of cycling infrastructure across the city is uneven. During the time of this study, the Kitchener cycling infrastructure was recognized to be sparse and not well connected. (It is important to note that with the newly approved downtown cycling grid, cycling infrastructure access in the core will increase dramatically.)

In particular, while access to on-road bike lanes is quite variable, access to separated bike lanes is quite low. 82% of single-family house sales across the City did not have access to separated bike lanes within 400 meters, 88% for house sales in the core; 76% of condo sales lacked access to separated bike lanes within 400 meters; 86% for condo sales in the urban core. However, access to multi-use trails is quite high, where only 9% of single-family house sales did not have access to multi-use trails within 400 meters and 7% for condo sales.

Condo buyers appear to value on-road bike lanes and multi-use trails

Our research shows that condo values tend to be higher in locations with higher urban transit-oriented environments, including access to transit and alternative transportation. The research finds that condo prices are positively associated with on-road bike lanes and multi-use trails nearby. On average, condo prices are 7% higher with 100 metres of on-road bike lanes, 5.8% higher between 100-200 meters, and 7.7% higher between 200-400 meters These results indicate that on-road bike lanes within 400 meters provide access value for condo buyers.

Multi-use trails are also associated with higher condo prices: 5.5% higher within 100 metres, 4.1% higher with 100-200 metres, and 3.6% higher with 200-400 metres. Not surprisingly, the values of multi-use trails are highest when they are closest to condos. Many multi-use trails in Kitchener are also green corridors, where windows or balconies overlooking trails may provide green amenities. These numbers may also represent high recreational cycling value, as well as commuting value.

Downtown core provides a significant price premium for condos

Prices of condos in the Kitchener urban core are 13.3% higher than condos in the suburban areas, where the urban core is defined as neighbourhoods with average home construction age before 1945. This new result demonstrates higher values associated with the urban core, beyond walking access to LRT stops. This is possibly due to the attractiveness of the tech hub and the transportation hub, and the concentration of urban amenities (such as libraries, restaurants, and cultural destinations).

Neutral impact of cycling facilities on single-family house sales

For single-family houses (including duplexes and semi-detached), most cycling facilities have no significant associations with sales prices; however, on-road bike lanes within 200-400 meters are associated with 1% higher house prices. Thus, no evidence shows that cycling infrastructure adjacent to single-family homes is associated with reduced property values. House buyers tend to place a much higher value on open space, including private yard and greenspace of the outdoor area. They may not cycle for commuting purposes, but they might also value the aesthetic or recreational value of cycling on multi-purpose trails or suburban greenways. The added value

might cancel the disamenity of having cycling facilities nearby, and thus the net impact becomes neutral.

Cumulative open space premium

This research finds cumulative open space premium for both condos and single-family houses with street trees and good tree canopy nearby, as well as bordering on open space. Our other research shows similar findings for both home sales and rentals.

For single-family sales, every 10% increase in the tree canopy within 100 meters of a home is associated with a 1.4% sales price increase, and 10 more trees within 100 meters with an additional 0.2%. Access to green space positively impacts house prices. Every 1 km^2 more green space accessible within an 800-meter radius is associated with 2% higher prices, and being adjacent to green space is associated with an additional 1% increase. Similar results are also found for condo sales.

Therefore, we strongly encourage developers and builders to take these open space and tree values into account in their site plans. A site plan that preserves existing mature trees can result in a significant sales premium, especially at the subdivision level, when open space adjacency, tree canopy, and individual tree values are all accounted for.

Transit service matters for property sale prices

This research also finds that bus transit service quality is positively associated with property sale prices, especially for condos. iXpress bus route service at the nearest bus stop is associated with 7.1% higher condo prices, and an additional bus route at the nearest bus stop further increases prices by 1.5%. These results indicate that iXpress bus routes play a role in local real estate markets – developers may perceive proximity as a feature demanded by their buyers, and on re-sale, these locations may sell for a premium. For single-family houses, as people may rely more on automobile transportation, the iXpress bus route does not have much impact on the sales prices, but one additional bus route is associated with 1.0% higher house prices. As the LRT was still under construction during the study period, we expect a better connection of bus transit with the LRT will provide an additional price premium to the nearby properties.

Conclusion

This research takes a quantitative approach to examine the relationship between active transportation and residential property values. The findings confirm that cycling infrastructure did not negatively impact property values. For condo buyers, our results support that buyers value the access to on-road bike lanes and multi-use trails nearby, and they prefer a more urban lifestyle and active transportation modes. Thus, proximity to nearby bike lanes or trails was positively associated with condo sales prices. For single-family house buyers, the impact of most cycling infrastructure did not impact the property sale prices. This research deconstructs the myth of bike lanes reducing local property values, which helps educate the public when concerns arise at public consultations. It will also help positively shape the discourse around active transportation in the media.

Again we note that the City of Kitchener had few separated bike lanes and lacked connected cycling network during the study period. Therefore, it is highly recommended that a follow-up

study be conducted later when more cycling facilities are installed, and the active transportation network is more integrated into the overall transit system.

We recommend that cities continue to invest in cycling infrastructure across the Region to meet growing demands for cycling and provide equitable access to active transportation in urban and suburban neighbourhoods. Also, the research finds strong evidence of the value of urban trees. Thus, any development of on-road or separated cycling infrastructure that sacrifices mature trees should be carefully considered.