

WELLAND FEEDER CANAL “JUNCTION LOCK”

Prepared for City of Welland Heritage Advisory Committee

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September 2018

Welland Feeder Canal Junction Lock
Broadway and Regional Road 58,
Welland, Ontario

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ARCHITECTURE

Construction (Figs.6, 11-14)

The Welland Feeder Canal Junction Lock is constructed of hundreds of cut stones. Specifications for the new stone locks on the Second Welland Canal (which replaced the wooden ones of the First Canal) were 150 feet by 26.5 feet with 9 feet of water over the sills. Each wall was faced with dressed Queenston limestone and backed by a rubble-filled crib. The number of the lock was carved into a stone near the top layer of masonry at its entrance.

Lock gates were constructed of red or Norway pine, covered with planks of the same. Balance beams were 32 feet long and the sluices in the gates were operated by a lever system like the one used for the First Canal's wooden locks.¹

Age (Figures 1-4)

The Junction Lock where the Feeder Canal emptied into the Second and Third Welland Canals at Welland was built circa 1845 during the construction of the Second Welland Canal.²

Engineers

Hamilton H. Killaly 1800-1874 (Fig. 7)

Hamilton Hartley Killaly was born in Dublin, Ireland in December of 1800 and graduated from Trinity College, Dublin with a B.A. in 1819 and M.A. in 1832. He learned engineering while working with his father, John, on the extension of the Grand Canal in Ireland before he emigrated to Canada in 1835. He was hired by the Welland Canal Company in 1837 as Chief Engineer on the building of the Second Welland Canal. Killaly had a large influence on civil engineering in Canada, both on the Welland Canal and after he was appointed first Chairman of the Board of Works for the Province of Canada in 1840.³

Walter Shanly 1817-1899 (Fig.8)

Walter and Francis Shanly, sons of an Irish lawyer who settled near London, Ontario, were among the first engineers to be educated in Canada. Until that time Canada's engineering requirements had been met by the Royal Engineers who returned to England after the job was completed. Walter and Francis were trained in Montreal, and their work on the second Welland Canal did much to set professional standards for Canadian engineering.

Civil and consulting engineer Walter Shanly was born in Stradbally, Ireland on Oct. 11, 1817 and died at Montréal on Dec. 17, 1899. He was the son of barrister James Shanly and Frances Mulvany. The family emigrated to Canada in 1836 and settled on the Thames River near London (Upper Canada). The friendship between the Killaly and Shanly families, both living near London, facilitated his entry into the career of civil engineering. Walter Shanly was put in charge of the work on the Second Canal from Thorold to the Junction and on to Port Colborne and also on the Feeder from Broad Creek to Dunnville. During this construction period the wooden Aqueduct at Welland was replaced in 1847 by one of stone and the stone Feeder Junction Lock was built.

The Shanlys also built many of the early railways and bridges in Canada. Their bridge over the Humber River in Toronto withstood Hurricane Hazel in 1954. They also worked in the United States and designed the famous Hoosac Tunnel at North Adams, Massachusetts.

In 1863 Walter Shanly was elected to the Legislative Assembly of the Province of Canada and in 1867 to the House of Commons, where he served until 1891. A confidant of Sir John A. Macdonald, the last letter ever written by Macdonald was to Walter Shanly.⁴

Contractors and Builders

The contract for construction of Locks 10-15 on the Second Welland Canal was awarded to E. W. Thomson and Company in 1843. This would have included the Junction Lock, which was no. 14 (Figure 5). In 1844 the contract for excavation and masonry for the Allanburgh and Junction Locks was awarded to Wm. Buell Jr.⁵

Edward William Thompson 1794-1865 (E.W. Thompson & Co.) (Fig.9)

Edward William Thompson (Thomson) was born at Kingston, Upper Canada in January 1794, the son of loyalists Archibald Thomson and Elizabeth McKay. He moved with his family to Newark (Niagara-on-the-Lake) in 1795, then to York (Toronto) and Scarborough Township. He served during the War of 1812 in the 3rd Regiment of York militia, was decorated for valiant services at the battle of Queenston Heights and received a militia land grant.

During the 1820's Thomson was involved in the construction of locks on the St. Lawrence and Rideau canals before becoming a contractor on the Welland Canal in the 1830's. Thomson also was a farmer and entered politics in the 1830's, defeating William Lyon Mackenzie in the 2nd Riding York County on his second try in 1836. Thomson's most significant contributions were in the field of agriculture as founder of the Home District Agricultural Society and first president of the Provincial Agricultural Association.⁶

Foremen and Labourers

Both the First and Second Canals were built almost exclusively by Irish immigrant labourers. Like all the work done on the Second Canal, the ordinary labourers who constructed this lock would have been mainly Irish immigrants.

