GROSSE ÎLE

NATIONAL HISTORIC SITE

DEVELOPMENT CONCEPT

PUBLIC CONSULTATION
PROPOSED DEVELOPMENT CONCEPT

MARCH 1992
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The objectives of the Canadian Parks Service, an agency of the federal department of the Environment, are «to fulfill national and international responsibilities in assigned areas of heritage recognition and conservation; and to commemorate, protect and present, both directly and indirectly, places which are significant examples of Canada's cultural and natural heritage in ways that encourage public understanding, appreciation and enjoyment of this heritage in a sustainable manner».

Today, the Canadian Parks Service administers more than 13 million hectares of land protected as National Parks, National Historic Sites, Heritage Canals, Heritage Rivers and Heritage landmarks. In all, more than 34 National Parks, 3 Marine Parks, 110 Historic Sites or so and 9 Heritage Canals form the mosaic of Canada's National Parks system.

In Quebec, this system currently consists of three National Parks (Forillon, La Mauricie and the Mingan Archipelago National Park Reserve), one Marine Park (the Saguenay Marine Park) as well as four Heritage Canals. Added to these are 19 Historic Sites commemorating as many people, places, events and themes of significance in Canadian history. The latest addition to these Historic Sites is Grosse Île.

The significance of Grosse Île in Canadian history lies in the essential role it played as Canada's main quarantine station from 1832 to 1937, a period which saw European immigrants entering Canada in droves.
In May 1974, the Historic Sites and Monuments Board of Canada, recognizing the national historic significance of the Grosse Île quarantine station, recommended erection of a commemorative plaque, which was placed in 1980.

In June 1983, the Board stated that immigration was one of the most significant themes in the history of Canada and reiterated the position it had taken in 1974 concerning the national historic significance of Grosse Île. The next year, following submission of a study on the immigration theme, the Board stated that:

«...in light of the number and quality of the in situ resources on Grosse Île related to the theme of Immigration, the Minister should consider acquiring the Island, or portions of it, and there developing a national historic park.»

The Minister accepted the Board’s recommendation and proposed an agreement with the Minister of Agriculture, responsible for Grosse Île, concerning the transfer to the Canadian Parks Service of buildings and land of heritage interest. On August 4, 1988, a memorandum of understanding to this effect was ratified by the Minister of Environment and the Minister of State for Agriculture.

This information document which has been produced within the context of the Public Participation Program is designed to present the approach that the Canadian Parks Service favours to meet the preservation, commemoration and regional objectives set for Grosse Île.

The paper is in four parts. A first section entitled «Context» informs us of the heritage interest of Grosse Île as well as current use of the site and condition of resources. The second chapter discusses the long-term objectives which the Canadian Parks Service intends to pursue at Grosse Île. The third part focuses on the issue of development of the site by opposing advantages and constraints. Finally, the last section presents the proposed development concept and discusses prospects of visitation to the site.
n this first, essentially factual section, we shall attempt to draw a brief portrait, as objectively as possible, of the context of the site, starting with the significant role played by Grosse Île in the history of Canadian immigration. The vestiges of Grosse Île’s past, whether they be architectural, archaeological or ethnographic resources, will then be reviewed, as will the existing infrastructure, before we look at the natural environment, which is particularly interesting here owing to the geographic position and island nature of the site. Various data concerning current use of the site, particularly with respect to visits, an explanation of the ownership status of the island and an overview of the regional tourism context complete this informational section.
LOCATION

Grosse Île lies in the upper St. Lawrence estuary, some 48 kilometres downstream from Quebec City. With a surface area of 185 hectares, it is one of the 21 or so islands in the Île aux Grues archipelago bounded by Île aux Coudres, downriver, and Île d'Orléans, upriver.
HISTORIC SIGNIFICANCE

The following pages trace the progress of Canadian immigration between 1832 and 1937 and at the same time present the development of the Grosse Île quarantine station. To make this long, rich period of history easier to understand, it has been broken down into five major phases.

1832 - 1860

Three distinctive features characterized immigration to Canada during the period from 1832 to 1860:

- First, to use the words of the period that are so revealing of the perspective of that time, Canada was essentially coming to the assistance of "British emigration"; indeed, the policies, subsidies and initiatives originated in London. It was not until the early 1860s that an organization was set up to recruit "immigrants." During this period, Quebec City, the country's main port of entry, received an average of some 30,000 immigrants a year, most of them British citizens.

- Second, these years were particularly notable for immigration of people of Irish origin, accounting for 52 percent of new arrivals. (1)

- Finally, not only did this immigration take place at the time of the major epidemics which assailed North America, it was even the vehicle of these epidemics. (2)

Cholera, introduced into Great Britain by British soldiers returning from India, would thus be exported to North America by immigrants in 1832. It returned in 1834, then again in 1849 and 1854. In 1832, by far the most deadly year, cholera took 1,900 victims in Montreal, and twice that number in Quebec City. As to typhus, also known as "ship fever," it had frequently reared its head in Quebec City during the 1820s, when immigrants landed. This contagious disease relied upon the cramped quarters of passengers on board ship, poor hygiene conditions and contaminated water to take root and develop. In 1847, a year when all these conditions were to be found at once following the arrival in Quebec City of a wave of 90,000 immigrants, typhus killed 10,000 people in Canada; a further 5,000 are estimated to have died during the crossing.

This era of contagious diseases attributable to immigrants came to an end in 1854. That year, a cholera epidemic killed 1,200 in Montreal and approximately 800 in Quebec City. Serious breaches of the quarantine regulations were responsible for this crisis.
On Grosse Île, the period from 1832 to 1860 saw the establishment of the Quebec City quarantine station and its early operations. Need we recall that this crucial stage was characterized by haste and ignorance and, consequently, improvisation and trial and error?

Haste, because the cholera of 1832-1834 struck in Quebec City virtually without warning, on the heels of more than 100,000 immigrants, as did the 1847-1848 typhus (approximately 120,000 new arrivals). Urgency, also, because in 1832 the scourge was met by an organizational vacuum, while in 1847 the facilities offered to victims of infection and contagion were pathetic, particularly in terms of accommodation capacity.

Ignorance, finally, of these nevertheless ancient diseases, of the causes, methods of propagation and above all treatment. A lack of knowledge that was all the more fatal since it prevented, throughout this initial period, the establishment of a remotely effective quarantine system. Great Britain, itself without a quarantine service, was of no help. As to the French health services, which had nonetheless been governed by strict, exemplary legislation since 1822, they were not consulted.

This watercolour painted prior to 1850 by H. Percy illustrates some of the facilities on Grosse Île when the military commanded the quarantine station. The administration and military barracks were located in the central sector of the island, shown in the foreground. In the distance, towards the west, several immigrants' shelters and perhaps the hospital can be seen. Behind on the hill stands the semaphore used to communicate with sailboats.

National Archives of Canada, C-13656

Grosse Île was selected as a site conducive to establishment of a quarantine station owing to its isolation. (3) Following the government's decision, a company of the 32nd Regiment, stationed in Quebec City, landed there in April 1832.
During the first 25 years of the quarantine station’s existence, Grosse Île was essentially a military establishment. The urgency, seriousness and scope of the task no doubt explain this situation. But the medical team would always be civilian, from the superintendent to the boat inspector; this virtually two-headed administration, often in conflict, would end in 1857 when the British government ceded ownership and operation of Grosse Île and its quarantine system to the government of United Canada. The Canadian Bureau of Agriculture would then be entrusted with administration of the station, whose superintendent would be Dr. George M. Douglas until 1864.

Until 1847, all quarantine activities were concentrated in the western part of the island, in the «Cholera Bay» sector. Here were gradually erected the first hospitals for the sick and huts for quarantined travelers; other shelters were set aside for healthy passengers. Further to the east, in the central part of the island, the military and personnel working on the station were installed. Prior to 1847, in the absence of a wharf, immigrants were landed by launch. Simple fences or palings separated the hospitals from the shelters housing the healthy and from the rest of the island in general.

During the 1847 typhus epidemic, this pattern of occupation of the island was altered of necessity. Additional shelters, huts or tents for the healthy had previously been erected in the eastern part of the island; but there was such an influx of sick people that hundreds of them soon had to be allocated to that zone. From 1847, a large number of hospitals or lazarettos were thus built in this sector of Grosse Île. During this time, soldiers, miscellaneous employees, physicians and ministers of religion continued to live in the centre of the station. At this time, the island’s first wharf was finally built, in the western sector, on the site of today’s wharf.

In 1857, when British administration of the island ended, a major economic slump was affecting the economy of the western world. On Grosse Île, this situation, combined with the relative calm of the years following the 1854 cholera epidemic, led to a marked tightening of spending. The last years of the period would therefore see major retrenchment in terms of equipment built on the island. Numerous structures going back to 1847, or even earlier, threatening ruin, were either demolished, or sold and carried off the island; others were given new roles. In short, the time had come to rethink the occupation of station land: henceforth, anarchy and improvisation were to give way to planning.

During the years from 1861 to 1880, Canadian immigration underwent a profound change. This is shown not so much by the figures, since approximately 25,000 immigrants landed yearly at Quebec City during these two decades, as compared to 30,000 in the previous period. Great Britain still provided a substantial majority of new arrivals, close to 60 percent. Of this British contingent, however, the Irish were now in the minority, with the English taking a strong lead.

In terms of the nationality of immigrants, two phenomena draw our attention during these years. First, heavy immigration from Scandinavia throughout the period (30 percent of arrivals). On the other hand, it was during the 1870s that was first seen what would later become one of the dominant features of Canadian immigration: its ethnic diversity. Already Russians (Mennonites and Jews), Belgians, French, Swiss, Italians and Icelanders were setting foot in the country, initiating a movement that would constantly grow.

Another precedent, at least on this scale: year in, year out, some 50 to 70 percent of immigrants landing in Quebec City headed for the United
States. The movement had begun in the early 1860s (27 percent in 1863) and would continue to expand over the years (85 percent in 1866).(4)

In 1862, the Bureau of Agriculture became a full-fledged department, officially in charge of controlling and administering immigration. Recruitment of immigrants and promotion of Canada abroad rapidly became top priority for the Department. Immigration offices opened in England (Liverpool), Ireland (Londonderry) and Continental Europe. Following Confederation in 1867, these offices would multiply, and a federal immigration agency would be set up in London.

