

## The Rideau Canal (Canada)

No 1221

*Official name as proposed  
by the State Party:*

The Rideau Canal

*Location:*

Province of Ontario

*Brief description:*

Extending 202 kilometres from Ottawa in the north to Kingston Harbour on Lake Ontario in the south, the monumental early 19<sup>th</sup> century Rideau Canal was built primarily for strategic military purposes at a time when Great Britain and the United States of America vied for control of the region, and a safe supply line was needed for the British colony of Upper Canada. The Canal's 'slackwater' system, flooding river rapids with the use of high dams, displays the results of North American use of European technologies. The Canal was one of the first to be designed specifically for steam-powered vessels. Associated with the canal is an ensemble of fortifications along its length and around the harbour.

*Category of property:*

In terms of the categories of cultural property set out in Article 1 of the 1972 World Heritage Convention, this is a site.

### 1. BASIC DATA

*Included in the Tentative List:* 1<sup>st</sup> October 2004

*International Assistance from the World Heritage Fund for  
preparing the Nomination:* No

*Date received by  
the World Heritage Centre:* 26 January 2006

*Background:* This is a new nomination.

*Consultations:* ICOMOS has consulted its International Scientific Committee on Fortifications and Military Heritage, as well as TICCIH.

*Literature consulted (selection):*

De Jonge, James. *Rideau Canal, Assessment of Engineering Structures: Phase I – Historical Evaluation*, Parks Canada, Ottawa, 1985

Legget, Robert. *John By; Builder of the Rideau Canal, Founder of Ottawa*, Ottawa, 1982

Legget, Robert. *Ottawa River Canals and The Defence of British North America*, Toronto, 1988

Legget, Robert. *Rideau Waterway*, Toronto, 1955

Stovel, Herb. *The Cultural Landscapes of the Rideau Canal Corridor*, Institute for Heritage Education, 1998

*International Canal Monuments, ICOMOS/TICCIH  
Thematic Study, 1996.*

*Technical Evaluation Mission:* 2-10 September 2006

*Additional information requested and received from the State Party:* ICOMOS sent a letter to the State Party on 5 December 2006, and the State party submitted supplementary information on 9 January 2007.

*Date of ICOMOS approval of this report:* 21 January 2007

### 2. THE PROPERTY

#### *Description*

The site extends to 21454.81 hectares and is surrounded by a buffer zone of 2363.20 hectares.

Built to create a defensible and reliable transport link between Lake Ontario and Ottawa in the British colony of Upper Canada, the Rideau Canal is made up of canalised sections of the Rideau and Catarqui Rivers, rather than newly excavated channels. Water raised by dams to flood the rivers, made previously difficult waterways readily navigable by large steamships.

This so-called 'slackwater' system was initiated by Lieutenant Colonel John By of the Royal Engineers Corp who had been appointed by the British Government to supervise the construction of a connection between Lake Ontario and the interior of Upper Canada colony in 1826. John By's solution avoided the need for extensive excavations of new channels and called for series of dams which backed up river water to a navigable depth and in effect created a chain of 50 locks. John By opted for fewer locks with high lifts rather than more locks with lower lifts. As a result the Rideau lifts were up to 4.6 metres high. It was John By who pressed for the design of the locks to be large enough to accommodate steamboats, then newly introduced into North America. The locks were up to 37.8m long and 9.1metre wide and this scale combined with the high lifts, necessitating lock walls, gates etc all being substantial structures to hold back the force of the extremely large volumes of water.

The locks were supported by a series of lakes that served as reservoirs, storing water in the dry summer months and releasing flood water gradually in periods of heavy rainfall.

Construction of the Canal began in 1828 and was completed in 1832. Six 'blockhouses', defensive positions, were built along its lengths at what were deemed to be vulnerable points, and a fort, Fort Henry, on the eastern side of Kingston harbour. Subsequently, in response to rebellions in the colony, defensible lockmaster's houses were added at several lock stations. Finally between 1846 and 1848 four 'Martello' towers were constructed to strengthen the fortifications at Kingston harbour.