The Jubilee History of Thorold reported that "The year 1841 brought 4,000 men, a large number having families with them to work on the enlargement of the canal. Most these 'canallers' were Irishmen."⁷

Overpopulation in Ireland and the "clearances" of 1829, when small tenant farmers in the south and west of Ireland were forced from their holdings by landlords to provide more grazing land, contrived to supply a steady stream of Irish immigrants willing to do manual labour. In spite of this, Ireland remained one of the most densely populated countries in Europe. Sixty percent of that population survived by subsistence farming, dependent upon the potato crop.

Between 1828 and 1845 there had been thirteen years of partial crop failures and the complete failure of the potato crop in 1844-45 due to blight brought starvation and death to thousands, forcing a large portion of the population to emigrate or die. By 1851 the Irish-born formed the largest ethnic group in Ontario's cities although for the most part Irish immigrants in 19th century Ontario were farmers, rural craftsmen and merchants and workers in hamlets and small towns.⁸

HISTORY

Event

Construction of Second Welland Canal (Fig.10)

This lock was built during the construction of the Second Welland Canal, which ran 27.5 miles from Port Dalhousie on Lake Ontario to Port Colborne on Lake Erie.

The First Welland Canal had its beginning in 1818 when William Hamilton Merritt, and fellow mill owners George Keefer and John DeCou brought forward a proposal to stabilize the supply of water for their mills on the Twelve Mile Creek

by linking the creek to the Chippawa River, a project which developed into the plan to connect lakes Erie and Ontario by canal. The three men conducted preliminary surveys, petitioned the provincial assembly for incorporation as a canal company, and organized local meetings to win public approval. The Welland Canal Company was chartered in January of 1824 with Keefer as the company's first President. The construction contracts were awarded and sod turned for the First Canal on November 30th, 1824. The first boats to navigate the canal were the Anne and Jane on October 24, 1829. The extension of the canal to Port Colborne on Lake Erie was completed in March of 1833. Locks on the first Welland Canal were constructed in wood.

The Second Welland Canal was begun in 1841 when Upper and Lower Canada were reunited. The Government of Canada embarked on a new series of public works and purchased the entire canal from the Welland Canal Company. It was decided to enlarge it for nine-foot navigation. On the 18th of August, 1841, the Legislature allocated 450,000 Pounds to complete the Welland Canal "In a permanent and fully sufficient manner, with cut stone locks."⁸ The number of locks on the canal were reduced from 36 to 27. The new locks were constructed in stone rather than wood and the leaky wooden aqueduct was replaced by a cut stone aqueduct. The Welland Canal was subsequently enlarged and improved as shipping demanded. The Third Welland Canal was begun in 1871 and completed in 1881, and the Fourth Welland Canal was constructed between 1913 and 1932.

The Feeder Canal was constructed as part of the first Welland Canal, but became indispensable when it was found to be necessary to use it, rather than the Welland River, to maintain the water level in the Canal. It was deepened during the construction of the Second Welland Canal and completed in 1845. Its intersection with the main channel of the Welland Canal was moved south to what became known as "The Junction", later "Junction Village", then "Helmsport" where this lock was located.⁹

Context

The Feeder Canal Junction Lock at Welland is an early part of the Welland Canal system which since the 1820's has shaped both the geography and history of the eastern half of the Niagara Peninsula. It was the Welland Canal that led directly to the birth of the settlement that grew into the City of Welland.

The Feeder Canal was created during the construction of the first Welland Canal. The first Canal (opened 1829) extended only as far south as Port Robinson, where landslides had prevented further excavation. Ships locked into the Welland River at Port Robinson then travelled through the Welland River to the Niagara River and down to Buffalo. A Feeder Canal was dug through Wainfleet

Township to Dunnville, where a dam on the Grand River ensured an adequate water supply to the new Welland Canal.

After the Second Welland Canal was finished, the Feeder Canal emptied into the Welland Canal at what was known as “The Junction” or “Junction Village”, an area later known as “Helmsport”, then “Welland South”. (Figs .1-4) The remains of the stone Junction Lock are located next to the old Welland Canal (Recreational Waterway) at Broadway Avenue and Prince Charles Drive (Figs.15-22). The Junction Lock was created during the construction of the Second Welland Canal (see Age above) and was used as part of the both the Second and Third Welland Canals.¹⁰

The stone Junction Lock and the stone Aqueduct on East Main Street between the Civic Centre and the Recreational Waterway are the only remnants we have in Welland of the Second Welland canal and the Feeder Canal. These structures are important because the creation of the Feeder Canal and Aqueduct led directly to the creation of the community that we now call Welland.