Alongside these initiatives, the Canadian government gradually set up a policy of reception and assistance for destitute immigrants; indeed, the latter arrived at Quebec City in growing numbers during the 1860s. The tax imposed on each immigrant entering the country financed this assistance. Canadian railways provided free transport to new arrivals to Ontario and, soon, Western Canada. The federal government also maintained immigration offices in Canada, in Quebec City, Montreal, Kingston, Toronto, Hamilton, Ottawa, Halifax and St. John. From 1872 on, agreements were also reached with several transatlantic shipping companies with a view to providing financial encouragement for immigrants to make the crossing. By all these means, Ottawa sought to attract to the country no longer those in need and without a trade but rather farmers, farm workers and domestics.

During the 1870s, Canadian immigration already reflected widely diversified ethnic backgrounds. This contemporary engraving shows emigrants bound for Canada boarding in Hamburg, Germany. Will they stay?

Canadian Illustrated News, October 31, 1874
National Archives of Canada, C-61505

Note also — and this was one of the great advances of this period — that these years saw the steamship finally supersede the sailing ship in the transportation of immigrants.(5) This fact is significant from several points of view. Great Britain was now some 12 days' sail away from Quebec City. Immigrants, better accommodated and fed, and reaching their destination much more quickly, particularly from the early 1870s, arrived in Canada in much better health. Furthermore, unlike the all too numerous sailing ship captains who were unscrupulous and did not follow the regulations, the owners of steamship fleets watched their reputations and worked closely with the governments, and this meant even more comfort for the passengers.

(4) Primarily responsible for this state of affairs were the Scandinavians, who took the St. Lawrence route en masse at this time to join relatives or friends in the Republic to the south. But they were followed by numerous arrivals from Britain, drawn by the demand for manpower, and higher wages, not to mention more easily obtainable land.

(5) The movement had begun during the 1850s, and would be completed in 1878: that year, only steamships landed new arrivals in Quebec City.
As we have seen, the assumption of responsibility for the Grosse Île quarantine station by the Canadian government in 1857 was inauspicious. The country was being drawn into a serious economic recession, and the island's operating budgets were shrinking.

Following a spectacular drop in the number of new arrivals in Quebec City in 1858, 1859 and 1860, a decline which similarly affected the number of admissions and deaths on Grosse Île, the Governor General of Canada ordered in March 1861 that «all ships and other vessels (...) will quarantine in the Quebec harbour».

For several years, the abolition of quarantine on Grosse Île had been demanded by a number of people; it was said to be harmful to trade, costly for the state, inaccessible and too far from Quebec City.

The river station, highly disorganized if not completely closed in spring 1861, survived thanks in particular to an angry outcry from the Quebec medical corps. Furthermore, in 1861 and again in 1862, a substantial recovery in immigration, along with the reappearance of contagious diseases, came to the support of the experts' arguments: the Grosse Île quarantine station was still indispensable. In 1862, 58 people died there, 34 of them from typhus.

Until 1865, Grosse Île's medical superintendent, A. Von Iffland, operated the quarantine station on a tiny budget. He took advantage of station employees' skill to put the buildings under his responsibility into the best condition possible. But in the mid-1860s, the announcement of the imminent arrival of Asiatic cholera on our shores, from Europe, allowed Von Iffland to undertake a functional reorganization of the island.

In 1866, the huts and hospitals, several of which went back to 1847, were urgently repaired, as were numerous other buildings. The «healthy» and «sick» sectors were reversed; the «healthy» camp was henceforth located on the eastern side of the island, while the «sick quarters» were installed on the western side. New hospital or convalescence blocks for cholera patients were also built, not to mention a second wharf, the «lower wharf», which could directly serve the eastern sector of the island.

Thus, on the eve of Confederation, in early 1867, scattered over the 650 arpents of Grosse Île were the following structures and buildings: two landing stages, two chapels, two presbyteries, one guardhouse, two stores, 20 hospitals (of varied roles and sizes), the old Duplain farmhouse, and some 20 dwellings. The Canadian government, under the federal regime, continued to redevelop the quarantine station. Immigration forecasts for the next few years predicted large numbers of arrivals, at a time when Europe continued to grapple with infectious diseases as diverse as they were dangerous. In 1867, 1868 and 1869, 100 or so immigrants actually died on Grosse Île, and the authorities no longer questioned the essential role of this «advance post».

But curiously enough, the 1870s passed peaceably at the St. Lawrence quarantine station. Under the watchful, competent administration of the new medical superintendent, Frédéric Montizambert, appointed in 1869, the island mourned only 42 deaths during that decade. Obviously, an effective modus operandi was now in place at the station, but Montizambert suspected the lax quarantine regulations of distorting the real picture of sick immigrants. He therefore continually asked for stricter controls.

It was at this time that Grosse Île was given a reception block for immigrants. Three two-storey terraced housing blocks were also built for station personnel and their families; two of these were erected in the central part of the island (1866 and 1873), while the third, the «lower block», was put up in the eastern part in 1877.

The Catholic and Protestant chapels were in turn rebuilt, this time in the central sector of the island. The superintendent urged the central government to emphasize renovation and construction work, but the major economic recession of 1873-1878 substantially curbed capital projects during the remainder of the period.

(6) The term «lower wharf» arose spontaneously to differentiate it from the main wharf further upstream, known familiarly as the «upper wharf». These toponyms are typical of locations along a watercourse. By analogy, the eastern and western sectors of the island and certain buildings located there would include «upper» or «lower» in their names (e.g. «upper block»).

(7) As soon as it was placed in service, the lower wharf would be used for receiving supplies and evacuating convalescents; in this way, contact was avoided with the sick, who arrived by the other wharf.
In Quebec City, the salient feature of immigration to Canada from 1881 to 1900 was the growth in the population of British origin, who accounted for more than 64 percent of new arrivals, compared with less than 60 percent during the previous period. This increase was no doubt attributable to the recruitment and propaganda structure set up in the British Isles, particularly following Confederation.

During this 20-year period, an average of 26,800 people landed at Quebec City each year. This was less than during the initial period (1832-1860: 30,000), but more than in the previous period (1861-1880: 25,000). Aside from the British, Scandinavians still ranked an easy second, although their proportion fell in the last years of the century from 30 to 20 percent of the immigrant population. This decline was offset by the arrival of numerous Continental Europeans. In immigration terms, the phenomenon of ethnic diversity was now well under way; moreover, at this time an increase in the number of immigrants from the Middle East was seen (1.8 percent of immigrants).

Among other features of these years: needy immigrants, often without a trade, increasingly gave way to numerous entrepreneurial British farmers, often even enjoying substantial financial means. The rapid decline of agriculture in Great Britain, combined with the opening up of land in Manitoba, induced a large number to emigrate. The new arrivals even headed for the Northwest Territories. One of the consequences of this movement was the increase in the proportion of arrivals who chose to remain in Canada (60 percent in 1880, 68 percent in 1897).

At this time, Quebec City remained by far the main Canadian port of entry for European immigrants. Nonetheless, in the early 1880s, a number of them landed in Halifax, where the railway took them over and conveyed them to the hinterland. After 1896, towards the end of the period, St. John, New Brunswick, would also receive its share of arrivals, almost exclusively from the United States.
During the 1880s, Quebec City equipped itself with a completely new structure for receiving immigrants. Towards 1885, as the Pointe Lévis reception station was no longer up to the task, it was decided to erect, at Bassin Louise on the Quebec City harbourfront, a building that was as spacious as it was versatile. This 400-foot-long structure, inaugurated in 1888, offered arrivals comfort, safe haven and services all together.

Thus, under the same roof were to be found dining rooms, bedrooms, stores for provisions, Canadian immigration office, port physician's office, customs, telegraph office and, finally, the Canadian Pacific Railway ticket office. Trains equipped with sleeping cars ran alongside the station and took on board the immigrants, whose stay in Quebec City was thus kept to a minimum. Also in 1888, an identical modus operandi was put into effect on the south shore of the St. Lawrence, in Lévis, by the Grand Trunk Railway Company.

Following the economic crisis of 1873-1878, during which immigration at Quebec City fell to 7,700 (1877), a significant recovery took place in the early 1880s: 30,200 immigrants in 1881, and 46,000 in 1883. In this context, Dr. Montizambert, still the medical superintendent of the Grosse Île quarantine station and a specialist in infectious diseases, entered wholeheartedly into the «great scientific revolution in medicine» that the 1880s and 1890s were to see. Louis Pasteur, Robert Koch and others had already discovered the pathogens of numerous infectious diseases, and Montizambert intended to make good use of these years by making Grosse Île a quarantine station at the leading edge of scientific thought and technology.

So Grosse Île entered the disinfection age. Steamships had been disinfected since 1886 from the small yacht Hygeia, on board which Montizambert had had sprinkling and fumigation equipment installed. In the absence of a wharf capable of receiving increasingly large boats, the superintendent therefore sent the Hygeia out to meet them in midriver. In addition to disinfection, the Hygeia handled ship inspection and landing of the sick. The system was rapid and effective.

Shortly after the construction of a real bacteriological laboratory on Grosse Île (1891-1892), a disinfection building for passengers' baggage and belongings was erected close to the station's western wharf. It housed three cylindrical steamers, whose effectiveness was impeccable. At the same time there appeared a laundry, baths and latrines, fed by a water distribution system and a 50,000-gallon reservoir.

Following the concept that «prevention is better than cure», Montizambert, throughout this period, sought to implement regulations on Grosse Île targeting mandatory vaccination of immigrants against smallpox. For greater effectiveness, he wanted this vaccination to take place prior to departure from Europe or Great Britain; however, in the absence of such a policy, over the years, he saw to eliminating the loopholes in Canadian vaccination regulations. In 1887, the new quarantine regulations, while requiring the immediate inspection of any ship arriving from abroad, made the vaccination of anyone travelling on board these ships mandatory. Those refusing would have to resign themselves to undergoing observation quarantine.

The construction of a new hospital, in 1881-1882, was the opportunity for the medical superintendent of the quarantine station finally to assert his views on the functional layout of the island. Not only did he agree to use the entire surface area of

(8) This building stood where the grain elevators are today.

(9) In 1896, and again in 1897, these regulations were strengthened so that by the end of the period most of the Grosse Île's superintendent's demands would be met.
the island in order to make a clear separation between the «health» sector and the «hospital» sector, but it was also important that the latter sector occupy the eastern part of the island. In fact, this zone already housed the medical assistant’s residence, nurses’ homes, and several hospital outbuildings. Furthermore, the only wharf that could be fitted out for deep water was the western sector wharf, where everyone presumed to be in good health landed, that is, the vast majority of passengers. In addition, numerous facilities for healthy travellers were already in place in this sector: laundry, disinfection building, shelters, etc.