By the mid 19<sup>th</sup> century the canal had lost its strategic position but had become a successful commercial transportation system. This success led to a profound impact on the surrounding previously almost deserted region, through the development of numerous small

settlements, based on farming, mills and service industries, and one large town at its northern end. Originally called Bytown after John By, its name was changed to Ottawa in 1855 and it became the capital of the new Dominion of Canada in 1867. By the 1870s the canal had been discovered by tourists and a number of resorts were developed in the 1890s and summer cottages appeared in increasing numbers after the First World War. The canal is now used almost exclusively for recreation.

The nominated area consists of the following:

- *Canal dams, locks, weir*
- *Bridges*
- *Lockmaster's houses*
- *Defensive Blockhouses*
- *Fort Henry & the Martello towers*

These are considered separately:

#### *Canal dams, locks, weirs*

To join up the rivers Rideau and Cataraqui and make them navigable, the river water had to be raised to eliminate rapids, shallows and swamps. This was achieved by the construction of dams that raised the water level into a series of navigable steps with boats lifted from one to the others through a system of locks. In total 74 dams and 50 locks were constructed along its 202km length. The dams were mainly constructed of earthen embankments; seven are stone arched dams (curved in a horseshoe shape with the high centre upstream and tapering in height at the ends), all surviving in their original form. At some lock stations a series of dams were constructed together, for instance earthen dams, stone masonry arch dams and stone masonry water control weirs at Kingston Mills. At Jones Falls the stone arch dam had a span of 107 metres and a height of 19 metres, double the height of any previous dams in North America. 23 of the original 74 dams retain their original structures.

There were 47 locks grouped together at 24 lock sites. Locks had either stone or timber floors and stone faced walls. None of the timber floors survive. One lock has been rebuilt in concrete.

When the canal opened, all the locks were operated by hand-powered winches. Today, three have been converted to hydraulic/electric operating systems.

#### *Bridges*

When built the landscape surrounding the canal was only sparsely populated and no bridges were constructed. As the population increased in the 19<sup>th</sup> century, bridges were built at lock stations; 12 are included in the nominated property and demonstrate the evolution of bridge design. Three are original steel king-post swing bridges constructed around 1900; four are copies of original timber bridges and the remaining five are steel replacements.

#### *Lockmaster's houses*

The original houses were built as small one storey readily defensible structures. In more peaceful times many were enlarged with the addition of a second storey. In the late 19<sup>th</sup> and early 20<sup>th</sup> centuries further lockmaster's houses were constructed. Thirty-three buildings dating from the construction of the canal remain today.

#### *Defensive Blockhouses*

Of the six blockhouses originally constructed to guard vulnerable positions along the canal, four survive. Although adapted after their defensive use had disappeared, all have now been restored to their original appearance.

#### *Fort Henry & the Martello towers*

Fort Henry on the headland of Kingston was constructed in 1830 on the site of a fortress of the so-called Vauban type of fortification. Fort Henry in plan followed Prussian models which were designed to be defensible against the newer artillery.

This vast military unit was completed with the addition of a battery and four Martello towers, constructed between 1846 and 1848. Frederick and the Cathcart tower were constructed in the east of the estuary; and Shoal and Murney in the west. These round two storey towers with a gun platform defended by a parapet and dry ditch, followed a model developed in Britain at the time of the Napoleonic Wars.

#### *History and development*

As a result of the American War of Independence, thousands of people who remained loyal to the British Crown moved northwards to Canada. The government immediately began identifying areas suitable for the development of settlements for the loyalists. The Cataraqui and the Rideau rivers were one of the areas surveyed and by 1800, a number of mills had been built, the first, at Kingston Mills, in 1784. Within a few years, there were mills at most of the major falls along the two rivers. However the difficulty of navigation along the rivers north to the St Lawrence river, the main settlement area, hindered much concentrated development.

The impetus to improve the waterway came though not from agriculture or other economic stimuli but from the needs of defence. The War of 1812-1814 between Britain and the United States of America had brought into focus the vulnerability of the St Lawrence River as the main supply line for the colony. Not only was it slow with a series of rapids, but it was vulnerable to attack from America along much of its length between Montréal and Lake Ontario. After the end of hostilities, America was still seen as a potential threat and the need for a secure military supply route a key necessity. Accordingly military planners turned their attention to the Cataraqui and the Rideau rivers.