From the book, The Welland Canals and Their Communities by John N. Jackson:

There can be little doubt but that the City of Welland was born, reared and became an industrial town due to the Welland Canal...Specifically, the *raison d’etre* for the first urban settlement, was the feeder canal from the dam at Dunnville on the Grand River. The town grew at the spot where this feeder crossed the Chippawa Creek (Welland River) by means of a wooden aqueduct...The new settlement was given the name “Aqueduct”, which was changed to a more dignified “Merrittsville” in 1842, and then to Welland in 1858 when the settlement was incorporated as a Village by Act of Parliament. The importance of the site, presumed initially to be a shanty town for Irish workers on the aqueduct, depended upon the fall in level between the water in the aqueduct and the river, the resultant potential for water power, and the lock which allowed canal boats to enter the Welland River. The settlement became therefore a local centre for river and canal navigation, with access towards the Grand River along the feeder, to Lake Erie and Lake Ontario along the Welland Canal, and to Chippawa and the centre of the peninsula along the Welland River.

The Second Canal begun in the 1840’s was located east of the original canal, forming an island between the old and new canal channels. The old channel was spanned by a fixed bridge and the new by a swing bridge at East Main Street. The core of Welland with its businesses and Court House (completed 1856) developed along the road route (East Main Street) east of these two bridges. Grist and carding mills were located near the river along North Main (now Niagara).¹¹

The construction of the Feeder Lock at “The Junction” resulted in a smaller settlement there – “...a few houses, taverns &c”. It was also a transfer point for goods being transported to Dunnville along the Feeder.¹²

ENVIRONMENT

Setting (Figs. 15-22)

The remains of the Feeder Canal Junction Lock are located between Regional Road 58 and the Welland Recreational Waterway (old Welland Canal) at Broadway Avenue. This is an open grassy area adjacent to the City’s Dog Park.

The open portion of the lock is filled with water and surrounded by historical plaques within a couple of feet of the lock which can only be read by standing on the edge of the lock with one’s back to the open water (Figs 16 &17). It is an unsafe situation which could be remedied by turning the plaques around to face outward from the Lock.

Landmark

The Feeder Canal Junction Lock is a unique landmark in the City of Welland.

INTEGRITY

Site

The Feeder Canal Junction Lock occupies its original site and has not been moved.

Alterations

The Lock originally extended for about 150 feet.¹³ Most of this area has been buried under the earth with only a portion of the original lock open (Figs 15-18) and the tops of the stone lock walls visible here and there in the grass (Figs 19 & 20) in the other areas between its entrance at the old Welland Canal (Recreational Waterway) (Figs. 21 & 22) and the highway.

Condition

The open portion of the Lock is filled with water so only the exposed stone portions of the Lock can be examined but they appear to have survived in relatively good structural condition.