The new hospital was therefore built on Montizardbert’s chosen site in 1881-1882, in the eastern sector. Under the same plan, in 1893, in the western part of the island «a very comfortable immigrant building for lounge passengers» was built, accommodating 124 and offering the same comforts and conveniences as on the steamers. As to the second-class passengers, housing was set up for them at the same time in two existing buildings in the same sector, accommodating 200.

The 1880-1900 period, while it saw the arrival of the telegraph on Grosse Île (1884-1885), above all saw coordination of the immigrant reception and control services in the Quebec City sector. The Grosse Île quarantine station thus combined its efforts not only with the Pointe Lévis and Quebec City (Bassin Louise) stations, but also with the Rimouski inspection station. The latter was responsible for verifying the state of health of mail boat passengers; it also inspected certain steamers landing travellers headed for the Maritime provinces or preferring to continue their trips by railway. Since 1889, the Rimouski station had been under the authority of the Grosse Île medical superintendent.

Finally, it was during this period that the central sector of the island would see the beginnings of what was known as the «village». The implementation of the overall development plan for Grosse Île, as conceived by superintendent Montizardbert, opened the way for gathering in this central area all the facilities and services associated with the daily lives of station personnel and their families. Since the relocation in the 1870s of the Catholic and Protestant chapels to this part of the island, this role would continually develop; indeed, the construction of presbyteries, residences, various dwellings, workshops and other service buildings during the following two decades would leave a lasting mark on the landscape and history of this sector.
In Canada, the economic boom of the early 20th century led to an influx of immigrants unprecedented in the history of the country. Despite a pronounced decline during World War I, immigration in the first two decades of the century reached levels approximately three times higher than in 1880-1900: 3.4 million new arrivals, compared with 1.2 million. Roots still encouraged numerous Britons to emigrate to this country. Furthermore, Canada enjoyed an unequalled recruitment and propaganda organization in the British Isles which ran really smoothly during these years.

For instance, numerous firms and agencies on either side of the Atlantic now handled the passage and reception of groups of female and juvenile immigrants. Alongside the close cooperation of the large British steamship companies, these factors were decisive in the immigration of these groups.

During 1901-1920, the proportion of Scandinavian immigrants continued to decline in Quebec City. From 30 percent (1861-1880), and then 20 percent (1881-1900), it had fallen to a mere 9.4 percent, placing Scandinavia in third place among immigration source areas. Ranking second now were the countries of Eastern Europe, whose representation rose from 5.8 percent (1881-1890) to 16.3 percent of new arrivals. This development was certainly the dominant feature of the period since, during this time, Western Europe showed a much weaker increase: from 5.9 to 7.5 percent.

Finally, the 1901-1920 period saw increased immigration from the Middle East (2.5 percent), and a definite openness to all corners of the earth: Australia and New Zealand, the Far East, South Africa, North Africa, the West Indies, etc.

In Quebec City, at the same time, a phenomenon of similar scope was to be seen: following the 536,000 arrivals during 1880-1900 were 1.6 million people. This represented an annual average of 80,000 genuine immigrants (before 1915, this average even reached approximately 92,000).

Once again during this period, Great Britain provided more than 60 percent of passengers landing at Quebec City. Canadian ethnic and cultural

Although taken later, this photo of Grosse Ile is a reminder of the pre-First World War years when an unequalled number of immigrants of all classes arrived and considerable efforts were made at the quarantine station to receive them. Hotels, running water (water tower), and landing facilities (extended west wharf) were some of the improvements made at the time.

Bernier Maritime Museum Foundation

To all these new arrivals, Canada now offered several ports of entry. In addition to Quebec City, we should mention Halifax and St. John in the Maritimes, Victoria and Vancouver on the Pacific and, in Central Canada, Montreal and Hamilton, two cities which received an ever growing number of Americans travelling to the interior of the continent.

During this time, Quebec City nonetheless remained the main ac-

Grosse Ile

17
cess route to Canada for immigrants; but it now accounted for just 48 per cent of entries. The proliferation of inland continental routes and Canadian railways short-circuited the classic St. Lawrence route via the Port of Quebec.

During the first two decades of the century, the number of sick visitors to Grosse Île grew much more quickly, in proportion, than that of immigrants landing at Quebec City. The island, which had received an average of a mere 46 patients a year between 1895 and 1900, saw this number increase tenfold (484 admissions) from 1901 to 1912. During 1909-1912 alone, this annual average leapt as high as 755.

Since 1899, Dr. G.E. Martineau had been the new medical superintendent of the quarantine station, and he would remain in that position until his death in 1929. His predecessor, Dr. Montizambert, had been promoted Director General of Public Health and Superintendent General of Canadian Quarantines the same year (1899) and, in this role, would continue to be closely associated with the history of Grosse Île. With Canadian immigration coming now from virtually every continent, Montizambert, from the start, traced on the globe all infectious diseases likely to come to our shores. And these were manifold at the start of the century: beriberi, cholera, smallpox, etc., but above all bubonic plague, which was rearing its head virtually everywhere at the time, particularly in China, Australia, South America, Europe and even the British Isles.

During this period, especially before 1914, the development of health and hospital facilities on Grosse Île was therefore spurred on by two intimately linked phenomena: the strong growth of immigration to Quebec City (and admissions to Grosse Île itself) and the specialists' virtual certainty that terrible epidemics would soon be striking the country. Passengers' somewhat frequent complaints concerning poor detention conditions on the island also led to government intervention during these years. In 1912, for instance, the station received hundreds of people with scarlet fever and diphtheria in particular; since the hospital erected in 1881-1882 had only 100 or so beds, many were the sick who therefore had to take refuge in tents, hay sheds, etc.

This was the context in which a hospital complex for infectious diseases was proposed as early as 1910-1911; the complex was to include five blocks and various administrative buildings. The first foundations were actually laid in 1913, but the Great War, with the accompanying collapse in immigration, abruptly interrupted this work, which would never be resumed after the conflict was over.

From 1910 onwards, however, numerous construction projects enjoyed a happier fate. For instance, huge first- and third-class hotels were erected in the western part of the island to provide better accommodation for healthy immigrants; the old «first-class» dwelling, for its part, was placed at the disposal of second-class passengers. This classification of dwellings had been requested by the shipping companies in light of the different categories of travellers carried on board ship.

After the first three built during the 1861-1880 period, a fourth block of adjoining dwellings for personnel was put up in 1905, at the head of Cholera Bay; it would henceforth be known as the «upper block». Numerous residences were also built for physicians, nurses, the Public Works Officer, gatekeepers, etc. A school and a new Marconi radio station also enhanced the village with their presence. In the upper sector, during this time, among other buildings there appeared a new water tower, a guardhouse, a bakery and a disinfection building, not to mention the monument dedicated to the Irish (1909) and a wharf that was finally enlarged.

During this period, the operations of the quarantine station branched out yet further, since the stream of immigrants up the St. Lawrence could not be controlled and handled by Grosse Île personnel alone. Thus, from 1912 onwards, routine ship inspections took place from Pointe au Père, near Rimouski. In Quebec City, during this time, a hospital for immigrants was built in the St. Sauveur neighbourhood, on the site of Savard Park (1905-1907).(10) All these reception and assistance facilities would, moreover, be put to use in 1918 when the infamous Spanish flu epidemic appeared.

(10) In 1958, this hospital would become the Hôpital du Christ-Roi of today.
In the early 1920s, the paralysing shock of the Great War was already in the past, and the stream of immigrants to Canada resumed its pre-1914 pace.

The strength of the wave, however, was no longer the same. Despite the war years, no fewer than 3.4 million people had immigrated to Canada between 1901 and 1920; during the next two decades, barely 1.4 million people would do so. In fact, this decline was largely attributable to the poor performance of the 1932-1941 period, years of economic crisis and then of worldwide conflict, which yielded a mere 10 percent of these 1.4 million new arrivals. In other words, whereas average annual immigration to Canada stood at 123,000 people during 1921-1931, it fell to 15,000 during 1932-1941.

In Quebec City, the same phenomenon was to be seen: 658,000 immigrants landed there between 1921 and 1941, compared with 1.6 million in 1901-1920. Here too, 94 percent of these immigrants set foot in Quebec City during 1921-1931.

Furthermore, these two decades marked another turning point for Quebec City as a port of entry. Indeed, while during 1921-1931 the provincial capital received approximately 45 percent of all Canadian immigration (as against 48 percent during 1901-1920), this share fell to 26 percent between 1932 and 1941.

Canada-wide, 1921-1941 saw a substantial decline in British immigration. For the first time, Britons (47 percent) did not make up the majority of new arrivals. Asia accounted for a mere 1 percent of immigrants; the Asian contingent would grow after World War II. For the moment, it was primarily the peoples of Eastern, Central and Western Europe who set the pace of immigration between the wars, not to mention the Jewish contribution (4 percent).
In the wake of the Great War, the Grosse Île quarantine station appears to have been in a rather deplorable condition, despite the numerous constructions it had seen shortly before the conflict. Not only did the old project (1910-1911) for a hospital complex for infectious diseases not break ground, but the island's two wharves still awaited necessary renovations and extensions. Furthermore, basic maintenance on most station buildings had not been carried out for a very long time. Hundreds of doors and windows had broken panes or no putty, and numerous roofs no longer held water.

Certainly, Grosse Île saw few immigrants during the war years, but there was more to it than that. Since Confederation, the Canadian government had sunk more than $1 million into Grosse Île, and Parliament was most reluctant to invest any further sums there. What is more, some claimed that the quarantine station would be more appropriately located in Quebec City, where ships finally berthed. Lastly, the actual administration of the station by superintendent G.E. Martineau was called into question.

However the case may be, the early 1920s saw major administrative and operational upheaval at the quarantine station. In spring 1921, first of all, administration of Grosse Île, with respect to engineering and architectural work, was centralized in Quebec City; there was thus no longer an engineer in residence on the island or in Montmagny, as had been the case for some years. The Department of Public Works insisted that the rationale for this change was economy and efficiency.

Shortly afterwards, in February 1923, an Order-in-Council cut off one of Grosse Île's main functional components: quarantine officers would now be posted to Pointe au Père, near Rimouski, where the St. Lawrence pilots went on board vessels. Pre-quarantine would take place at this location, that is, the inspection of ships and immigrants sailing upriver.

It was agreed that passengers with serious infectious diseases would be landed at Grosse Île, while those with less serious infections would be received in Quebec City, at the hospital for immigrants in Savard Park. This change, it was openly pointed out, aimed among other things to meet repeated demands from the shipping companies, which had never appreciated the stops at Grosse Île. It was application of this new policy that made it necessary to expand the Savard Park hospital, in 1929.