After an exploratory mission, at the end of the war, the canal project was really launched in 1824-1825, with two studies, one by the civil engineer Samuel Clowes, at the request of the authorities of Upper Canada, and the other at the request of the Duke of Wellington, then commander-in-

chief of the army. The strategic dimension of the canal led the British government to take charges of its realisation.

Lieutenant Colonel John By of the Royal Engineers Corp was appointed by the British Government to supervise the construction of the canal in 1826. Before his appointment, military engineers had mapped out a scheme to construct new channels to bypass the rapids and swamps along the rivers. This would have necessitated around 40km of new channels along the 202 km route. By took a different approach and persuaded the government to adopt a 'slackwater' system that raised the level of the water above the rapids and swamps thorough the use of tall dams. This created a practical route with the minimum of excavation. By also pressed for the canal to accommodate the then newly introduced steamships and this necessitated dams that were taller and wider than anything previously constructed in North America. Canal construction begun in 1828 and involved around 6,000 workers at multiple sites along the length of the canal. The whole length was navigable in 1832.

The choice of route for the Rideau Canal, and the use of a slack water canal design, were influenced by the underdeveloped nature of the country through which the canal was to pass. In many parts of Europe, for instance, owners of riverside agricultural land, water mills and fishing rights would have resisted the alteration in river levels required by such a system. Slackwater canals are easier to build, and require fewer workers. Therefore this method will be chosen instead of a more costly conventional canal where the environment allows, as was the case with the Rideau Canal.

As with many canals, the Rideau Canal seems to have formed a catalyst for development. Ottawa grew around the canal as it runs southward from the Ottawa River, and elsewhere towns sprung up on the canal's banks. This is typical of economic development associated with canals, and mirrors the development of towns following canal building elsewhere in the world.

The Rideau Canal has survived almost in its original condition as it was by-passed following the improvement in relations between Britain and the USA and the development of the much larger St Lawrence Seaway. Its military capacity was never put to the test. It now functions mainly as a waterway for leisure craft.

### **3. OUTSTANDING UNIVERSAL VALUE, INTEGRITY AND AUTHENTICITY**

#### ***Integrity and Authenticity***

##### ***Integrity***

The nominated property includes all the main elements of the original canal together with relevant later changes in the shape of watercourse, dams, bridges, fortifications, lockstations and related archaeological resources.

##### ***Authenticity***

The original plan of the canal as well as the form of the channels has remained intact. The sitting of the original 47 locks survive. None of the wooden floors survive nor the

lock gates. Gates only last approximately 20-25 years and are replaced on a regular basis. 41 locks are considered to be in Canadian terms Level 1 cultural resource – i.e. to have high authenticity.

Of the 74 dams, 23 have level 1 status and the remainder level 2. The most significant engineering achievements are found in the stone horseshoe dams which all survive.

The Rideau Canal has fulfilled its original dynamic function as an operating waterway without interruption since its construction. Most of its lock gates and sluice valves are still operated by hand-powered winches.

ICOMOS considers that the nominated property adequately demonstrates integrity and authenticity.

#### ***Comparative analysis***

The nomination gives an overview of canals built for irrigation, water control and transportation – and puts the Rideau Canal into the latter category and provides comparators for this category of canals built using slackwater principles. Comparators are also given for canals built for military purposes although this is limited to examples post 1804. ICOMOS considers that wider comparators should have been provided and these are added below. No slackwater or military canals are currently inscribed on the WH list; the only two canals are the 360 km Canal du Midi, France, (1996) built in the 17th century, and widely regarded as the first canal of the modern era and a forerunner of the Industrial Revolution, the Four Lifts on the Canal du Centre and their Environs, La Louvière and Le Roeulx (Hainault), Belgium (1998). Neither of these is comparable to the extensive Rideau Canal; nor was either used for military purposes.