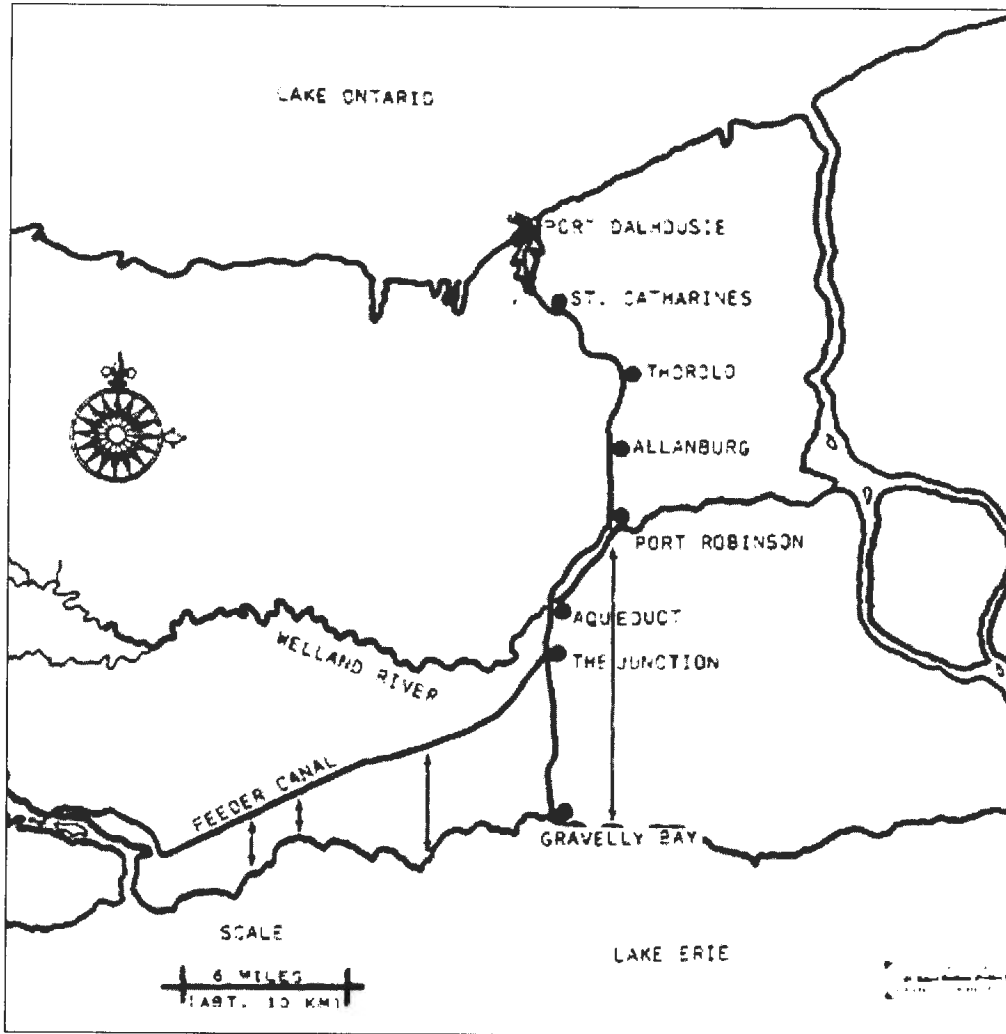


Figure 1

The Line of the First Welland Canal
showing where the Feeder Canal meets the Welland Canal at "The Junction"
Source: The Driver's Guide to The Historic Welland Canals by Colin Duquemin