Over the years, this modus operandi probably proved satisfactory since, in February 1937, following a number of years of economic crisis that were not conducive to immigration, the Canadian government chose to completely close the Grosse Île quarantine station, which was considered too costly and not sufficiently useful. Once again, the Savard Park hospital in Quebec City was called upon to fill the vacuum; in its renovated and expanded form, it would be able to accommodate not only individuals with infectious diseases, but also (as at Grosse Île) anyone who had been in contact with such diseases.

Between 1921 and 1937, Grosse Île would have to be content, mainly with repair and maintenance work largely carried out before the Depression of the 1930s. From 1920-1921, owing to the prolonged deterioration of station buildings and facilities (which had seen little use during World War I), long lists of urgent work were submitted yearly for government approval. The latter were all the more willing to endorse these maintenance activities since the costly construction projects had been scrapped.

Among work requiring substantial investment, the renovation of the western wharf (1930) should, however, be mentioned, necessitated by the abandonment in 1923 of the work to salvage the east wharf, as should the renovation and expansion of the immigrant reception and disinfection complex at the end of the western wharf (1928-1930). This centre would now include, in addition to the disinfection building, reception buildings and the housing for the island generator and boilers.

Shortly after the closing of the quarantine station, during World War II, Grosse Île housed the Defence Research Board, which used the site as an experimental station for bacteriological warfare; in particular, a cattle plague vaccine was discovered, and advanced research was conducted on the anthrax bacillus. In 1945, the research station was closed; only a caretaker remained on the island.

In 1956, the Grosse Île installations came into the hands of the Department of Agriculture, which established there its Animal Pathology Division, responsible for studying animal diseases and training its personnel. From 1965 onwards, finally, the same department's Contagious Diseases Division also chose to use Grosse Île, in wintertime, as a quarantine station for imported animals.
DESCRIPTION AND ANALYSIS OF RESOURCES

HISTORICAL RESOURCES

Despite the ravages of time, substantial, diversified historical resources lie hidden yet today on Grosse Île. Aside from several dozen structures and buildings left by the quarantine station's various periods, the island also offers archaeological remains associated with the different phases of occupation of the site; finally, a multitude of objects found on site are associated with the functions and activities of the station and the subsequent period of occupation.

Architectural resources

Representativeness and importance

The architectural resources of Grosse Île are the result of more than 150 years of occupation of the island. From the outset, one must wonder how representative these resources are of the major periods of development of the quarantine station and the more recent functions of Grosse Île since World War II.

First, we should stress that the morphology of spatial organization on Grosse Île is very old. The concentration of buildings and facilities on the southern shore of the island, established from the station's early years, has always been preserved. The same is also true for the division of the island into different sectors where the various functions associated with the quarantine activity were allocated. The current location of the architectural resources still reflects this traditional distribution as it may be seen on mid-19th century maps.

With few changes, the road running the length of the island corresponds to the one laid out in the early years of the settlement. The remains of the eastern (lower) wharf and the site of today's western (upper) wharf still testify to the operating procedures in place at the time of the great typhus epidemic of 1847. Finally, since 1832, a signalling battery and the flagpole have been part of the Grosse Île landscape.

As to the buildings, these necessarily present a more recent portrait, which in a way conveys how the functions evolved. Despite this, each major period of occupation is represented by the 40 or so architectural units which still shape the environment of Grosse Île. Some 10 buildings (#55, #57, #58, #60, #61, #62, #63, #86, #95 and #96) (11) are associated with the most recent functions, that is animal quarantine and Agriculture Canada's research station. These are primarily functional units (stables, barns, laboratories, sheds and shacks, etc.), some of which nonetheless are impressive in size. One stable (#10) and two sheds (#7 and #9) more specifically recall the occupation of Grosse Île by the Canadian Army during World War II.

(11) The numbers correspond to the numbers on the structure and building identification plan. In addition, a complete list of structures and buildings on Grosse Île is presented in Appendix B.
DISINFECTION BUILDING

The immigrants' disinfection building is the largest structure on Grosse Île that dates back to the human quarantine period. The origin of this almost entirely wooden construction goes back to 1892 when the main building (72 by 40 feet) and its annex (50 by 24 feet) were erected. It housed three pressurized disinfection steam baths at the time. There is also a place for cauldrons, a room for the dynamo, a baggage storage area and a shower room. The building underwent successive renovations and extensions, the last being in 1927, ten years before the station was closed.

Substantially extended, the building served two main purposes: disinfecting immigrants and their belongings, and producing the electrical energy needed to operate the quarantine.

On the second floor of the central block, the vast shower room remains one of the most moving and evocative sites of the immigrants' stay on the island. The room is lit by a skylight and windows on the southwest side. On either side facing the central corridor are a series of two rows of showers back to back against two other rows facing the side walls and corridors. Each shower area is divided into two sections: a small entrance where each person was manually disinfected, then the shower stall itself with a shower head flanked by six semi-circular horizontal sprinkler pipes.

Photo: Canadian Parks Service · Louis Jacob Neg. 124/00.48/PR-6/S-45-1

Most of the buildings on Grosse Île are associated with the final years of the human quarantine station, more specifically the years of reorganization characteristic of the first quarter of the 20th century. In fact, more than 20 buildings date from this time. A number of them are strictly functional and express the quarantine activity as such, with the related services. These include the first- and third-class hotels (#14 and #19), the bakery (#18) and the laundry (#32), all located in the western sector; the guard post (#35), a laboratory (#81), the Marconi station (#66) and the hospital laundry (#98) for their part are scattered in the other two sectors of the island.

A large number of dwellings were also built during this period, most of them located in the central sector of Grosse Île, where the village used to be: among them are the gatekeeper's house (#34), a multi-family dwelling (upper block) (#39), the Public Works Officer's house (#43), two physicians' residences (#68 and #77), one employees' residence (#79) and the nurses' home (#84).

Several service buildings, including the school (#71), a workshop (#52) and a shed (#73), were erected in the same period. Finally, there is another employees' residence (#89), located in the eastern sector of Grosse Île, near the remains of a former hospital. Other buildings, including the disinfection building (#29) and the Catholic presbytery (#49), have their roots in an earlier time but were substantially altered in the first quarter of the 20th century.

The architectural resources of Grosse Île also harbour evidence of the new reception services set up in the late 19th century. It was at that time, among other things, that a first section of the long disinfection building (#29), located near the main wharf, was built. Today's second-class hotel (#22), the small kitchen (#17) and the medical assistant's house (#38) are other facilities from this period.

Grosse Île also offers two examples of religious architecture, the Catholic and Protestant chapels (#48 and #42). With the superintendent's shed (#47), these are the only representatives of the first buildings constructed on Grosse Île after the Canadian government took charge of the quarantine station. All three were built between 1870 and 1880.

Finally, three buildings, the lazaretto (#100), the old wash house (#16) and the electrician's house (#11), are associated with the first years of the quarantine station, characterized by the context of major cholera and typhus epidemics. The Catholic presbytery (#49) also dates from this period, but was substantially altered at a later date.
In terms of architectural style, the buildings on Grosse Île obviously illustrate the taste and designs conveyed by the architects of the Department of Public Works. A number of salient features are worth mentioning.

As one arrives on the island, impressive architectural volumes stand out from the landscape. These are essentially functional units, designed above all to meet the station's operational needs. But the facades of the buildings present a certain aesthetic elegance. Thus, the second-(formerly first-) class hotel (#22) and the first-class hotel (#14) show details typical of resort architecture: white-coloured, long galleries, ornate central sections, etc., in short, a decor perfectly in tune with the more affluent immigrants for whom these buildings were intended. The front of the third-class hotel (#19), by contrast, presents a more austere style, recalling the facades of numerous colleges built in Quebec in the early 20th century. The facade of the disinfection building (#29) also shows aesthetic elegance. The Department of Public Works architect who gave the building its final form, in 1927, used a false, «boomtown» front process to unify the facade of the building, which consists of various utilitarian volumes erected at different periods. The same solution would be applied several years later to the nearby laundry (#32).

The numerous dwellings built on Grosse Île in the late 19th and especially the early 20th centuries are associated with different stylistic movements observed in Quebec during that period. Thus, several examples of mansard or French roof houses are to be found, inherited from the architecture of the Second Empire, among them residences #79 and #89 and the Public Works Officer's house (#43). The single dormer window placed in the centre of the curbed roof nonetheless sets the Grosse Île examples apart from Quebec vernacular architecture.

The cubic or foursquare house became the design of choice for physicians' residences (#38, #67 and #77) on Grosse Île. Derived from the Italianate villas of the mid-19th century, this style was widely used by the wealthy class in Quebec at the turn of the 20th century; several presbyteries built during this period reveal similar inspiration.

The nurses’ residence (#84), with the large dormer window on its facade, and the gatekeeper's house (#34), with its panoramic balconies, are also in keeping with the resort architecture movement.

The multiple-dwelling house is another major feature of the architecture on Grosse Île. The multi-family dwelling (upper block) (#39) is the only survivor of the four units previously built on the island. This row house design is a descendant of the terrace housing developed in 18th century England. Used primarily in urban settings, this type of dwelling would be established in Quebec and the rest of Canada only much later in the 20th century.

The lazaretto is the only building left of the second generation of hospitals built on Grosse Île in 1847. Initially, it was designed as a detention centre for healthy immigrants, but it soon became a hospital after the east section of the island was transformed into a hospital sector. Eleven other buildings were erected a that time, however, they eventually disappeared so that, as early as 1883, only the present lazaretto here witness to the construction campaign of 1847. Later it was used for smallpox patients, which gave it the nickname «hospital for the pockmarked».

By its shape and construction, the hospital followed the popular architectural trend for outbuildings such as sheds and craftsmen’s workshops. The only thing that set it apart was its size.

This oldest and most venerable monument on the island may be considered a veritable symbol of the fight against contagious diseases with which Grosse Île was destined to struggle during the period of human quarantine.

Photo: Canadian Parks Service - Jacques Beardsell
Neg. 124/00.100/PR-6/S-174-1

Grosse Île
FORMER WASH HOUSE

This building with its rather large hipped roof and row of dormer windows was one of the most elegant structures on the island. Built on an east-west axis on the shoreline, it is backed by the rocky ridge that stretches in front of the base of the first-class hotel. Dating back to 1855-56, the former wash house is one of the oldest buildings left of the quarantine station.