##### ***Military Canals***

The military use of canals has been underplayed both by canal historians and in the nomination. The role of military engineering and transport is not well recognised in the development of canal technology. The Romans built military canals such as the Fossa Drusiana of 12 BC which links the Rhine with the Ijssel near Arnhem. Earlier, in 101BC, the Fossa Mariana had been built from Arles to the Mediterranean avoiding the difficult passage of the Rhone delta. Trajan also improved the Danube by building a towing path through the Iron Gates to help with his invasion of Dacia.

The first military canal after the Roman period was the Fossa Carolina in Bavaria. Built by Charlemagne in 793AD, it linked tributaries of the Danube and Main, and allowed him to move his army by boat into the Rhine Valley. He also envisaged a similar connection between the Elbe and the Danube. The Fossa Carolina used simple inclines along which the small boats of the time could be hauled between deepened sections of river or excavated channels. Such simple systems continued in use in northern Russia until the early twentieth century and their remains can still be identified.

The Spanish Wars in the Low Countries also led to a military canal, the Fossa Eugenia, which linked the Rhine, near Duisburg, to the Maas, at Venlo. Work began in 1626 on the canal which had straight channels between

fortifications, but its construction was interrupted by the Dutch in 1628. It remained uncompleted but its remains can still be found.

The Prussians also built canals for military reasons, such as the Bromberg (Bydgoszcz) Canal which was built after Prussia had begun to expand eastwards through Poland in the 1770s. The canal created a through route from the Oder to the Vistula, allowing troops and supplies to be sent efficiently to Prussia's eastern front.

In France, Napoleon began building the *Canal de Nantes à Brest* in Brittany in 1806 to avoid the British naval blockade of coastal shipping. Between 1810 and 1832 the Gota Canal in Sweden was considered to have strategic importance for the defence of Sweden. Also in France, the *Canal de l'Est* was built avoiding Prussian gains in the Franco-Prussian War of 1870-1.

In Britain, the Royal Military Canal of 1804-6 was similar in design to the Fossa Eugenia, and was built to discourage Napoleon from landing troops on the poorly defended Romney Marshes. It was not the only one built in Britain for military purposes. The Caledonian Canal, 1803-22, was built so that small sailing warships could avoid the dangerous passage around the north of Scotland, as well as providing a passage for fishing boats. The nomination dossier only considers that Royal Military Canal in details and concludes that its importance in military terms was far less than the Rideau Canal and it was less heavily fortified. The crucial difference between the use of the Rideau Canal and others is that it played a crucial part in a military campaign which can be linked to a significant stage in human history – the resistance of the colony of Canada to the United States of America – and it survives in use and largely as built.

The Rideau Canal is an excellent example of a canal built for a military purpose that had far-reaching economic and social consequences.

#### *Slackwater Canals*

The nomination dossier considers slackwater canals in North America and concludes that none advanced technology as the Rideau Canal had done. However the Erie Canal, USA, is also a slackwater canal completed in 1825 and the Erie was far more economically significant and its engineering works more considerable than the Rideau. However it has been altered in places since it was built.

Further examples could have been considered in Europe. The Caledonian Canal, Scotland, UK, and the Gota Canal, Sweden, are similar to the Rideau Canal in that they use natural lakes and rivers for much of their route, with locks often grouped together in flights, though both do have some man-made channels. Lt-Col By would undoubtedly have had knowledge of the Caledonian Canal through the many government papers published about its progress. The locks on the Rideau Canal were similar in size. Those on the Caledonian Canal were soon found to be too small for the increasing size of ocean-going steam boats, and the canal was never a great success. Such a problem would not have affected the Rideau Canal whose boats would be purely for inland use and consequently of smaller size.

Three other slackwater canals thus exist that are similar in design to the Rideau although the Gota Canal and the Erie do show more change over time. The Rideau Canal is thus not unique but displays the way technology from Europe was imported into North America: the engineering of the Rideau Canal is typical of best practice at the time in North America. It is the only canal dating from the great North American canal-building era of the early 19th century that remains operational along its original line with most of its original structures intact.

In conclusion, ICOMOS considers that the Rideau Canal is of significance as a North American exemplar of a slackwater technology canal designed for military use, which had an impact on the development in its area and is still in use.

