

Case-in-Point 2023



Credit: Stéphane Dorge @CoolStreetsWPG

CURBING THE SPEED LIMIT:

Lessons Learned from the City of Winnipeg's Traffic Calming Pilot Project *Paint the Pavement*

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Abstract

Municipalities are creating strategies to reduce traffic-related fatalities and serious injuries. The concept, otherwise known as Vision Zero places responsibility on solutions involving speeds, road design, and vehicles. What was once just for motor vehicles are now becoming shared spaces with a variety of users. The challenge is changing roads to enforce slower motor vehicle speeds. The City of Winnipeg discovered motor vehicles were not following the reduced speed limits

on Churchill Drive, Kilkenny Drive, Lyndale Drive, and Wellington Crescent. The City painted murals on these roads to simulate physical traffic calming interventions. Data showed the pilot project had little impact on the speeds of motor vehicles. However, thoughtful road design and bundling traffic calming measures together could make a significant impact on speeds. Moving forward, the City continues to study these four roads to develop future permanent traffic calming recommendations.

1.0 Background & Context

Canadian cities like Victoria, Ottawa, and Toronto are reducing posted speed limits on certain roads (City of Toronto, 2019; CTV News Vancouver Island et al., 2023; Fleming, 2022). Extensive research concludes that the chance of injury or death increases at speeds higher than 30 km/h (City of Toronto, 2017; Global Road Safety Partnership, 2008; Love30ca, n.d.). In response, groups are advocating for speed limit reductions on local roads. According to the Green Action Centre, “creating streets that are safe is essential in supporting a shift to healthy, active, and sustainable transportation” (Traffic Calming 101: Safe Transportation Systems | Green Action Centre, n.d.).

Safer streets can be designed through physical design changes and lower speed limits. The typical street is designed to be faster and safer for vehicular drivers (Pinder,

2021). Hence, roadways are designed to have as few stimuli as possible because it requires less attention to the environment. When people have fewer objects to focus on, they drive faster. Deeper setbacks and wider road lanes are two characteristics that encourage faster speeds. Instead of focusing on only motor vehicles, our street designs can help reinforce the desired context of the roadway and support multiple users (Pinder, 2021).

A challenge to road design changes or modifications is the longevity of roads and the associated costs of completing each project. Small-scale geometric design changes such as vertical deflections can often occur at any time and do not necessarily require a large road renewal project to implement. Larger scale geometric adjustments, in particular, those that may affect drainage, such as a road narrowing through the addition of a median or boulevard widening are often more efficient to implement as part of a road rehabilitation project. Additional solutions can be implemented for road design changes that are cost-effective and easy to implement without requiring a larger road rehabilitation project.

Temporary or permanent traffic calming interventions are examples of possible design changes to roadways that lower vehicle speeds and/or volumes. Some examples of these treatments are lane narrowing, medians and refuge islands, speed humps, speed tables, mini roundabouts, and modified pavement materials and appearances. Temporary traffic calming interventions are effective, affordable, adaptable, quick to implement, and promote sustainable and healthy transportation (Traffic Calming 101: Safe Transportation Systems | Green Action Centre, n.d.).

The Enhanced Summer Bike Route (ESBR) program was first established by the City of Winnipeg in the spring of 2020 as a pandemic response measure at the time called Open



Figure 1: Sherbrook St. (above) has features such as trees, street furnishing, a protected bike lane, and zero-foot setbacks promoting lower speeds.
Figure 2: Waverly St. (below) has deep setbacks and a wide field of view for motorists that promotes higher vehicle speeds.
Credit: Google Earth

Streets. The ESBR program was built off the Sunday/Holiday Bike Route program that has operated on four routes in Winnipeg for decades. The seasonal program prioritizes cycling on specific streets by temporarily reducing speed limits of 30 km/h and various temporary traffic calming measures such as barricades and educational signage, motor vehicle travel limited to one block, road closures, and/or turn restrictions. Since the 2022 summer program, 10 previous ESBRs are recommended to become permanent “neighbourhood greenways” with a 30 km/h posted speed limit and permanent physical traffic calming interventions going forward in 2023-2024.