As a wash house for the immigrants, it was strategically situated, at the request of the superintendent of the time, Dr. Douglas, as close to the river as possible «so that the émigrés could have easy access to water and also for the drainage of dirty water». This also explains why there are several large doorways as well as stoops and stairways on the side facing the river. Inside, the fireplaces used for boiling wash water reflect the building's former main function.

In terms of building and materials, the former wash house and the lazaretto form a pair. However, a certain number of elements which have remained intact in the wash house single it out. This is fortunate since the wooden structure bears witness to the expertise of the carpenters who built it.

Photo: Canadian Parks Service - Robert Piette
Neg. 124/00.48/PR-6/S-31-4
In short, the architecture of the buildings on Grosse Île is dominated by stylistic components typical of the turn of the 20th century, which indeed corresponds to the quarantine station's last major period of activity. Grosse Île also conceals a number of examples inspired by architectural movements more typical of the mid-19th century, thus of the first years of operation of the quarantine station. As an example, note the neo-Gothic arrangement of the two chapels.

Overall, the architectural resources of Grosse Île display other major features, particularly in terms of technical know-how. The types of foundations of the buildings reveal significant changes which occurred in the station's development. The oldest buildings were all designed with wood piling or masonry foundations, reflecting the seasonal occupancy to which they were originally destined. The buildings constructed at the turn of the 20th century had masonry or concrete foundations, with basements, providing greater comfort and allowing for year-round occupancy. The changes made to the foundations of the electrician's house (#11) and the Catholic presbytery (#49) — both erected in mid-19th century — are very revealing in this regard.

The architectural resources of Grosse Île also reflect the profound transformations in construction techniques which took place in Canada early in the 20th century. Some

SECOND-CLASS HOTEL

Built on a slope in 1893, the second-class hotel is a huge wooden two-storey building with a front façade stretching 46 metres long. A rear wing served as the kitchen. A long veranda runs the length of the main façade and looks out over the river. This veranda once gave a distinct impression of hospitality. In fact, it is one of the first buildings that can be seen when one arrives at the west wharf.

This building is so visible and inviting because it served as the hotel for first-class passengers until a new hotel was constructed in 1912. Once it was 'demoted', it was used for second-class passengers.

Today, only the second floor retains almost all of its original lay-out. The two sections of rooms have remained intact. Inside the rooms, which are all a standard 1.8 m by 2.1 m, traces of the places where bunks were attached, shelf brackets and old graffiti can still be seen.

Photo: Canadian Parks Service - Jacques Beardsell
Neg. 124/80.48/FR-6/S-178-5
ANGLICAN CHAPEL

Built in 1877-78, the St. John the Evangelist Anglican chapel is a wooden construction in the neo-Gothic style. The exterior is covered with board and batten, a method of siding that was favoured by the American architect Andrew Jackson Downing in 1850. The vertical lines of the covering seemed more logical to him than horizontal lines, given that the structure of the walls was built of vertical members.

This procedure reflected externally the internal mechanics of the wall, the material and the veritable sense of force in action. The result, in Downing's perspective, gives the building a picturesque character which, in this case, harmonizes perfectly with the choice of the location. The chapel was built in the middle of a wooded area on top of a rocky ridge that plunges to the river below, thus appropriately marrying the style of the chapel to the building site.

Photo: Canadian Parks Service - Jacques Beardsell
Neg. 124/00/PR-6/S-180-9

buildings have industrially produced materials, as opposed to crafted techniques of assembly used until the late 19th century. Examples of this are today's second-class hotel (#22) (originally built in 1893 as a first-class hotel) and the first-class hotel (#14), built in 1912. These two buildings nonetheless present similar spatial organization.

Finally, the architectural resources of Grosse Île include a number of examples of avant-garde know-how. The reinforced concrete structures of the first- (#14) and third-class (#19) hotels are among the first examples produced in Canada. Along the same lines, the installation of electric lighting in buildings on Grosse Île, in the early 20th century, would precede its widespread use in Quebec by several years.
Heritage value of architectural resources

The architectural resources of Grosse Île as a whole are subject to application of federal policies with respect to real estate management, in order to determine their heritage value according to precise, pan-Canadian criteria. At the Department of the Environment, the Cultural Resources Management Policy incorporates the Federal Heritage Buildings Review Policy (FHBPRP), which binds all federal departments. This latter program has led to the evaluation of 35 buildings on Grosse Île built more than 40 years ago and under the responsibility of the Departments of Agriculture and the Environment.

The buildings were assessed on the basis of their association with the major themes of Canadian history, with respect to their architectural qualities and the specific nature of their immediate environment. On Grosse Île, five buildings were classified as having very high heritage value in Canada, namely:

- reception and disinfection building (no. 29)
- first-class hotel (no. 14)
- second-class hotel (no. 22)
- old wash house (no. 16)
- lazaretto (no. 100)

A further 15 buildings were also recognized for their heritage value, but on a secondary level. These were:

- third-class hotel (no. 19)
- bakery (no. 18)
- gatekeeper’s house (no. 34)
- guardhouse (no. 36)
- medical assistant’s house (no. 38)
- upper block (no. 39)
- Anglican church (no. 42)
- Public Works Officer’s house (no. 43)
- Catholic church (no. 48)
- Catholic presbytery (no. 49)
- Marconi station (no. 66)
- physicians’ residence (no. 68)
- physicians’ residence (no. 77)
- village school (no. 71)
- nurses’ home (no. 84)

Status and condition of resources

All in all, a consistent global judgment cannot be made as to the current status and condition of structures and buildings; not all the resources are «deteriorated», but neither can one claim that they are all «in good condition». To judge solely by their general appearance, several buildings may seem in very poor condition. But a more thorough review has enabled us to identify the most real threats and, above all, to locate the causes of the degradation problems.

Thus, the deterioration of the architectural resources is primarily attributable, in most cases, to water infiltration, principally through roofs. Most of the roofs are largely constructed of Northern white cedar shingles. What began as minor leaks became major with time, finally leading to the complete degradation of large surfaces. Water, which penetrated in large amounts, has crumbled plaster work, and led floors, flashings and studs to rot; in winter, this water turns to ice and has undermined the foundations and caused much other damage.

In 1989 and 1990, various salvage operations on the most threatened buildings were undertaken with a view to interrupting the deterioration process. All the work undertaken was associated with temporary protection measures.

The trees and shrubs growing in the immediate vicinity of the buildings were cut down in order to eliminate a source of humidity. In some cases, the gradients were reversed in order to keep surface runoff away. All roofs were redone in asphalt shingles laid on plywood. All openings and missing frames were boarded up.

Once the watertightness of the shell was re-established, ventilation grilles were installed at the base of the buildings and on the rooftops in order to create fresh air currents and maintain a low level of relative humidity.
PRELIMINARY ARCHEOLOGICAL SURVEY

The study of the historical potential was done in three stages:

1. review of historical material (old maps, iconography and written sources) in order to identify and locate any potential archaeological resources; the data gathered during this stage were placed against the various components of the existing landscape in order to detect potential disruptive forces.

2. on-site archaeological activities, primarily of two types. The archaeological exploration was thus conducted by means of surveys using mechanical augers, surveys dug according to stratification, and archaeological monitoring of excavation work performed in the context of installation of services and temporary protection work on buildings.

3. analysis of the data gathered in the previous stages.

Photo: Canadian Parks Service
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Archaeological resources

Since Grosse Île had never in the past been the subject of archaeological excavations, the prime phase of taking over responsibility for the island's archaeological resources first involved establishing the site's real potential, that is, locating spots likely to have been occupied in the past.

Potential of the paleohistorical period

The island's paleohistorical potential was studied in two quite separate stages: theoretical assessment of the presence of archaeological sites from the paleohistorical period, and on-site activities for validation purposes.(12)

The theoretical assessment revealed that since the environment presented a moderate wildlife potential, small human groups may have used the island sporadically, during the large spring and fall wildfowl migrations in particular. Information on paleohistorical sites near Grosse Île suggests the continued presence of human groups in the region for at least 4,000 years. The on-site operations, however, revealed only a few lithic artifacts, indicating the presence of man on the island at least on an occasional basis; no sig-

(12) The theoretical assessment was carried out first from an analysis of the island's natural environment since the last glacial retreat (12,500 B.T.). This assessment also included an analysis of the information available on paleohistorical and ethnohistorical occupation in the sector between Île aux Oies and Île d'Orléans, with a view to imagining a plausible scenario for the paleohistorical occupation of Grosse Île. First, then, merging of the data collected on the physical and human environments made it possible to establish several zones with archaeological potential. Second, on-site activities helped to confirm the theoretical potential and identify new zones which might have been the site of temporary encampments on Grosse Île.
nificant remains or sites were found. The paleohistorical archaeological potential was thus defined generally as «mediocre to low».

Potential of the historical period

The activities carried out in the western sector of the island revealed archaeological resources belonging to various phases in the station's development; for instance, an intensive excavation of the approximate original site of the first hospital and its dependencies revealed three levels of occupancy. With the exception of this zone, the selective activities covered only a small part of the western sector; but in light of the archaeological resources identified during the stages preliminary to the actual exploration and of those uncovered, the archaeological potential of this sector was nevertheless considered «high».

No evidence of the military occupation has been uncovered to date in the central sector. On the other hand, the archaeological resources found illustrate the gradual development of the village, where most of the personnel assigned to operation of the quarantine station lived.

As to the eastern or lower wharf, this was the subject of a planimetric survey. Like the western sector, the archaeological activities covered only a tiny part of the central sector. In light of the results obtained, however, it is considered that the strip of land on either side of the main road has «high» archaeological potential, except for the perimeter where the animal quarantine facilities were erected in the 1960s; since this is too disturbed, its potential is deemed «low» or «non-existent».

The archaeological resources of an architectural nature uncovered in the eastern sector correspond to three main types of functions: accommodation, maintenance and services. Traces of tent pegs, several wooden supports or pilings belonging to the infrastructure of the hospitals as well as masonry remains are evidence of the accommodation of sick immigrants. Several masonry and concrete foundations are associated with the residential function of medical and support personnel and other occupants of the sector. Masonry and wood remains have also made it possible to identify the locations of several annexes. Finally, masonry wells and cesspools were located, as well as concrete septic tanks, evidence of the presence of these services in the eastern sector of the island.

In light of the results obtained from the selective activities carried out in the eastern sector, the archaeological potential was considered to be «generally moderate».

On the basis of the results obtained to date, which must be viewed as preliminary since the data is still in the process of being analyzed, the Grosse Île quarantine station must be considered overall to present «high to moderate» archaeological potential.

