Welland Canal

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Introduction

Niagara Falls is impressive but makes navigation on the Niagara River between Lake Ontario and Lake Erie difficult, especially paddling upstream.

Introduction …

Bypassing Niagara Falls has led to the construction of four successive Welland Canals over the years. Work on the first began in 1824. Construction of the current canal started in 1913, was interrupted by World War I, and was completed in 1932. The development of the St. Lawrence Seaway in the 1950s ultimately led to the Welland Bypass project, a major realignment of the central section of the canal in the 1960s and 70s.

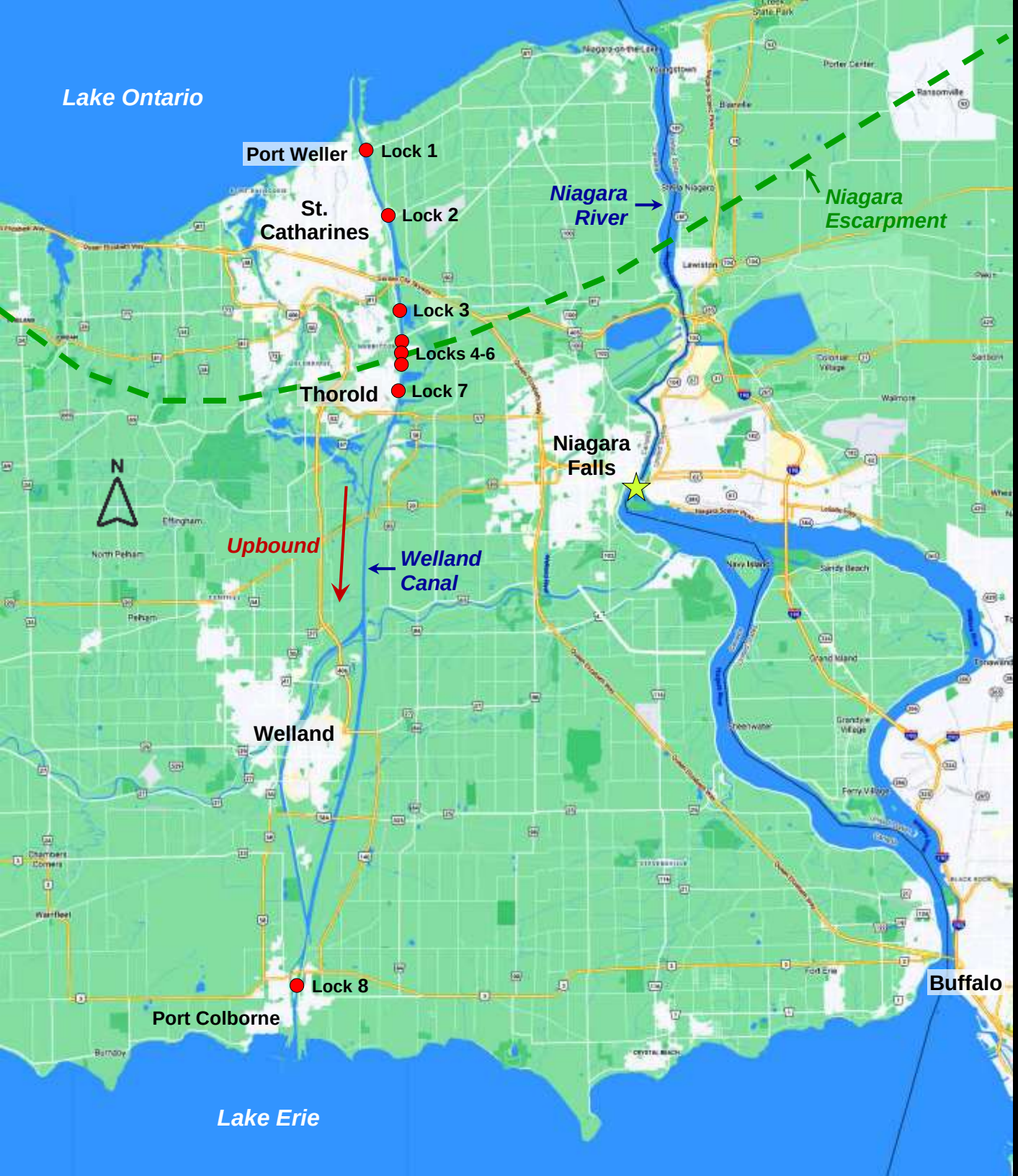
Many people find it fun to watch the big boats do their stuff. I'm especially interested.