The interventions Public Works installed were based on feedback, traffic/cycling data and counts. In May of 2022, data revealed that motor vehicles were still moving too fast at some locations on the ESBR streets, including Churchill Drive, Kilkenny Drive, Lyndale Drive, and Wellington Crescent. The City decided to implement additional traffic calming interventions on these higher-speed streets.



Figure 3: Mural painted on Lyndale Drive. Artist: Matt Bernard
Credit: Stéphane Dorge @CoolStreetsWPG

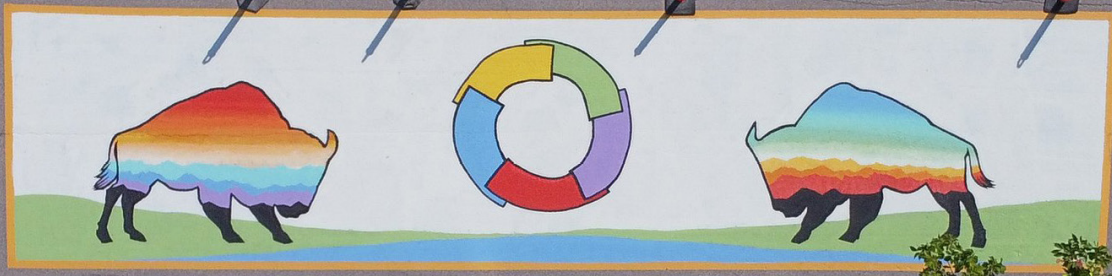


Figure 4: Mural painted on Lyndale Drive. Artist: Emilie Lemay Credit: Stéphane Dorge @CoolStreetsWPG

2.0 Facts of the Case

Research supports painted streets pavement as an effective temporary or trial strategy to improve the safety of non-vehicle road users (Asphalt Art | Bloomberg Philanthropies, n.d.) by slowing down vehicular traffic (Catherine Thompson, 2017; Maus, 2019). The City of Winnipeg initiated the Paint the Pavement pilot project in the summer of 2022 in response to four ESBRS that still had measured vehicle speeds over 40 km/h. The goals of the Paint the Pavement program were to provide traffic calming measures, celebrate local artists, and promote positivity in the community on Churchill Drive, Kilkenny Drive, Lyndale Drive, and Wellington Crescent (J. Berezowsky, personal communication, 2022). This pilot project aligned with multiple policy and planning documents such as OurWinnipeg and Complete Communities.

Paint the Pavement involved staff from Public Works, and two local community organizations, Centre Culturel Franco-Manitobain and Cool Streets Winnipeg. The Public Service decided on the location and dimensions of the bump-out, curb extensions, and median extensions, which were placed along straightaways and intersections. The dimensions were designed to mimic “approximate physical traffic calming measures to narrow the roadway” (Patman, 2023). The Centre Culturel Franco-

Manitobain and Cool Streets Winnipeg were partnered to commission local artists to paint these temporary traffic calming outlines. In the end, 15 local artists painted 20 murals at 16 sites on Churchill Drive, Kilkenny Drive Lyndale Drive, and Wellington Crescent.

One significant factor when testing pilot projects is to measure the results. Paint the Pavement was measured by answering three questions: Did motor vehicles slow down? Did the paint do its job? What does the community think?



Figure 5: A mural on Churchill Drive. Artist: Takashi Iwasaki. Credit: Stéphane Dorge @CoolStreetsWPG

3.0 Outcomes

To answer the questions above, the Public Service collected speed data, traffic volumes through short-term counts, and public feedback through an online survey. Count stations were also used to gather cyclist counts. The daily traffic volumes were collected in the spring, summer, and fall. The online survey was open from November 17 to December 8, 2022. It was promoted by City news releases, social media, emails, and postcards to area residents. The outcomes from Paint the Pavement are presented in two sections: traffic data and survey feedback.

Traffic Data

The traffic and speed data were collected from Churchill Drive, Kilkenny Drive, Lyndale Drive, and Wellington Crescent. Table 1 shows the four streets and their measured speed. The findings show that Paint the Pavement did not reduce the speed of motor vehicles. According to the data, the 85th percentile speed on all four streets was a minimum of 10 km/h over the posted speed limit.