Ethnographic resources

A large number of historical objects were found on Grosse Île, providing evidence of the various activities which took place there in the 19th and 20th centuries, according to various themes.

1. Immigration: The artifacts grouped around this theme are largely objects associated with the immi-
2. Quarantine (service): These are artifacts for quarantine station operations, largely used by station personnel within the framework of their duties.

3. Quarantine (daily life): These artifacts are evidence of the actual activities and the living conditions of station personnel and are therefore associated with private life.

4. Disease-death: The artifacts associated with this theme correspond to equipment for carrying the sick: stretchers, ambulances, etc. Tombstones also belong in this category.

5. Grosse Île and the sea: This theme includes artifacts associated with sailing.

6. Bacteriological experiments: This includes laboratory equipment.

7. Army: The artifacts and equipment found are evidence of the military's stay on the island during World War II.

8. Animal quarantine: This is equipment associated with animal quarantine activities.

9. Commemoration: The artifacts grouped around this theme relate to elements and events intended to recall various phases in the history of Grosse Île.

All the artifacts in the collection, with the exception of those associated with the chapels, have been linked with one or other of these themes in order to draw up a summary table revealing, in statistical terms, to which of these different themes they belong. Thus, 1,106 artifacts were selected for analysis.
Immigration is represented primarily by artifacts associated with the reception building, where the overall disinfection process may be reconstructed owing to the site which still today provides evidence of this and owing to the numerous artifacts associated with it. The first-, second- and third-class hotels also provide evidence of this theme. It was primarily in the second-class hotel that the largest number of artifacts were found which will help to reconstruct the arrangement of immigrants’ rooms in the late 19th century.

As to the hospitals on Grosse Île, artifacts associated with them are unfortunately somewhat rare and provide little information. When the hospital built in 1881-1882 for infectious diseases burnt down in 1968, it certainly took with it a significant portion of the ethnographic resources associated with this theme.

Among particularly interesting artifacts are the battery of cannon, which recalls the fact that ships had to stop at Grosse Île to be inspected.

Artifacts linked to quarantine service activities are well represented. Thus, the laundry and bakery are two buildings whose respective equipment is extremely complete. Several artifacts associated with traditional activities (horticulture, textile work, etc.) and trades (forge, shoemaker’s, cabinetmaking, tinplate work, etc.) have been found and will subsequently be the subject of theme-based studies. The land and marine transportation equipment is particularly interesting, to mention only the ambulance, the ice canoe, a sleigh and sledges.

Several buildings were erected to house station employees. Among them, the nurses’ home and the physician’s residence contained the largest number of objects associated with the activities of daily life. Several articles associated with sports and winter entertainment were also catalogued.

**INTERIOR OF THE CATHOLIC CHAPEL**

On entering the Catholic chapel, visitors are immediately struck by the nave and choir separated by a balustrade of rounded balusters. The base of the altar supporting its tabernacle conceals the doorway opening into the sacristy. The altarpiece is simply attached to the choir wall.

Two pilasters rise up to an imposing cornice which surrounds the walls of the chapel. From the top of each capital, the cornice forms an arch which frames a canvas glued to the wall. Two statue support-consoles stand on either side of the central space completing the altarpiece. From the cornice runs the basket-handle arch of the decorative vault lined with transverse ribs decorated with moulding forming panels and rosace circumferences.

The interior décor was done at two different times: the decorative ceiling vault dates back to 1874 when the chapel was constructed. The panelling, the large cornice and the general interior décor were done in 1886. This interior décor resembles that of several rural churches built in small parishes during the last century.

Photo: Canadian Parks Service - Jacques Beardsell
Neg. 124/00.48/PR-6/S-112-2
These artifacts were the subject of a special theme-based study, since they have prime symbolic and commemorative value on this island, where thousands of immigrants died in the 19th century. Research is also being conducted on the disinfection activities in the reception building.

The furniture found appeared at first to be quite representative of all periods of the island's occupation. Following analysis, though, it was realized that most of this furniture went back to the beginning of the century or to the occupation of the island by the Department of Defence. Nonetheless, the fixtures, the heating, lighting and plumbing equipment, and the built-in furniture (cupboards, shelving, etc.) provide us with valuable clues concerning daily life on Grosse Île.

The occupation of the island by the Department of Defence is mainly represented by items of furniture. The animal quarantine activities are also represented in the collection by several artifacts.

The theme of disease and death is illustrated by the very fine ambulance (1889) and several stretchers. In addition, the island's grave markers and tombstones were also catalogued. The Anglican and Catholic chapels of Grosse Île still retain their original furniture today. The unique character of these chapels required quite special attention. That is why two descriptive catalogues have been specially devoted to the Chapel of St. John the Evangelist and the liturgical objects in the St. Luc chapel.

SERVICE INFRASTRUCTURE

On Grosse Île, a number of elements of the transportation and service infrastructure, most of them still in use, evoke the complexity of the operation of the station, partly due to its island nature.

Wharf

The present Grosse Île wharf stands on the actual site of a series of wharves reworked and repaired on several occasions during the station's long history. Today, the wharf is rectilinear, with a total length of 150 metres.

OVERALL WEST SECTOR OF GROSSE ÎLE

This aerial shot offers a clear view of the disinfection building, situated on the wharf extension, as well as the hotel sector.

Photo: Canadian Parks Service - Jacques Beardsell
Neg. 124/PA/PR-6/S-17-11
The wharf has one access ramp on either side, approximately 30 metres from its end. The ramps are stationary and built-in. A metal staircase was installed on each ramp in 1990 to facilitate visitor access.

The surface of the jetty and wharf is paved with concrete; a wooden wheelguard runs around its entire edge. In addition, a 175-mm diameter pipeline runs on the wharf the length of the jetty to the nearby fuel tanks.

Overall, the structural condition of the wharf is considered satisfactory, although there are several shortcomings; more on this later.

**Landing strip**

When ice hampers navigation between Grosse Île and the shore, a small landing strip in the eastern part of the island is used. This is a small private aerodrome, unlicensed by Transport Canada, usable only by day, with no markers and no approach equipment. Only tourist aircraft and certain twin-engine aeroplanes may land on the short gravel runway.

**Roads**

All sectors of occupation are still linked today by a gravel road which generally follows the course of the main road built in the 19th century. Secondary roads of varying narrowness also provide access to various buildings or sites further away from the main road. The absence of asphalt paving on the roads helps to emphasize the «period» character of the island.

**Wastewater disposal**

Currently, there is no proper domestic sewer system on Grosse Île meeting government environmental health standards. With the exception of the animal quarantine buildings, the virology laboratory and the small building converted into temporary administrative offices (#11), which have septic tanks or partial treatment systems, wastewater from the other buildings runs into small pits equipped with overflows which discharge directly or indirectly into the St. Lawrence. In other words, there is no tile field.

**Water supply**

Given the state of deterioration of the water main, drinking water consumed on the island currently comes from bottles. Water from the distribution system is used only for services (heating, fire control, showers, laundry, etc.).

To date, four wells have been drilled on the island. Two of these (#1 and #3) have been «condemned» owing to possible contamination from pollutants within their sanitary zone of protection. Only well #2 is currently used; but its capacity is limited (50 litres per minute). The fourth well was drilled in 1990 near well #1, and analytical tests apparently yielded positive results; its flow is presumably sufficient to supply water for conservation storage.

The island's water reservoir also contains a sufficient quantity of water to sustain a fire fight for two and a half hours at a rate of flow of 1900 litres per minute when it is full. But the system is unable to deliver such a rate, owing to excessive head losses for the pressure available. In light of the firefighting equipment currently used, a rate of flow of 380 litres per minute can be obtained, and the current system is able to meet this demand.

The water reservoir dates from 1919 and is showing signs of aging; in addition, the supply lines installed on the island are quite old and often sustain damage. It is estimated that the distribution system is almost at the end of its useful life and will have to be replaced in the short term.

**Power supply**

Electricity generation on the island is provided by two double-generator sets located in buildings 0.66 km apart. Only one generator can operate at a time, and all stopping and starting operations are manual, so at each transfer there is a more or less prolonged power failure on the island. It is estimated that the thermal power station generators (#86) have almost reached the end of their lives; the other two generators, located in building #59, should be able to operate for several more years with appropriate maintenance.

Currently, the system is at full load given that a number of heating appliances have been added over the years.

Electricity distribution is provided by a 2.4-kV, 3-phase, 4-wire overhead network installed on wooden poles and cross members. This system was renewed in 1980 and meets Hydro-Quebec standards.
ENVIRONMENT

Physiography

With a total surface area of 185 hectares, Grosse Île is a slender island extending in the direction of the river's flow. Like the Île aux Grues archipelago, Grosse Île belongs to the Sillery geological formation, dating from the Ordovician period and characterized by the presence of feldspathic or siliceous sandstone along with schist and slate. The loose substrate consists mainly of fine sand, loam, clay and organic particles. The vast shoreline in the northeast part of the island is composed of fluvial deposits on top of marine deposits. Surface deposits are relatively thin (1 to 2 metres), and the water table lies very close to the surface.

The upper estuary of the St. Lawrence is characterized by a mixing of sediment-bearing freshwater and colder saltwater. Salinity, tides, waves and ice have a determining influence not only on the climate of the island but also on its riparian and forest vegetation. The combination of these factors creates shore erosion in the more exposed places and sedimentation in those that are better protected (especially coves and bays on the east side).

The island is situated in the maritime temperate zone where the daily and annual temperature range is low, reducing the risk of sudden frosts and lengthening the growing season accordingly. Because of the small surface area of the island together with its relatively low topography, the most important climatic factor is undoubtedly the wind, the influence of which on vegetation is evident from the large amount of windfall.

In this context, it is not surprising that Grosse Île features several very special floristic and ecological characteristics: a great diversity of habitats, the presence of over 25 species of trees (including several at the northern limit of their distribution area), the easternmost limit of the distribution area of a major group of herbaceous plants and, conversely, the western limit of certain northeastern Quebec species, the presence of two species endemic to the intertidal zone, the low number of exotic plants introduced to the island and the luxuriance of vegetation. Finally, shore vegetation features plant associations characteristic of the intertidal zone in this region.

While there are very few mammals on Grosse Île, birdlife is abundant and varied, because of the very diversity of habitats. Aquatic bird species largely dominate and are truly typical of Grosse Île, particularly in the fall, when snow geese and ducks number in the thousands.