My great great grandfather emigrated from Scotland to Canada in 1837. He was a stone mason by trade, and worked on the construction of the second Welland Canal.

And I came in contact with the Welland Bypass project in a variety of ways myself while working in nearby Hamilton in the 1960s.

This isn't a typical Travel-Pix package. No gardens or castles or mountains, just a canal, its ships, and its crossings. Great stuff for boat nerds, but perhaps an acquired taste.

If naval architecture isn't your thing you can ignore the captions and just quickly flip through the pictures of big toys.



The Welland Canal connects Lake Ontario at Port Weller and Lake Erie at Port Colborne through a series of 8 locks, allowing ships to bypass the step of 167 feet / 51 metres at Niagara Falls.

The Niagara Escarpment dictates lock placement (next page).

Length of canal –
27 miles / 43 km

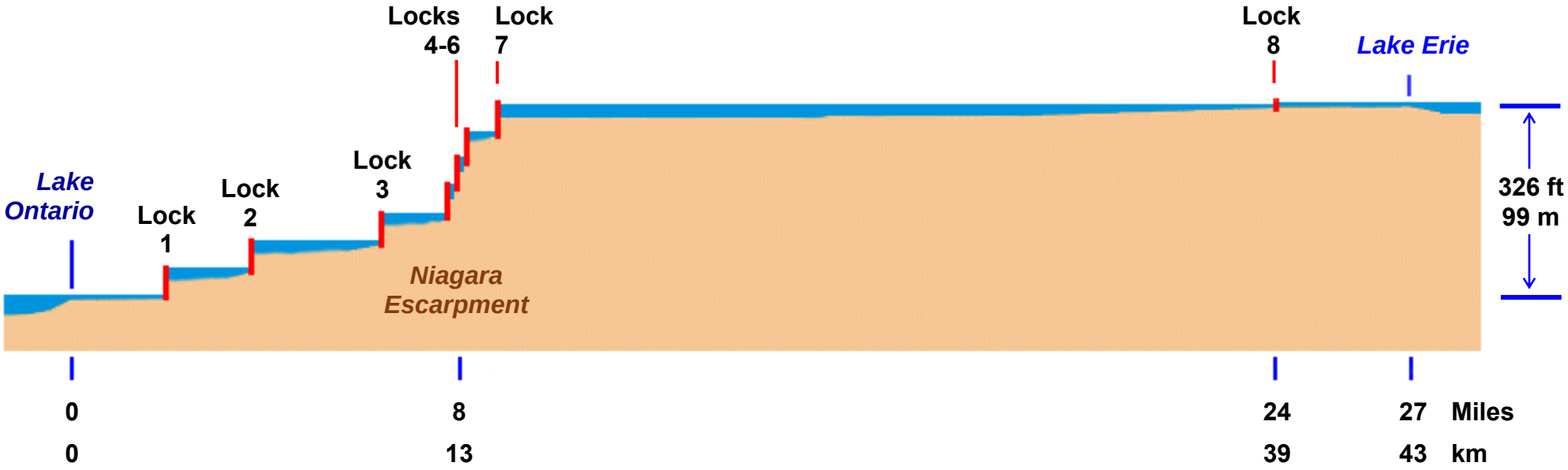
Elevation change –
326 feet / 99 m

Maximum vessel length –
740 feet / 226 m

Average transit time –
11 hours

Crossings –
10 bridges, 3 tunnels

Welland Canal Profile



The elevation change between the two lakes is not a gentle slope.

The edge of the Niagara Escarpment crosses the Niagara Peninsula about a third of the way from Lake Ontario to Lake Erie, introducing a relatively abrupt change in elevation.