#### *Justification of the Outstanding Universal Value*

The State Party considers that in concept, design, and engineering, the Rideau Canal is the most outstanding surviving example of an early 19th century slackwater canal system in the world, and one of the first canals designed specifically for steam-powered vessels. It is considered to be an exceptional example of the transfer of European transportation technology and its ingenious advancement in the North American environment and a rare instance of a canal built primarily for strategic military purposes. The Rideau Canal, together with its ensemble of military fortifications, is said to illustrate a significant stage in human history when Great Britain and the United States of America vied for the control of the northern portion of the North American continent.

ICOMOS considers that the Rideau Canal demonstrates Outstanding Universal Value as a large strategic canal constructed for military purposes which played a crucial contributory role in allowing British forces to defend the colony of Canada against the United States of America leading to the development of two distinct political and cultural entities in the north of the American continent, which can be seen as a significant stage in human history.

#### *Criteria under which inscription is proposed*

The Rideau Canal is nominated on the basis of criteria i, ii and iv:

*Criterion i:* The justification of this criterion revolves around the choice by Lt-Col John By to use what is described as a highly innovative technology - that of slackwater- on a scale large enough to take steamboats. As has been detailed under Comparative Analysis, the use of slackwater technology was not new but could only be employed where existing land-use did not conflict with raised water levels. The creativity of John By was limited to using this technology as an expedient approach which minimized labour costs and time and was manageable in the low density land use of the area. Similar technology was used in the Erie Canal but this has been altered since it was built. The Rideau Canal thus remains the best preserved example of a slackwater canal in North America demonstrating the use of European slackwater technology in North America on a large scale. It is the only canal dating from the great North American canal-building era of the early 19th century that remains operational along its original line with most of its original structures intact.

ICOMOS considers that this criterion has been justified.

*Criterion ii:* This criterion is justified on the grounds that the use of European slackwater technology advanced this technology to a new level in North America, and the use of military technologies in the construction of forts represented technology transfer. Although the surveying techniques and locks were similar to those used in the Caledonian Canal, the dams however were much larger than those constructed elsewhere; the Kingston Mills dams which were of greater size than anything previously constructed in North America. Although all the forts were well suited to the purpose, the Murney fort was the most sophisticated to be built in north America using European design and construction.

In both slackwater and fort technologies, European techniques were introduced to North America and successfully employed and to a degree stretched in the case of the dams. What it is more difficult to justify is how this transfer of technology had a major impact on a whole area of the world; rather its impact was confined to the Rideau and Erie canals. The canal did in time come to have a significant economic impact on the area, but that is different from a technological impact.

ICOMOS does not consider that this criterion has been justified.

*Criterion iv:* The distinct stage of human history is defined as the conflict between two great world powers, Great Britain and the United States of America. It is suggested that the Rideau Canal was instrumental in ensuring that the security of Canada was not undermined by insecure supply lines. It is further suggested that the canal's successful creation was fundamental to the growth of colonial Canada. ICOMOS considers that there were other reasons why Britain ultimately kept the Americans at bay – their success was not solely because of the Rideau Canal. Nevertheless its existence did prove to be a significant contributory factor in the defence of Canada. The Rideau Canal is thus an extensive, well preserved and significant example of a canal which was used for a military purposes linked to a significant stage in human history - that of the fight to control the north of the American continent.

ICOMOS considers that this criterion has been justified.

#### 4. FACTORS AFFECTING THE PROPERTY

##### *Development pressures*

The main threat is to the setting of the site. The Buffer Zone is very narrow (see below) only 30 metres deep. Since the 1950s residential development has taken place on shore land particularly south of Ottawa and in the Rideau Lake area, such that only half the shore lands remain undeveloped. The remaining land is said to be subject to only minimum development pressure.

The four Martello towers and Fort Henry are not individually threatened by development but their intervisibility a key feature of their planning – has been

partly compromised by modern development although what remains is protected.

##### *Natural disasters*

The major threat would come from an exceptional flood, linked to climate change, that could damage the dams and banks. Protocols are in place for responding to such a threat. This is supported by inspection to pick up at the earliest opportunity any lack of stability in the dams.