Major landscape units

As a result of the influence of evolutionary processes and human occupation, the natural environment of the island may be divided into five major and quite distinct landscape units:

- **Hills**: this landscape unit is found at four locations on the island (their average altitude is about 40 m). The hills are characterized by frequent strong winds and by windfall. Surface deposits are relatively thin (± 50 cm), and the rock shows in several places. The hilltops are dominated by hemlock-red spruce stands and the steep slopes by red oak stands with white pine or white pine stands with red oak. These are found mainly in the southern part of the island and on the southern slopes of the hills, with the northern slopes being occupied by fir and red spruce.

- **Platetou**: located in the northwestern part of the island, the plateau features a relatively even relief in contrast to the hills that border it. The average altitude of the plateau is roughly 22 metres, with slopes ranging from gentle to moderate (10 to 30 percent) over most of its surface area. Deposits are no more than 50 cm thick. The most common tree associations are sugar maple-yellow birch and balsam fir with cinnamon fern (fiddlehead).

- **Wet flat**: this landscape unit is found mainly at the eastern end of the island and is characterized by many human disruptions: landing
strip, dump, gravel quarries, cemetery, buildings, etc. The average altitude is about 30 metres, and the relief is flat. Surface deposits are relatively thick but drainage is rather poor. In contrast to the other parts of the island, vegetation is greatly disrupted: wildland, alder, etc., in addition to maple and spruce stands. Sheltered from the wind, vegetation is very developed and there is no windfall.

- **Inhabited zone:** the inhabited zone delimits the area in which the effects of human occupation are still felt. The ground is flat, and the average altitude ranges between 6 and 10 metres. Plant life is very simple: grass, alder, young white pine, red oak and juniper.

- **Intertidal zone:** this landscape unit is extensive and encircles the whole island. It extends from the low-water line to an altitude of some 4 metres (high water). Sheltered areas are characterized by narrow beaches of rough sand spread over clay. As one moves closer to the water's edge, the sand becomes progressively sparser and gives way to clay. Areas that are more exposed feature beaches less rich in sand and dominated by clayey deposits alongside rock outcroppings. Vegetation is clearly dominated by American bulrush.

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**GROSSE ÎLE : SOUTH COAST**

This aerial view of the south coast of Grosse Île shows where the inhabited sectors were concentrated; in the foreground is a clear view of Cholera Bay at high tide. Some of the islands of Île-aux-Grues Archipelago can be seen in the distance.

Photo : Canadian Parks Service
Jacques Beardsell
Neg. 124/PA/FR-6/S-16-6
State of the environment

The following overview is based on the results of various research and inventory activities accomplished in recent years. (17)

General state

The biophysical inventory of Grosse Île, (18) conducted in 1987-1988, shows that the island's natural environment, outside the areas occupied by historic buildings and Agriculture Canada's infrastructure, remains little disrupted by earlier human activity. Examination of the natural landscape reveals the presence of noteworthy plant associations in the island's interior, and shore ecosystems are in a relatively good state of conservation.

Impact of past and present activity on the island

In June 1989, Environment Canada's Parks Service asked Health and Welfare Canada to assess the risks to public health that could result from past and present activities on Grosse Île and to make recommendations. Following the research carried out, the conclusions of the specialists may be summarized as follows:

Impact of human quarantine activities

Examination of potential risks associated with the presence of viruses or bacteria resulting from human quarantine activities that occurred between 1832 and 1937 shows that there is no possibility of their survival on the island. (19)

Impact of research activities by Agriculture Canada

From 1957 to the present day, Agriculture Canada has conducted a number of experiments involving infective agents in the context of animal pathology training courses; the standards and procedures followed (high-containment laboratory, incineration of animal carcasses and excrement, controlled access to the island, etc.) have led Health and Welfare Canada to conclude that there is no risk to human health stemming from these activities.

Impact of bacteriological experiments by the Department of National Defence

Between 1942 and 1945, the Department of Defence carried out certain research activities, more specifically the manufacture of anthrax (Bacillus anthracis), an extremely virulent micro-organism. These experiments were conducted inside the former immigrant reception centre, known at the time as «N Building». This building was temporarily condemned in 1990 so that a detailed risk assessment could be conducted.

A special committee of researchers from Health and Welfare Canada examined this particular case. Samples were taken in the building and were laboratory-tested in order to detect the possible presence of toxigenic strains of anthrax; the results were negative.
Health and Welfare Canada recommended nonetheless that, as a safety measure, the building be fumigated with formaldehyde before any preservation or development work was undertaken.

- Impact of animal quarantine activities

Examination of animal quarantine activities (1965 to the present) shows that the standards and procedures used eliminate any risk to human health.

Quality of drinking water

Health and Welfare Canada conducted a detailed evaluation of the quality of drinking water on Grosse Île (Lamoureux, J.L., 1989); several potential problems were identified, notably in connection with the deterioration of the water main. Various recommendations were made in this regard.

Ownership status

Following the signing, in the summer of 1988, of a memorandum of understanding between Environment Canada and Agriculture Canada, most of the island recently came under the jurisdiction of the Canadian Parks Service. Intending to continue its operations on Grosse Île, however, Agriculture Canada insisted on retaining certain buildings, facilities and parcels of land which it deemed necessary for that purpose.

Moreover, although under the agreement on land division the Canadian Parks Service inherits most of the island and several of the most significant heritage resources, it should be mentioned that several old buildings remain under the jurisdiction of Agriculture Canada, along with certain areas thought to have promising archaeological potential. A subsequent agreement reached by the island's two co-managers provides, however, that other land, buildings, structures or facilities may be transferred to Environment Canada by Agriculture Canada, after prior agreement between the two departments regarding the terms of such a transfer.

Legal framework

Since Grosse Île is not yet a National Historic Park, only the following acts and regulations currently apply:


- Regulations declaring Grosse Île a quarantine area. Animal Health Act. These two acts allow those in charge of the island to control and establish rules of access to the island as a «forbidden» site, either for reasons of official secrecy (no longer the case today) or for reasons of quarantine in order to protect the public.


These regulations prohibit hunting and the possession of hunting weapons or gear in the sanctuary of Grosse Île, which is described as follows: «a territory comprising Grosse Île, county of Montmagny, and a quarter-mile strip of submerged land around the island».

These regulations have been and are enforced, until further notice, by conservation officers of the Quebec Department of Recreation, Fish and Game.


These regulations establish the rules for hunting migratory birds. For the Montmagny region, the migratory bird hunt opens on September 25. Grosse Île is not considered a «sanctuary» under the terms of the Act; it is therefore a «normal» territory, with no particular protection.
Activities of Agriculture Canada

Agriculture Canada has been operating an animal quarantine station on Grosse Île since 1965. It is the only maximum-security animal quarantine station in Canada. All livestock «on the hoof» entering the country must in fact go through a quarantine period before being released to breeders and importers. At Grosse Île, animals generally arrive by ship in late summer, winter in the sheds provided on the island and leave the following spring when the ice thaws. Since levels of livestock imports vary with economic conditions, the animal quarantine station is not used on a regular basis; in fact, the last incoming cargo of animals arrived in 1986.

Until the past few years, Agriculture Canada also used Grosse Île to give a course for Canadian and foreign veterinarians on the detection of rare or exotic animal diseases. But since part of the maximum-security laboratory was heavily damaged by lightning in 1988, the courses traditionally held each spring had to be moved elsewhere.

Opening the island to the public and current clientele

Throughout almost its entire history, for obvious reasons, the authorities have constantly tried to prohibit or at least restrict public access to Grosse Île, which has to a large extent contributed to the site's aura of mystery. But in the wake of the announcement in 1984 that Grosse Île would become a national historic site, an agreement was reached between Agriculture Canada and a local non-profit organization, the Corporation pour la mise en valeur de Grosse Île inc. (Grosse Île Development Corporation), to allow the public to gain access to the island.

Based on a system of mandatory reservation, the organization of visits was established gradually, taking into account the need to offer a complete package: transportation of visitors to the island, guided tour of the site, meals, etc. Operating on a fairly regular basis, the Corporation thus welcomed a total of some 7,000 visitors between 1984 and 1989.

The Canadian Parks Service took charge of organizing tourist visits to Grosse Île in 1990. During that first operating season, the CPS entrusted delivery of visitor services on the island (guided tours, meals, etc.) to the Grosse Île Development Corporation, as in previous years, and maintained the mandatory reservation system. During the last two operating seasons, it is estimated that close to 12,000 people visited Grosse Île.

The following data on current clientele are taken from a survey of visitors conducted during the 1990 season in the context of a market study.

The total population surveyed comprised 349 groups representing a total of 1,113 visitors. On the basis of the number of visitor groups, this sample yields overall estimates with no more than a 4.6 percent margin of error, 19 times out of 20. The data gathered were weighted so as to represent the actual proportion of summer season visitors by month and by shore of embarkation.

During the 1990 operating season, a few private carriers offered ferry service to the island from both shores of the St. Lawrence. For the survey period running from May 16 to September 30, 1990, visitors arriving from the south shore (Montmagny and Berthier) accounted for 56 percent of the total. Half of them came from the Quebec City administrative region (03) and 45 percent from other regions of Quebec, including close to one-third from the Montreal region alone. They were much more likely to be adults unaccompanied by children and more likely also to come in pairs.

Half of the visitors coming from the south shore were «travelling» during their visits to the island, meaning that their trips included at least one night away from home. This group also comprised more people whose itineraries as initially planned had not included visits to the island.

Visitors embarking on the north shore (Quebec City, St. Anne de Beaupré, Île d'Orléans) made up 44 percent of the total and came for the most part from the Quebec City administrative region. They were more likely to come in groups and many of them brought their children along. Finally, their visits were generally part of an excursion of less than one day, and Grosse Île was the ultimate goal of their trip.

Although the daily number of visitors fluctuated throughout the season, during the most active part of the season (June 20 to September 11) 70 percent of visits were recorded during «long weekends» (Thursday to Sunday); Sunday itself was the day chosen by a high proportion (close to 30 percent) of visitors.

Lastly, for the same period (84 days), there were only 13 days when the number of visitors exceeded 100, and only one on which there were over 150.

Migratory bird hunt

The part of the estuary opposite Montmagny and its surrounding area is an important feeding and rest site for certain migratory birds, making it a highly sought-after sector for hunting wildfowl.

In addition, the fall duck and goose hunt is a stimulating factor for the local economy. The Montmagny snow goose festival and the operation of numerous hunting outfitters are testimony to the importance of this activity. In the immediate sector of Grosse Île, an outfitter apparently installs blinds some 400 metres from the line of high water in the eastern sector of the island. In the submerged sectors, other groups occasionally hunt by means of floating caches.
Lying within the Côte du Sud sector of the Chaudière-Appalaches (formerly Pays de l'Érable) tourism region, the Île aux Grues archipelago, while enjoying a special geographical situation, is located near the large population pool of the Greater Quebec City region and the internationally known tourist attraction of the historic quarter of Old Quebec.