Consequently, five of the eight canal locks (3 through 7) are clustered together there.

Locks 4,5, and 6 are a series of "twin flight locks" – side-by-side, interconnected.

Locks 1 through 7 each lift or lower vessels by between 43 feet / 13 m and 49 feet / 15 m.

Port Weller

The upbound Welland Canal begins at Port Weller on the south shore of Lake Ontario.

Port Weller

Port Weller is a pleasant town, part of the City of St. Catharines.

Port Weller The former Port Weller Dry Docks is now operated by Heddle Marine on behalf of the Seaway Authority.

Port Weller Vessels coming from Lake Ontario enter the canal here.

Lake Ontario Entrance

Trito Navigator **is a general cargo ship registered in the Netherlands.**

Lake Ontario Entrance This cargo of wind turbine blades is headed to Duluth, Minnesota.

Lake Ontario
Entrance

Lake Ontario
Entrance

Lake Ontario Entrance

Trito Navigator **enters Lock 1 to begin its upbound passage.**

Lake Ontario Entrance

Happy River **is a heavy load carrier, also registered in the Netherlands.**

Lake Ontario Entrance

Its cargo is wind turbine tower sections.

Lake Ontario Entrance **Entering Lock 1**

Lift Locks ***CSL Tadoussac,*** **upbound to Detroit, waiting to be raised in Lock 1**

Lock 1 **Ready to proceed, 16 minutes later**

Lock 1

The Welland Canals Parkway and Trail run along the canal from Locks 1 to 7.

Lock 1 **Another look at *Trito Navigator's* cargo**

Lock 2 ***Federal Yukina*** **leaving Lock 2, en route to Toledo, Ohio**

Lock 2 ***Federal Yukina*** **is a bulk carrier, registered in Hong Kong**

Lock 2 **Looking south towards Lock 3**

Canals Centre

The Welland Canals Centre at Lock 3 includes a museum, displays, and an elevated canal viewing platform.

Lock 3 ***Elbeborg*** **is a cargo ship downbound to Ghent, Belgium.**

Lock 3 **Upbound tanker *Algosea* being lifted in Lock 3**

Lock 3 **Ready to move on**

Lock 3

***Algosea* is en route between Ontario petrochemical industries in Clarkson on Lake Ontario and Nanticoke on Lake Erie.**

Lock 3

***Algosea* is one of eight tankers operated by Algoma Central Marine. Huge.**

Lock 3

Locks 4 - 6 **Twinned flight locks 4, 5, and 6 accommodate an abrupt elevation change of 141 feet / 43 metres.**

Locks 4 - 6 **The twinned locks are impressive, but there are limited viewing opportunities. This is tanker *Algonorth* being raised in Lock 5.**

Locks 4 - 6 Up, …

Locks 4 - 6 … forward, …

Locks 4 - 6 … and on to Lock 6.

Locks 4 - 6 **Almost immediately *Algoma Hansa* emerges. downbound on the other side**

Lock 7 Centre

The friendly Lock 7 Viewing Centre has displays and one of the best vantage points for viewing ship traffic along the canal.

Lock 7 **Tanker *Algonorth*, upbound to Sarnia, Ontario, about to be lifted in Lock 7**

Lock 7 **On the move 18 minutes later**

Lock 7

The Lock 7 Viewing Centre is far enough back to offer impressive views.

Lock 7 Lock 7 also has places for closeup shots.

Lock 7 ***Algonorth*** **is 472 feet / 144 metres long.**

Lock 7

The Inn at Lock 7 isn't a 5-star hotel, but it's got great views from its balconies. This is *CSL Tadoussac* …

Lock 7 **… upbound in the early evening …**

Lock 7 **… on its way to Detroit.**

Lock 7 **Next comes *Trito Navigator*.**

Lock 7 Raised in 14 minutes …

Lock 7 **… and on its way to Lock 8, 16 miles / 25 km south.**

We'll get to Lock 8 after a brief detour for cross traffic.

Crossings

Ships have priority over cars and trucks here.
Traffic stopped for raised bridges is a common sight.