##### *Mining*

Mining was not identified as a major threat in the nomination dossier. It was however highlighted in the local press as a possible issue and discussed during the mission. The State Party was asked for confirmation that any new mining activity could not impact adversely on the setting of the canal. In response it was stated that under the Ontario Mining Act there is a prohibition on mineral exploration and extraction activities within 120 metres of all lakes and rivers; this reservation applies to the full extent of the Rideau Canal.

Beyond the 120 metre line, there are severe restrictions and it is stated that the mineral potential in the broader vicinity of the canal is generally low and the land is highly valued for natural, recreational and aesthetic purposes, thus making the likelihood of any mining activity extremely remote.

ICOMOS considers that the canal is not under any major threat but that incremental development over time could impact on the setting of the canal.

#### 5. PROTECTION, CONSERVATION AND MANAGEMENT

##### *Boundaries of the nominated property and buffer zone*

The nominated site consists of the canal structure and associated Blockhouses and defensive structures. The Buffer Zone is a 30 metre strip along both banks.

It is stated that this 30 metre strip represents a mandatory setback of development from the shoreline under Municipal Planning policies. The State Party confirmed that all Municipalities along the length of the canal adhere to this precept and that all development is kept back from the edge of the Canal. However it also says although that for more than 95% of its length, all new development except for marinas must adhere to the 30 metre setback requirement, while within the older developed urban areas, which represent less than 5% of its length, the setbacks are somewhat less since the development pattern predates the establishment of the 30 metre standard. And further that the Official Plan for the Township of South Frontenac allows for a reduction in the 30 metre setback, if it is demonstrated through an environmental assessment that there will be no adverse impact on water quality and fish habitat. The reduction of the 30 metre setback requirement is determined on a case-by-case basis and in practice, it is apparently rarely granted.

The proposed narrow buffer zone protects the immediate setting of the canal but not its wider setting. Although no substantive new development is allowed in the buffer zone,

new houses are permitted beyond the buffer zone where they do not cause environmental damage.

In response to how the wider setting has been defined and is protected, the State Party has said that the setting is not the focus of the nomination. However all municipalities have policy statements that recognize the importance of the visual setting. The City of Ottawa has a design review process and the capacity to undertake evaluations of the impact of proposed development on the visual environment, while the other municipalities along the canal use a less comprehensive mechanism – the site plan control process – to minimize the visual impact of new development. Furthermore to encourage the protection of the scenic vistas and features of the canal setting, the Management Plan contains a commitment to identify lands of outstanding scenic value and to encourage the use of architectural styles that complement the architectural heritage of the canal corridor. To implement these actions, Parks Canada is undertaking two studies to identify the scenic vistas and features of the canal and to produce guidelines for new construction.

The State Party has also acknowledged that importance of preserving the setting of the canal through sound municipal planning policies, wise stewardship by landowners and the leadership of Parks Canada and other government agencies.

In some areas of the Canal, such as Long Island to Burritts Rapids, many houses have been constructed near the Canal. Although most of these seem to adhere to the 30m rule large numbers of houses, even on fairly large plots, can have a substantial impact on the setting of the Canal. ICOMOS considers that the visual setting of the canal needs clearer identification and where appropriate tighter controls to protect identified vistas and the background to key features of the canal, which needs protection. The current arrangement which allow development only if it does not cause environmental damage could be strengthened to include constraints against development that might cause damage to the visual setting of the canal.

ICOMOS considers that the boundaries of the nominated property are adequate to protect the structure of the canal. ICOMOS however considers that the visual setting of the canal needs clearer definition and appropriate protection to ensure the visual values of the setting are projected alongside the environmental values.

### **Ownership**

The structures of the nominated property, that is to say the canal structure and associated lockhouses and defensive structures, are all owned by the government of Canada.

The Buffer Zone, a 30 metre strip along both banks, is in multiple ownerships, private and municipal.

### **Protection**

#### *Legal Protection*

All the elements of the nominated area (canal, associated buildings and forts) are protected as national historic sites under the *Historic Sites and Monuments Act 1952-3*.