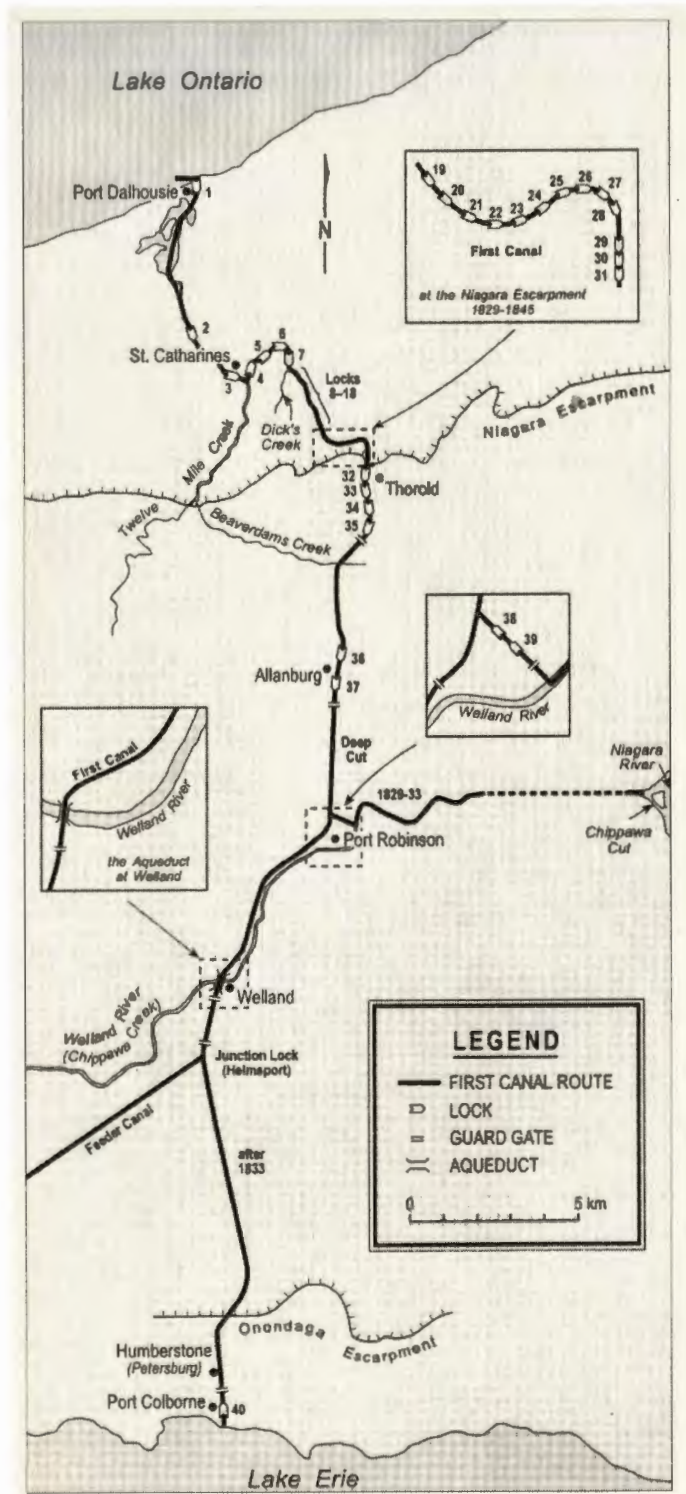
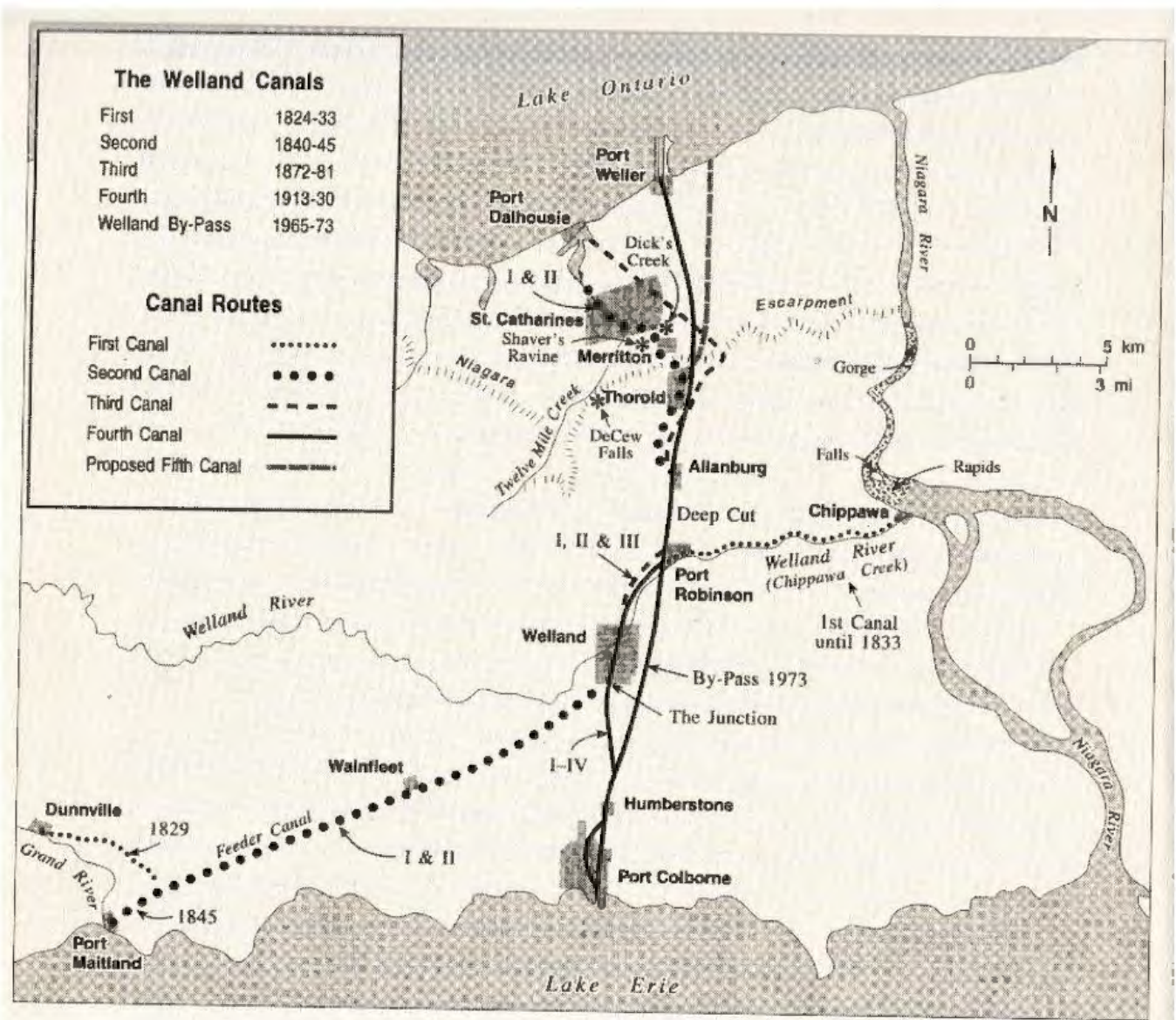