Bascule Bridges

Bascule bridges are the most common.
The heavy counterweights make raising them easier.

Bascule Bridges

It's fun to watch the roadway lift up …

Bascule Bridges

… unless you're trying to get somewhere and it's your turn to wait.
I'm stuck at the south end of Lock 1.

Bascule Bridges

CSL Tadoussac is 730 feet / 222 metres long, the maximum possible length.
Traffic delay: 15 minutes.

Double Leaf Bridge

There is only one double leaf bridge across the canal – on what was the main highway to Niagara Falls and Buffalo.

Double Leaf Bridge

The Homer Bridge has the same design as the famous Tower Bridge in London.

Double Leaf Bridge

This bridge was replaced by the 6-lane high-level Garden City Skyway (behind) in 1963.

Vertical Lift Bridges

The Welland Canal seems to have a unique concentration of these iconic two-tower vertical lift bridges.

Vertical Lift Bridges

This bridge is at Allanburg, at roughly the midpoint of the canal.

Vertical Lift Bridges

Vertical Lift Bridges

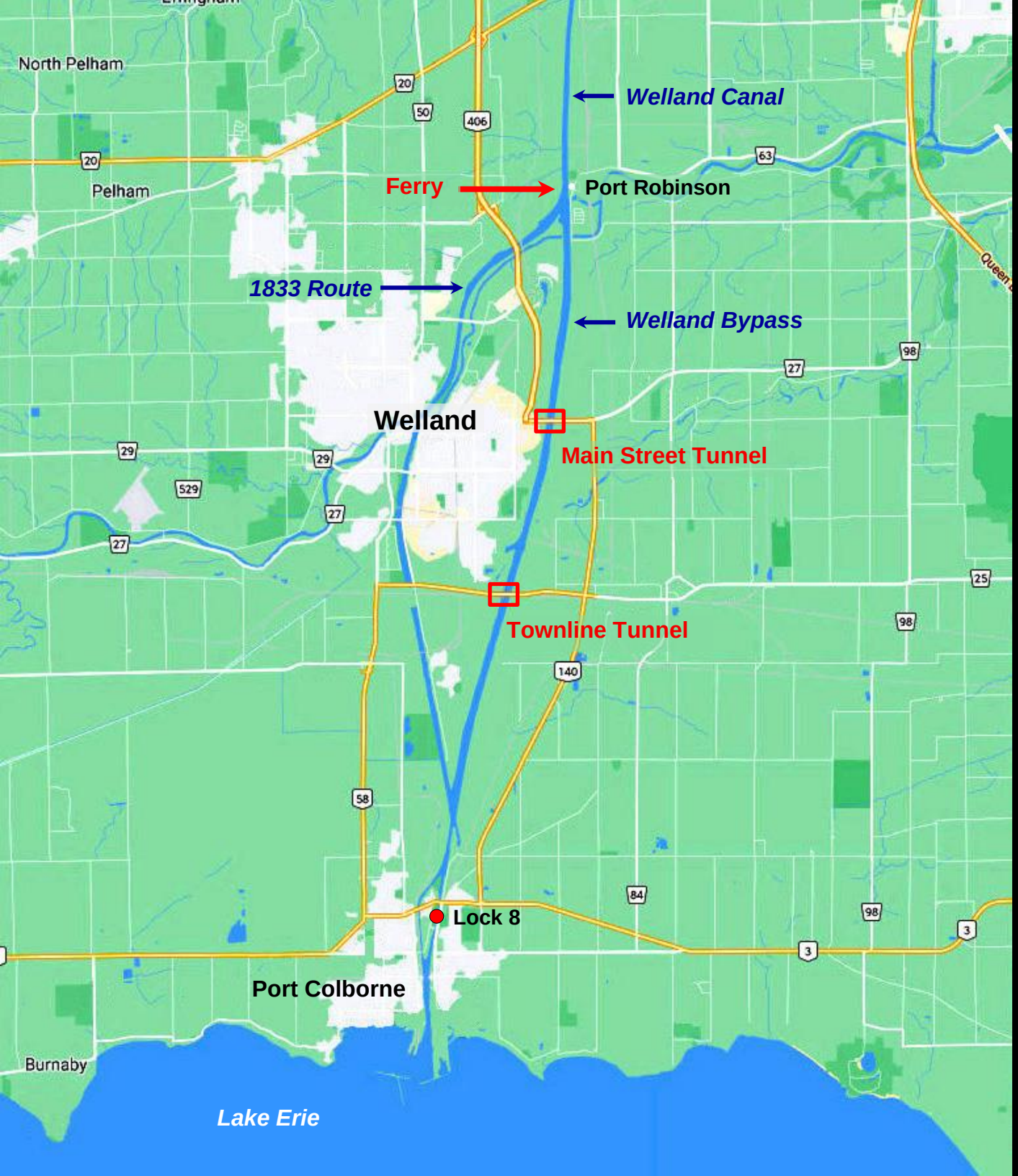
This is the Clarence Street vertical lift bridge in the middle of downtown Port Colborne.