ICOMOS considers that the protective measures for the property are adequate – apart from the wider setting – see above.

### **Conservation**

#### *History of Conservation*

The dossier provides details of conservation work over the past ten years. Most of this is enhanced maintenance work. Major restoration projects have been completed at the Martello Towers. A list is also given of forthcoming work: again most are fairly small projects as major work is not needed.

#### *State of Conservation*

Repairs and conservation of the locks, dams, canal walls and banks is carried out directly under the control of Parks Canada. Each year one third of the canal's assets are thoroughly inspected by engineers. A complete inventory thus exists of the state of conservation of all parts of the property. This indicates that conservation of the majority of the property is considered to be fair or good. Work arising from this inspection is carried out by Parks Canada.

ICOMOS considers that the conservation of the property is good and on-going resources are in line with the needs of the property.

### **Management**

The Agency of Canada Parks is the authority which exerts the right of ownership, under the control of the Canadian Parliament and of a minister of supervision appointed by the Prime Minister of Canada, for the whole property, except for Fort Frederick which is under the supervision of the Ministry for Defence. The Historic Monuments Act requires each historic site to have in place a Management Plan. Currently a plan exist for the canal (completed in 1996 and updated in 2005), and plans are nearing completion for Fort Henry and the Kingston fortifications. The Canal Plan is underpinned by the Historic Canals Registrations which provide an enforcement mechanism for any activities that might impact on the cultural values of the monument. Being in one ownership and under one management greatly facilitates the management of the long canal and ensures a consistency of approach.

Parks Canada staff together present a wide array of expertise covering all the elements of then nominated site – archaeologists, planners, engineers ecologists etc and receive good continuing professional development. They are located in Cornwall, Ontario and in Ottawa.

Management and control of the buffer zone and setting of the canal is provided by land-use planning in cities and townships rather than designation. Each province has slightly different regulatory mechanisms; in some cases this appears to be limited to protection of the natural environment (see above).

Overall the natural environment is well protected by a the Conservation Authorities Act which protects water resources, wetlands, woodlands and natural habitats in Ontario, and by the Cataraqui Regional Conservation

authority and the Rideau Valley Conservation authority which together span the canal and protect natural habitats.

ICOMOS considers that the management regime is effective and well targeted to the needs of the nominated property.

consideration is given to strengthening its visual protection outside the buffer zone, in order to ensure the visual values of the setting are protected alongside environmental values.

## 6. MONITORING

Monitoring arrangements include monitoring the state of buildings and engineering works, development projects and visitor trends and impacts.

ICOMOS considers that the current monitoring could be extended to include the wider setting of the canal once key vistas and visual envelopes have been identified.

## 7. CONCLUSIONS

Although the Canal is being nominated for its technological achievements, appreciation of its scale and its impact on its surroundings have a visual dimension. Currently the canal itself and its narrow 30 metre buffer zone are well protected. Its wider setting is protected for environmental reasons but less so for visual attributes.

ICOMOS considers that the proposed study of vistas should be extended to identify the visual setting of the canal along its length and on the basis of this, consideration should be given to extending protection to those areas which contribute to the quality and understanding of the canal in its setting.

### *Recommendations with respect to inscription*

ICOMOS recommends that the Rideau Canal, Canada, be inscribed on the World Heritage List on the basis of **criteria i and iv**.