Survey Feedback

The ESBR survey had the same base questions for each route. Additional questions were asked if the route had painted murals on it. According to the on-street response rates, people living on Churchill Drive, Kilkenny Drive, Lyndale Drive, and Wellington Crescent were some of the most vocal of all residents. The feedback survey received 1,311 responses for all four routes and 83% of participants said they noticed the artwork. Interestingly, 59% of the respondents felt the Paint the Pavement pilot project added character to the street. This however was not the intended primary purpose. 23% of the respondents said it distracted the drivers; 20% said it slowed vehicles down; and 21% said it had no effect at all. The option for a long-answer response was provided to respondents. One common response from the public considered the pilot project a waste of money. Many other respondents thought the intervention made the road more dangerous.

Table 1: Comparison of the posted speeds and the 85th percentile speed on the four streets (May and September).

Street	ESBR Posted Speed	85th Percentile Speed in May 2022	85th Percentile Speed in September 2022
Churchill Drive	30 km/h	48 km/h	47 km/h
Kilkenny Drive	30 km/h	43 km/h	42 km/h
Lyndale Drive	30 km/h	42 km/h	44 km/h
Wellington Crescent	30 km/h	45 km/h	40 km/h

4.0 Lessons Learned

Thoughtful Road Design

The results of the Paint the Pavement pilot project demonstrate changing the posted speed limit alone does not always encourage a change in travel speed. The study streets are wider collector roads that are not designed to self-enforce lower speeds (Patman, 2023). The widths of Churchill Drive, Kilkenny Drive, Lyndale Drive, and Wellington Crescent ranged 7.5-12m. The streets also have wide clear zones and deep setbacks between the houses and the road. Thoughtful and physical road design changes may be required to self-enforce lower speed limits. The painted murals are examples of low-cost interventions compared to building a physical concrete curb or median. Effective design changes need to be considered with the municipal budget and capacity due to high construction costs. New and rebuilt roads that do not create speed problems can be solved by implementing new street design standards. One approach for municipalities is to use a phased approach that prioritizes high-risk roads first when working with limited or deficit budgets.



Figure 6: Houses are set back further from the street on Kilkenny Drive. Artist: Taylor McArthur
Credit: Stéphane Dorge @CoolStreetsWPG

Public feedback from the surveys also commented on the relationship between motor vehicles and other users' behaviours on the road. Some feedback mentioned that cyclists were pushed over to the shoulder of

the road while using the streets. Pedestrians had these same comments. The absence of sidewalks on Churchill Drive, Lyndale Drive, and Kilkenny Drive forced pedestrians to walk off the road or into the middle of the road when vehicles passed. Therefore, road design should include a range of intended users such as vehicles, pedestrians, and cyclists.



Figure 7: Plastic delineator wands are being used in addition to painted extended curbs in Portland, Oregon.
Credit: J. Maus/BikePortland

The More Traffic Calming Techniques, The Better

Future projects should consider better signage and poly-posts to protect the artwork and provide vertical elements to enhance the visibility of the treatment. The vertical signage acts as a visual barrier and prevents vehicles from driving over the murals. Respondents had concerns about how the murals wore off quickly. Physical markers also would prevent the murals from fading off the road. As a result, time and money would be saved. A similar project in Portland, Oregon demonstrated how murals, crossing treatment, and plastic delineator wands were used to narrow the intersection in one neighbourhood (Maus, 2019). Furthermore, the murals were added to long streets with gradual turns, a characteristic that encourages fast speeds. The distance between the murals ranged from 70 to 300 metres which allowed cars to speed up after passing a mural. Grouping the installations closer together could achieve a more consistent traffic calming effect.

Paint the Pavement is a quality example of how pilot projects can be implemented, tested, and collect public feedback even if it was not successful. For the 2023 ESBP season, the posted speed limit on Churchill Drive, Lyndale Drive, and Wellington Crescent will be 30 km/h while Kilkenny Drive will be 40km/h. Winnipeg City Council has also directed the Public Service to prioritize and study ways to enact infrastructure modifications to reduce speeds along these routes. The results from this pilot project confirm physical interventions are required to decrease traffic speeds and volumes. ‘Bundling’ temporary and permanent traffic calming interventions should be a common approach for municipalities moving forward.

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