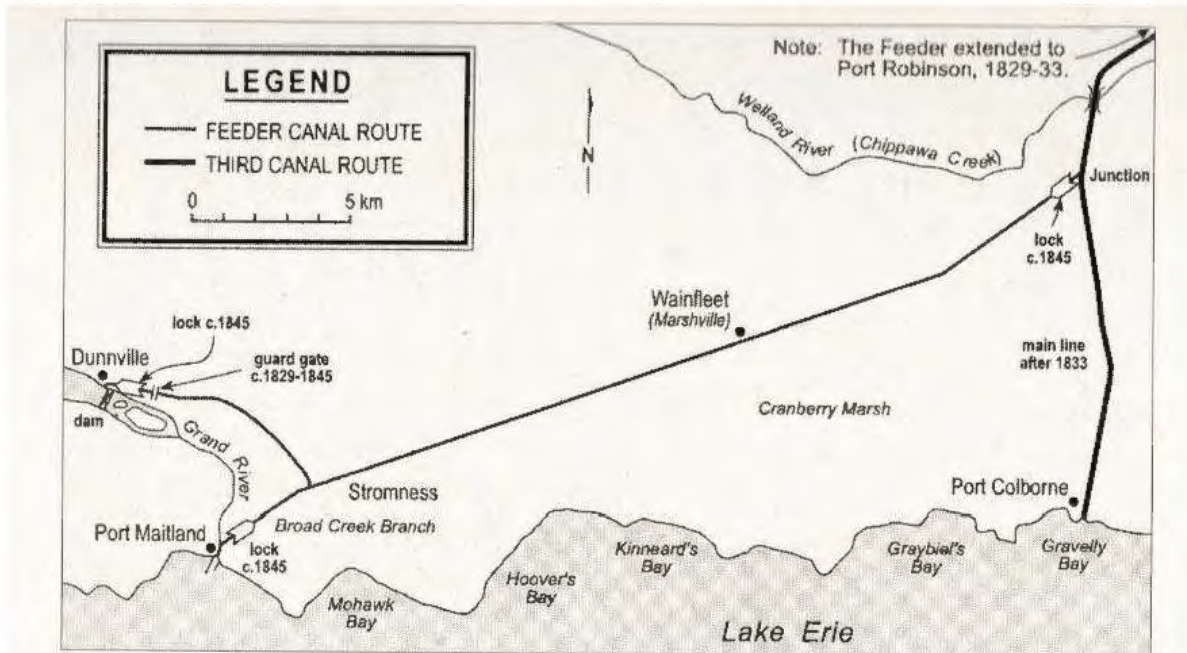
Figure 2
 The First Welland Canal (1829-1845)
 Showing location of "The Junction Lock" (Helmsport)
 Source: Roberta M. Styrán and Robert Taylor, This Great National Object
 Credit: Louis Gasparotto, Department of Geography, Brock University



Int.1 (above) The Welland Canals (Loris Gasparotto, Department of Geography, Brock University)

Figure 3

The Welland Canals
 Showing location of "The Junction" and Feeder Lock
 Source: Roberta M. Styran and Robert Taylor, This Great National Object



