

Grand Span: Builders of Windsor's Gordie Howe bridge are just metres away from scoring a key goal

By Ivan Semeniuk

The design of the Gordie Howe International Bridge is meant to evoke the bend of a hockey stick making a slap shot. But as the mammoth project nears its biggest milestone to date, a more apt comparison would be Michelangelo's *The Creation of Adam* – or perhaps the movie poster for *E.T.*

For nearly six years, the largest bridge ever built between Canada and the United States has grown in two separate parts, extending toward each other from opposite banks of the Detroit River. In recent weeks, the vast and gracile structure has come to resemble a pair of outstretched fingers that are almost but not quite touching. Visible from miles around, the scene embodies drama and demands closure.

Now, the moment of contact is close at hand.

By late May, the space separating the two halves of the 2.5-kilometre-long bridge had shrunk to a mere 11 metres. Project managers say the final section of bridge deck destined to fill that gap will be bolted into place before the end of June.

When that feat is accomplished, the bridge will form a continuous span over the majestic waterway that flows between Detroit and Windsor, Ontario. While the bridge is still more than a year away from opening, the imminent union of its two halves signals a new reality. For the first time in nearly a century, North America's busiest border crossing is expanding – and it is doing so in grand style.

Paid for entirely by the Canadian government, the \$6.4-billion infrastructure project promises to improve the flow of people and goods in a region that has been economically integrated since before the existence of either Canada or the United States. But beyond its practical value, the bridge has already delivered something the river has not seen in more than a generation: a sense of sheer, architectural awe.

"This is our passion," said Jaime Castro-Maier, lead engineer for the Canadian side of the project, whose bridge-building résumé spans five continents. "I go chasing these types of bridges because I take joy in them. Many of my colleagues do the same."

This part of the process, in which the bridge deck grows segment by segment from both sides, is like a marathon of construction cycles, he said: "very repetitive, but also very intensive."

All the while, engineers have measured, monitored and used the tension on the cables to steer the two ends of the bridge toward their eventual meeting point some 10 stories above the waterline.

“We are within a few millimetres of where we were expecting to be,” Mr. Castro-Maier said of the alignment. “If you look at the magnitude of this construction site and the size of the deck – to talk about millimetres is very rewarding.”

Beauty meets utility

After delays caused by the COVID-19 pandemic, much still remains to be done to complete the bridge and its associated ports of entry in time for a projected opening in the fall of 2025. But the steady progress of the past year and the near completion of the bridge deck has heightened public interest and created a growing sense of anticipation on both sides of the river.

“We’re seeing social-media comments, we’re seeing how excited the community is about the bridge deck connection taking place. That’s a real inspiration for us,” said Heather Grondin, chief relations officer for the Windsor Detroit Bridge Authority, the Crown corporation that the federal government created a dozen years ago to oversee the project.

One reason for the good vibes is pure aesthetics. The Gordie Howe bridge isn’t just big; it is undeniably striking. Named for the Saskatchewan-born hockey legend who played 25 seasons with the Detroit Red Wings, the structure is supported by towers that rise 220 metres above the surrounding terrain. While the shape of the towers is the supposed nod to hockey, the visual metaphor is not obvious. What does jump out, however, are the fans of 216 stay cables that extend from the towers to the bridge deck. These give the bridge a remarkably airy feel for its size.

Thanks to improvements in materials technology, bridges that employ this form, known as a “cable-stayed” design, have become increasingly common since the beginning of the 21st century.

Because the load of the bridge deck can be transferred directly to the ground using a large number of relatively narrow cables that descend symmetrically from tall towers at either end, this approach requires less material to build than more traditional-looking suspension bridges, such as the 95-year-old Ambassador Bridge located five kilometres upstream from the new project.

In addition to greater structural efficiency – or perhaps because of it – a cable-stayed bridge also tends to elicit positive reactions.

“From the public standpoint, it becomes an iconic structure,” said Habib Tabatabai, a professor of civil and environmental engineering at the University of Wisconsin-Milwaukee. “It really is a beautiful sight to see.”

In the case of the Gordie Howe bridge, the other reason for enthusiasm is a pragmatic one. According to a 2021 [report](#) by the University of Windsor’s Cross Border Institute, the privately owned Ambassador Bridge, which is four lanes wide, accounts for 30 percent of all truck trade between Canada and the U.S., and 19 per cent of bilateral trade over all.

Nearby, the Windsor-Detroit tunnel offers only two lanes – one in each direction – and lacks the ceiling height for large trucks.

To say this situation presents a bottleneck would be an understatement. The problem is further magnified in a trade environment where materials and components can cross multiple times on the way to becoming finished products.

With six lanes of traffic, the Gordie Howe bridge will effectively double the size of the region's cross-border pipeline.