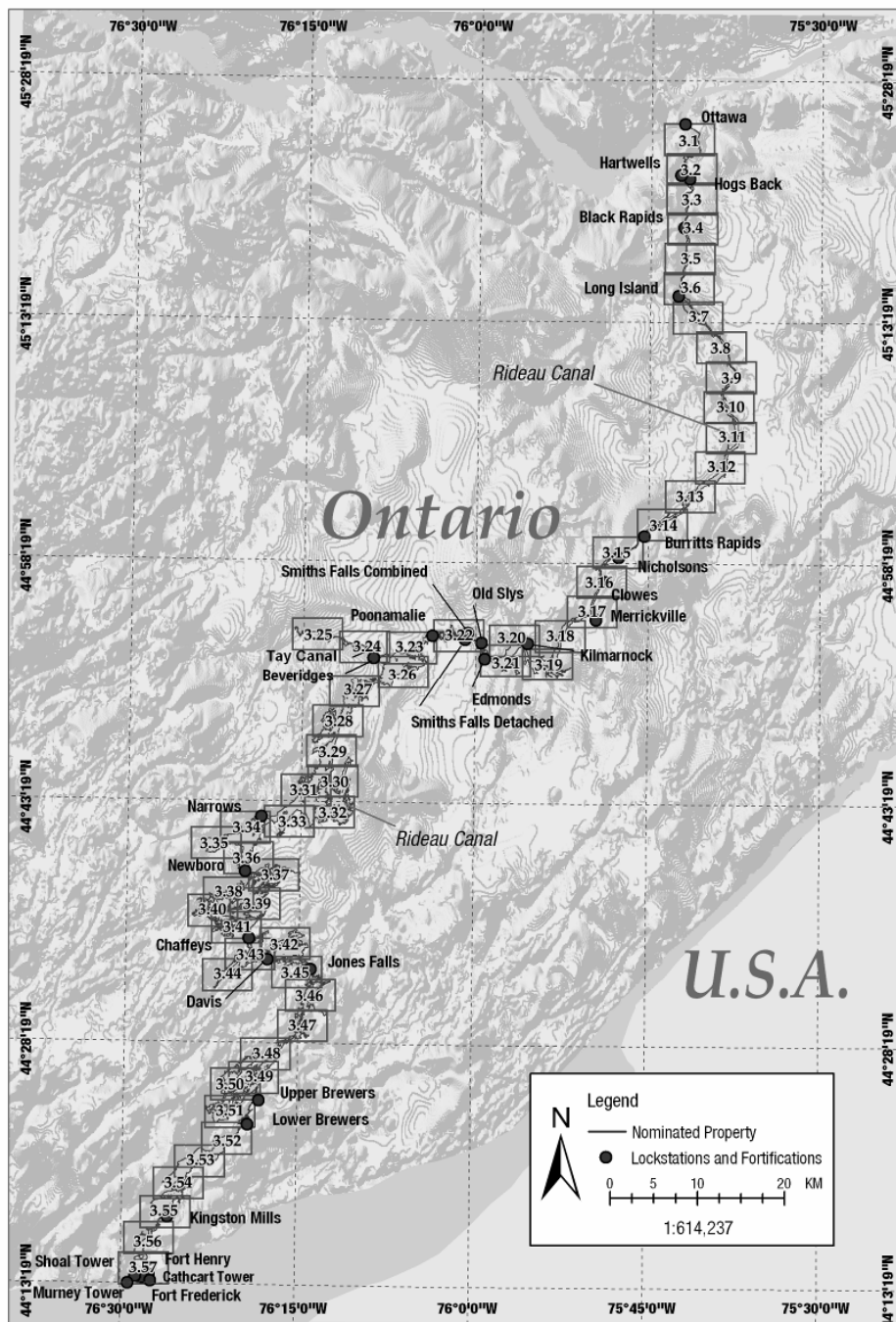
### *Recommended Statement of Outstanding Universal Value*

The Rideau Canal is a large strategic canal constructed for military purposes which played a crucial contributory role in allowing British forces to defend the colony of Canada against the United States of America, leading to the development of two distinct political and cultural entities in the north of the American continent, which can be seen as a significant stage in human history.

**Criterion i:** The Rideau Canal remains the best preserved example of a slackwater canal in North America demonstrating the use of European slackwater technology in North America on a large scale. It is the only canal dating from the great North American canal-building era of the early 19th century that remains operational along its original line with most of its original structures intact.

**Criterion iv:** The Rideau Canal is an extensive, well preserved and significant example of a canal which was used for a military purposes linked to a significant stage in human history - that of the fight to control the north of the American continent.

ICOMOS further recommends that following the completion of the study of the visual setting of the canal,



Map showing the location of the nominated properties





**Ottawa Lockstation**



**Edmonds spillway**



**Smith Falls**



**Fort Henry in Kingston**