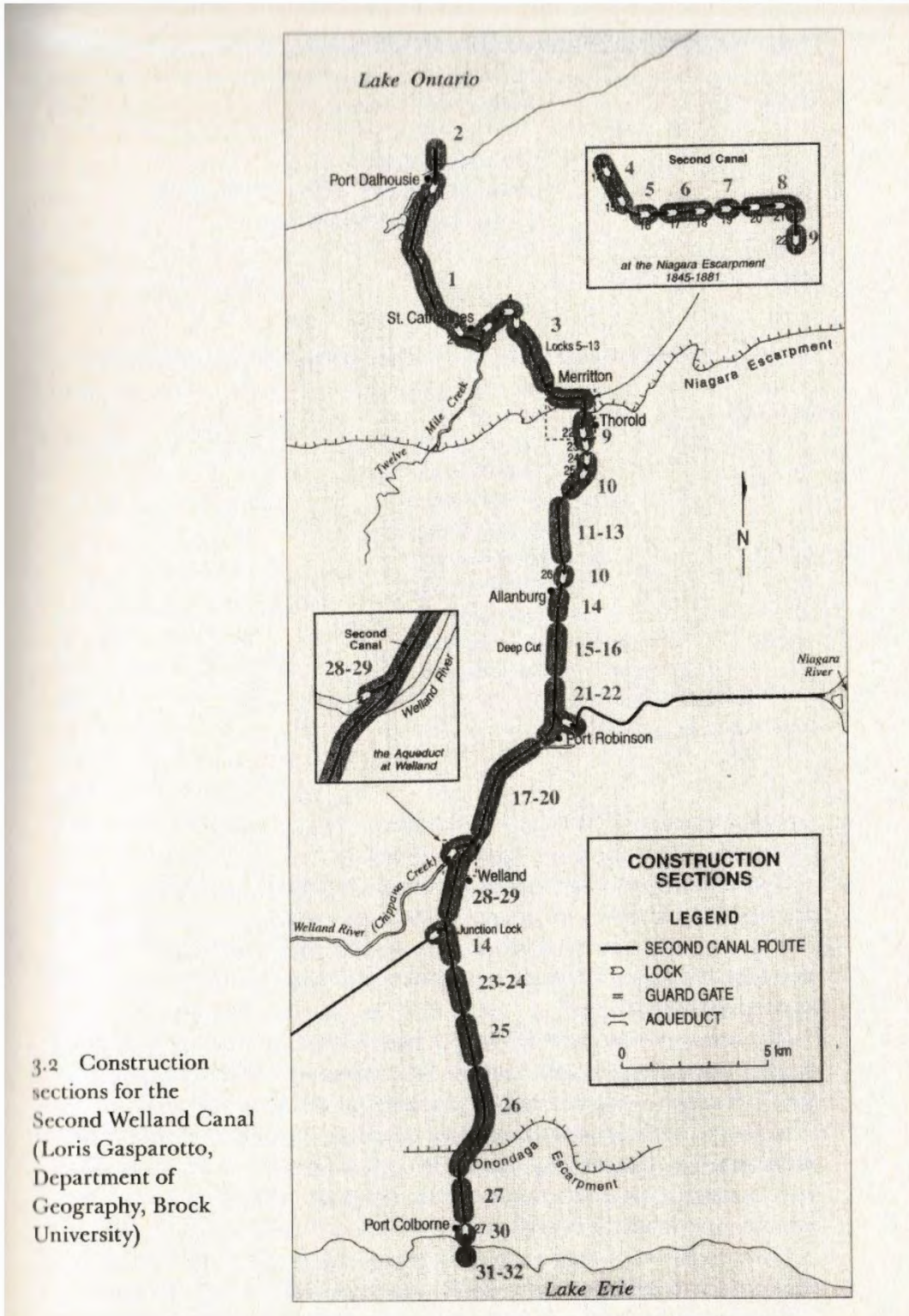
2.4 The Feeder Canal, opened 1829, provided water from the Grand River to the main Canal until 1881. (Loris Gasparatto, Department of Geography, Brock University)