Vertical Lift Bridges

This bridge design was popular in Ontario in the 1920s.

Vertical Lift Bridges These bridges are lifted straight up by counterweights.

Vertical Lift Bridges



Welland Bypass

The Welland Canal doesn't involve Welland or the Welland River anymore.

The canal passed through Welland beginning in 1833, but the long, curving route became a problem for the larger ships of the 1950s.

A direct bypass was constructed between 1967 and 1972 to benefit shipping.

But there was a bonus for residents too. There are no new bridges. Crossings of the Bypass are via tunnel. And commercial shipping no longer interrupts traffic in downtown Welland.

Tunnels **The Townline Tunnel carries this highway, a pedestrian and bicycle sidewalk, and two sets of tracks for CP Rail (left) under the canal.**

Tunnels **The Townline Tunnel is best seen from above.**

Port Robinson

There's a clear and unobstructed view of canal traffic at Port Robinson. There used to be a bridge here, but it was damaged in 1974 and not replaced.

Port Robinson

Instead, pedestrian traffic now makes the crossing on the modest but famous Port Robinson Ferry.

Port Robinson

We'll catch up with *Algonorth* again at Lock 8, 10 miles / 16 km south of here.

Guard Lock **Here we are at Lock 8, but there will be a short delay.**
Lock 8

Lock 8

This special "Guard Lock" keeps the water level in the canal constant despite major fluctuations in the level of Lake Erie.

Lock 8 ***Alanis* is carrying wind turbine tower sections.**

Lock 8

***Alanis* became locally famous in July 2020 when it was involved in a rare collision with another ship in the canal.**

Lock 8 **Today it's on its way to Port Weller for repairs.**

Lock 8

Lock 8 compensates for fluctuations in Lake Erie levels as great as 11 feet / 3.4 m.

Port Colborne

Port Colborne has an extensive set of parks at Lock 8 and along the canal, great for ship watching and relaxing too.

Port Colborne

Welcoming shops and restaurants face the canal on West Street.

Port Colborne

The Pilot boats extend the welcome to ships.

Trends and Outlook

I've featured mostly interesting or attractive ships here. The others successfully fulfill their function too.

Trends and Outlook

Much of the transported cargo has historically been grain, ore, and minerals – and that continues.

Trends and Outlook

There will never be monster oceangoing container ships here but the canal now specializes in some new areas.

Trends and Outlook

The canal can accommodate oversize loads that are difficult or impossible to ship by train or truck.

Trends and Outlook

We saw two loads of wind turbine parts entering Lock 1 …

Trends and Outlook

… and more heading the other way in Lock 8.
Ships to carry monster loads seems to be a growth area.

Trends and Outlook

Another specialized area is tankers. Algoma Central Marine of St. Catharines now operates eight petrochemical tankers.

Trends and Outlook

This is a high-tech business, now established as part of the canal's future.

Lake Erie This picture package ends at Lake Erie, at the other end of the canal.

Lake Erie

***Stranja* is a bulk carrier headed for Liverpool.**
We wish her a safe journey.

< End >

Welland Canal