Blackfriar's Bridge: A Treasure We Don’t Want to Lose

Recommendion: Vote for Option 3

If we want Blackfriars Bridge to survive, City Council needs to ban all vehicular traffic on it. This may seem extreme, but there is scientific reasoning to support this recommendation (see the explanation below, following the Introduction).

Introduction

We all know that Blackfriars Bridge is special. If any other bridge in London currently carrying vehicular traffic needed replacement, no one would mind if that bridge was replaced with a newer, more modern one that didn't look anything like the original. In fact, they would welcome it, especially if the new bridge was bigger and wider.

But we know that is not the case with Blackfriars Bridge. The city closed the bridge to vehicular traffic in 2013, cut it in half in 2017, and restored it over the next year. When the bridge was lovingly reassembled in 2018, it wasn't bigger and wider. It came back the same as before because people loved it the way it was. Photographed endlessly, Blackfriars Bridge has come to represent London. Recently, the province agreed, designating it as a historic structure under Part IV of the Ontario Heritage Act.

Built in 1875, Blackfriars Bridge was designed to carry horses, buggies, and people on foot. Motor vehicle traffic came later and the destruction it caused to the bridge was the main reason for the vehicular restrictions in 2013 and refurbishment in 2017. So why would we even think of letting bridge-destroying motor vehicle traffic back on Blackfriars Bridge when we know it was the main cause of its deterioration the first time around?

The Science Behind Road Surface Destruction

If we double the weight of a vehicle, it doubles the damage to the road surface, right?

WRONG!

So, just how much damage do motor vehicles cause to our road surfaces compared to bicycles?

According to scientific calculations, it would take 160,000 bicycle trips to cause as much damage to the road surface as a single car **driving down the same road JUST ONCE**!

What????

According to scientists in the USA, the greater the axle load of a vehicle, the greater the damage to the road caused by the motor vehicle (to the fourth power).

What does that mean in plain English?

We're gonna need an example

Well, it turns out that State Highway officials in Illinois already figured this out way back in the 1950s in a series of experiments where they paved six loops, each with two lanes, all of varying thicknesses, and then had trucks of different axle loads drive on those roads almost continuously FOR TWO YEARS STRAIGHT!

And what did they find?

That the service life of the road is reduced by approximately the fourth power of the axle load.

Meaning that heavy vehicles absolutely DESTROY roads compared to lighter ones. It's called the **Fourth Power Law** and here is how it works.

Prepare to have your mind blown!

Let's start our calculations by comparing a truck and a car, where the load per axle is 10 times greater from the truck compared to that of the car

Even though the LOAD on the road from one axle (2 wheels) is 10 times greater for a truck than for a car, the fourth power law says that the STRESS (or damage) to the road is 10, raised to the power of 4.

10^4 = 10x10x10x10 = 10,000 times as large as a **car**

That means that even though the axle load from the truck is 10 times greater than for the car, the damage to the road is 10,000 times worse.

It's amazing that our roads have lasted as long as they have. Fortunately, trucks are not allowed on Blackfriars Bridge, only cars under 3 tonnes (6,000 lbs).

So, how does a car compare to a bicycle?

The average weight of a car is about 4,000 lbs. Compared to a 200 lb cyclist, a car is approximately 20 times heavier.

Doing the math: 20^4 = 20x20x20x20 = 160,000 times as large. 160,000 to 1

That means that even though the axle load for a car is 20 times greater than for a bicycle, the damage to the road is 160,000 times worse.

That means that you could travel on a road 160,000 times by bicycle before you would do as much damage to the same road as 1 trip by car.

From this it can be deduced that a large part of the damage in the streets is caused by heavy motor vehicles compared to the damage caused by lighter vehicles.

Those numbers are astounding! Clearly we can see that with no cars on the Blackfriars Bridge, it will last much, much longer!

If we want to save Blackfriars Bridge, we can't afford to have bridge-destroying cars anywhere near this structure. Unless, of course we want to have to go through the same refurbishment of the bridge in the future as we did in 2017.

Conclusion

Vehicles obviously found a way to bypass Blackfriars Bridge during the approximately seven years that the City of London closed Blackfriars Bridge to vehicular traffic (from May 13, 2013, to Dec 1, 2018, and from April 2020 to Nov 8, 2021). We know that drivers were slightly inconvenienced, but hey, saving the bridge was worth it.

In fact, according to the Dillon Report commissioned by the City of London, eastbound vehicle traffic on the bridge has already decreased by 65% since 2013. Their report showed that the peak number of cars travelling eastbound on Blackfriars Bridge on a weekday AM pre-2013 was 400 per hour. On Sept 15, 2022, it was reduced to 141 per hour.

This is Council's opportunity to decrease the number of cars per hour on the bridge down to zero.

We've all seen the math now. We know what happens to a bridge when we let cars on it. Do we really want history to repeat itself? Is driver convenience really worth destroying the bridge we all love?

The Dillon Report shows that there are viable alternatives to the Blackfriars Bridge (Riverside Drive and Oxford Street). Surely drivers can use those roads again to bypass the bridge. Saving Blackfriars Bridge should trump driver convenience. Our heads support what our hearts tell us: cars don't belong on this bridge.

Option 3 is the best option to save Blackfriars Bridge. It is also aligned with the city's official plan. As it says in Direction #8 of The London Plan: "Make wise planning decisions." We urge you to do just that.

Make the citizens of London proud. Save Blackfriars Bridge. Give the road back to pedestrians and cyclists. Make a wise planning decision. **Vote for Option 3.**

Sincerely,

Lawrence Durham

Resident of Ward 7 and frequent user of Blackfriars Bridge (by bicycle)