Figure 4

Feeder Canal Route

Showing location of "The Junction" and Feeder Lock

Source: Roberta M. Styran and Robert Taylor, This Great National Object



3.2 Construction sections for the Second Welland Canal (Loris Gasparotto, Department of Geography, Brock University)

Figure 5

Source: Roberta M. Styrán and Robert Taylor, This Great National Object

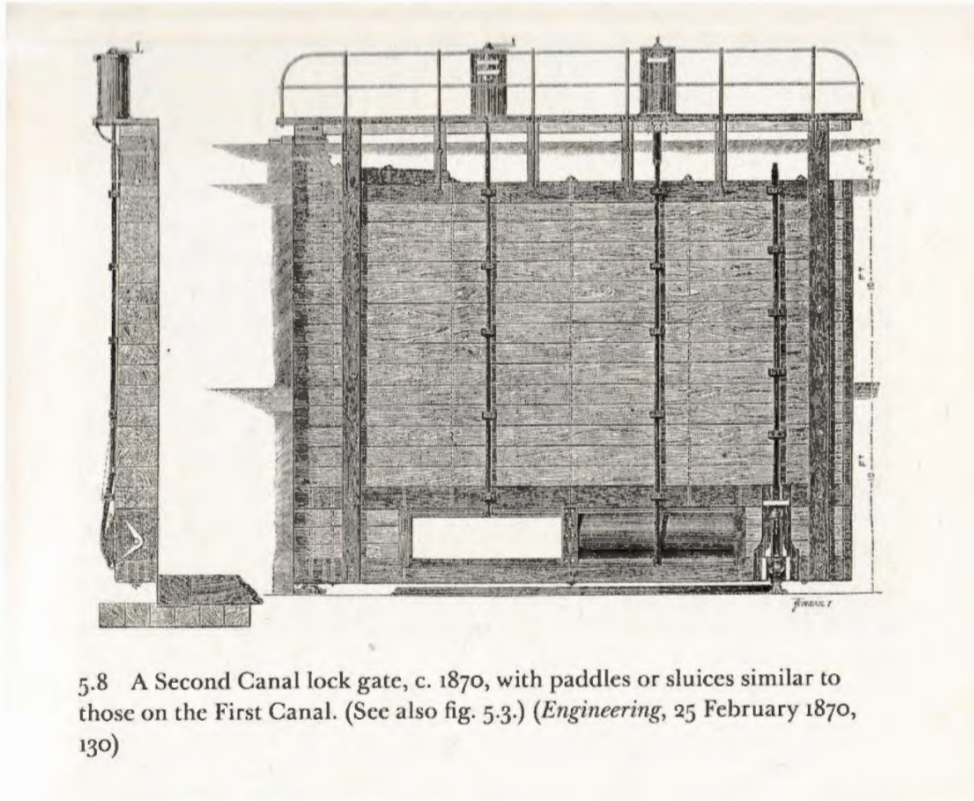


Figure 6

Source: Roberta M. Styrán and Robert Taylor, [This Great National Object](#)



Figure 7

Hamilton Hartley Killaly

Source: [Dictionary of Canadian Biography, Vol X](#)



Figure 8

Walter Shanly



Figure 9

Edward William Thompson

Source Figs. 8 & 9: Dictionary of Canadian Biography, Vols. XII and IX



Figure 10

Second Welland Canal

Source: Welland Public Library Digital Collection



Figure 11

Cut stone construction – Second Welland Canal



Figure 12

The bridge over nothing at Broadway (left) once spanned Feeder Canal (1957)
Source Figs 11 &12: Second Canal Images, Welland Public Library Digital
Collection



Figure 13
Spillway of the Feeder Canal into the Welland Canal at Welland, ON 1924



Figure 14
Gates of the Feeder Canal into the Welland Canal at Welland, ON, 1924
Source for Figs. 13 & 14: Welland Public Library Digital Collection



Figures 15 -18
Feeder Canal Junction Lock at Broadway, Welland 2018
A portion of the lock remains exposed and is filled with water
Photos: N. Reid







Figures 19 & 20
Lock walls buried east of exposed portion of Junction Lock
Photos N. Reid, 2018





Figures 21 & 22
Stone fenders at entrance to Feeder Canal lock on banks of old Welland Canal
(now Recreational Waterway) – being exposed by erosion
Photos: N. Reid 2018



References

¹ Roberta M. Styran and Robert Taylor, This Great National Object. Building the 19th Century Welland Canals (Montreal & Kingston, McGill and Queens University Press; 2012) p.p. 174-175.

Niagara on the Lake Public Library, Paper “Workers of the Queenston Quarry Company” posted on their website states that Queenston limestone was used to build the Welland Canals in the 19th century.

² Styran and Taylor, This Great National Object. p. 66;
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³ Styran and Taylor, This Great National Object pg. 83;
“Hamilton Hartley Killaly” in Dictionary of Canadian Biography (University of Toronto Press, 1959) Vol 10

⁴ “Irish Settlement in Welland” by Nora Reid. Monograph, 1993, prepared for the City of Welland Local Architectural Conservation Advisory Committee, p. 5.
Robert F. Leggett, “Walter Shanly” in The Canadian Encyclopedia (published 1985; revised 2013) .
“Walter Shanly”, Dictionary of Canadian Biography, Vol. XII

⁵ This Great National Object, p.p. 107-108.

⁶ Ann MacKenzie, “Thomson (Thompson) Edward William” in the Dictionary of Canadian Biography, Vol. IX.

⁷ Cited in “The Irish built it with sweat, death for 63 cents a day”, Toronto Daily Star, May 31, 1966.

⁸ J. Lawrence Runnalls, The Irish on the Welland Canal (St. Catharines Public Library, 1973) passim.
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⁹ John P. Heisler, The Canals of Canada Canadian Historic Sites: Occasional Papers in Archaeology and History – No. 8 (Ottawa, 1973), p.p. 48-49.
“The Welland Ship Canal” ms., Welland Public Library, Reference Department.

¹⁰ Colin Duquemin, The Driver’s Guide to the Historic Welland Canals (St. Catharines, 2004), p.p.35, 39
Jackson, The Welland Canals and Their Communities, p. 102

¹¹ John N. Jackson, The Welland Canals and Their Communities, (Toronto, 1997) p.p. 43-44; p.50.

¹² Smith’s Directory, quoted in The Welland Canals and Their Communities, p. 102; The Welland Canals and Their Communities, p. 210.

¹³ Interview, Terry Hughes, local researcher on Welland Canal History in the City of Welland