The Chaudière-Appalaches tourism region covers a vast area; partly bounded to the southwest by the Eastern Townships up to the U.S. border, on the northeast its boundary runs along the St. Lawrence River between Leclercville and St. Roch des Aulnaies. For its part, the Côte du Sud includes the riparian region of the St. Lawrence between Beaumont and St. Roch des Aulnaies, as well as the Appalachian hinterland sector as far as the Maine border.

While the Côte du Sud has no «tourism showplaces» in its territory, it nonetheless has some remarkable attractions.

Montmagny, the snow goose capital, celebrates in its annual festival the arrival of thousands of snow geese on its flats, in spring and fall. Goose hunting, watching and cruises, and tasting of goose dishes are all occasions for celebration.

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Grosse Île
St. Jean Port Joli, the «craft capital», owes its world renown to the genius of the sculptors and craftsmen who live and work there. (21)

The architectural heritage of the Côte du Sud is remarkable in several respects, comprising in particular some of the best evidence of the seigneurial system, including the seigneurial mill at Beaumont, the Couillard-Dupuis manor in Montmagny, the Macpherson-Lemoine domain on Île aux Grues, and the Dionne manor and village mill in St. Roch des Aulnaies.

Moreover, the history and heritage of the Côte du Sud are intimately tied to the presence of the St. Lawrence, and the entire shore region is impregnated with a particularly evocative «maritime» atmosphere.

Numerous sailors were born and raised in the Côte du Sud, among them Captain Joseph-Elzéar Bernier, and have left their mark in marine history. At L’Islet sur Mer, the Bernier Marine Museum, the most important of its kind in North America, tells the gallant captain’s story. The maritime atmosphere is to be found as much in local activities as in the landscape; the sea breeze caresses one’s face, the wharves beckon invitingly, and the islands with evocative names make one dream of cruises. (21)

According to 1988 data, the tourism infrastructure of the Côte du Sud subregion was based on 687 bedrooms and a dozen dining rooms. This infrastructure, consisting of small establishments, is relatively scattered, offering only light concentrations in Montmagny and St. Jean Port Joli. Little in the way of superior quality facilities is to be found, in terms of both accommodation and eating places.

The region’s schedule of events may contribute to its positioning as a tourism destination; in this regard, the snow goose festival held in Montmagny in mid-October should be mentioned. Nonetheless, the region’s tourism supply is still too limited in terms of diversity; it lacks tourism «image» and suffers from an attraction potential without focus, as well as a small tourism clientele. In fact, this region appears primarily at present as a support for clientele passing through on the way to other tourism regions in Quebec.

With more than 40 percent of visitors reaching Grosse Île from the St. Anne wharf in 1990, the Beaupré region may also be considered as a «zone of influence» of the historic site, although the Côte de Beaupré has no real economic, social or cultural affinity with the Île aux Grues archipelago.

In purely tourism terms, the Beaupré region certainly appears to be one of the most dynamic in the Greater Quebec City region; indeed, it contains a concentration of tourist attractions whose fame goes beyond our borders, to mention only the St. Anne de Beaupré basilica, frequented by thousands of pilgrims and visitors each summer, the grand canyon of St. Anne falls, the Cap Tourmente National Wildlife Reserve, and the renowned Mont St. Anne Park. Furthermore, all tourists and travellers heading for the popular Charlevoix region or even Tadoussac and the North Shore have to pass through this region.

The tourism infrastructure of the Beaupré region, thanks in particular to the tremendous development of Mont St. Anne Park, has been constantly growing over the past 10 years or so, both quantitatively and qualitatively; thus, within a 15-kilometre radius of the St. Anne de Beaupré wharf are to be found some 1,500 hotel rooms catering to all tastes and all budgets, as well as a plethora of restaurants of every category. Linked to Quebec City by a rapid highway corridor (St. Anne Boulevard and the Dufferin-Montmorency Autoroute), the Beaupré region is a mere half hour’s drive from downtown Quebec City.

THE OBJECTIVES

Role of Grosse Île in the National Historic Site system

Immigrants arriving in Canada in the 19th and early 20th century from all parts of Europe and every class of society took an active part in building the country by bringing to it their courage, hard work, and culture. Grosse Île National Historic Site, an island of welcome and hope for hundreds of thousands of immigrants, but also the final resting place for those whose adventure was to end on the threshold of their new lives, is destined to commemorate the substantial role played by immigration in the growth of Canada in the 19th and early 20th century.

Aside from their close connection with the reception of immigrants, the period resources of Grosse Île, which are remarkable in several respects, must also contribute to illustrate various facets of the history of Canada's first quarantine station.

Statement of Canadian Parks Service mandate on Grosse Île

Within the limits of the credits allocated to it by Parliament and pursuant to the provisions of the agreement signed with Agriculture Canada, the Canadian Parks Service intends to:

- preserve the heritage character of Grosse Île;
- make this heritage accessible to Canadians and to the general public;
- convey to visitors the period of history associated with this site through the themes identified.

While seeing to it that the public's needs and expectations are met as far as possible, the Canadian Parks Service wishes to ensure that the experiences offered to visitors make them more aware of their environment at the same time as they promote in them a more complete vision of the Canadian identity, in particular by bringing them to think about the phenomenon of immigration in societies. Finally, the Canadian Parks Service intends to cultivate harmonious, profitable relations with the community, particularly in terms of partnership, while contributing to the development of the regional tourism industry.
Objectives

More specifically, the Canadian Parks Service's mandate at Grosse Île NHS may be expressed through the following objectives:

Objectives related to resource conservation/protection

• To ensure, in compliance with the Cultural Resources Management Policy, the preservation of the overall historical resources (architectural, archaeological and ethnographic) associated with the immigration and quarantine station themes under Environment Canada's jurisdiction.

• To preserve and protect, in compliance with the Canadian Parks Service policy, the biophysical resources of the territory transferred.

• In cooperation with Agriculture Canada, to take the appropriate steps to ensure the quality of the environment on the island.

Site commemoration and visit-related objectives

• In compliance with national and regional marketing strategies and in line with development of the project and the visit-related objectives set, to publicize the existence of Grosse Île NHS and encourage visits to this site by emphasizing the themes identified, the heritage resources of the site and the proposed visit experiences.

• To offer visitors a choice of visit experiences likely to promote their understanding of the themes as well as their appreciation of the site's heritage resources; the experiences offered will be geared to the conditions, interests and needs of the clientele.

Objectives associated with integrating the site into its region

• Promote a harmonious and functional integration of the site into its region of influence by:

  • Establishing regular, constructive relations with the main players in the region, particularly from the tourism industry;

  • Soliciting participation of local partners in providing services to visitors.

Implementation-related objective

• To develop Grosse Île in a long-term perspective. The Master Plan will propose various development strategies focusing on the short, medium and long term, on the basis of priorities that will have been determined and of available credits.
Themes

The themes developed for Grosse Île National Historic Site are inspired by the recommendations of the Historic Sites and Monuments Board of Canada. The general theme is:

**CANADA:
LAND OF WELCOME
AND HOPE**

This general theme will be expressed through the following two themes:

**Main theme:** Immigration to Canada via Quebec City (1800-1939)

- National and international context surrounding the arrival of immigrants in Canada — causes of immigration;
- Government immigration policy during this period: the mother country (Britain) prior to 1867, Canada and Quebec after Confederation — recruitment, propaganda, regulations, reception, orientation for immigrants;
- Atlantic crossing in the era of sailing ships and steamships — risks and perils associated in particular with the spread of epidemics;
- Portrait of immigrants arriving in Quebec City — number, origin, age, sex, socio-economic profile;
- Public opinion as expressed concerning new arrivals;
- Immigrants’ contribution to Canadian and North American society; economic, social, cultural, political and geographical aspects.

**Secondary theme:** Grosse Île quarantine station (1832-1937)

- Context of creation of a quarantine station — selection of Grosse Île;
- Development of quarantine station at various periods, depending on influx of immigrants, diseases to be treated (cholera, typhus, smallpox, yellow fever, etc.) and controls to be carried out, depending on the state of medical knowledge at the time;
- Operation of the quarantine station:
  - authorities involved in setting up and organizing the station;
  - various legislation authorizing the existence of the station;
  - reception of immigrants — arrival of ships, medical inspections, disinfection operations, lodging of individuals presumed healthy and quarantining of sick;
  - station staff and logistical organization;
  - tragic years — 1832, 1834 and 1847.

**Daily life on Grosse Île:**

- population;
- working conditions for regular and seasonal staff;
- quality of life;
- the «village,» or spatial and social organization of the island.

**Grosse Île’s geographical setting** — biophysical characteristics and environmental features.
This third, more analytical section highlights the salient features of the issue of the development of Grosse Île by emphasizing, in particular, the difficulties associated with access to the site, by contrasting the potential and constraints related to resource preservation and use, and by examining forecast demand, in terms of the possible number of visitors and of the needs, perceptions and expectations expressed to date. Other key aspects to be analysed include the problem of operating an island site and environmental issues.
GROSSE ÎLE: JOINT OWNERSHIP AND MANAGEMENT

As mentioned earlier, Agriculture Canada intends to maintain its presence on Grosse Île in order to continue operating the animal quarantine station, as required. This activity in itself should not represent an obstacle to the normal operations of the historic site, since on the whole, livestock imports are infrequent and the animal quarantine period begins only in late summer.

For their part, renovation of the laboratory and resumption of animal pathology courses on the island have recently been the subject of an opportunity study. The conclusions of this in-house exercise are that Agriculture Canada does not anticipate rebuilding the laboratory or starting up animal pathology courses again in the foreseeable future. The Department does, however, consider that for the moment it would be premature to discard this possibility permanently; consequently, the existing facilities will simply be closed and preserved.

In short, Agriculture Canada’s presence on the island will likely be only episodic in the future. Outside animal quarantine periods, Agriculture Canada personnel will make only routine inspection and maintenance visits.

Be that as it may, it is agreed that the two agencies will have to work together closely to harmonize their activities and rationalize management of the territory as much as possible.

LAW ENFORCEMENT

In light of the island’s character, its high potential for use, and resource management and public protection imperatives, the current legal status of Grosse Île — National Historic Site — is clearly inadequate. Therefore the Canadian Parks Service will have to take the necessary steps to ensure that the status of National Historic Park be conferred on Grosse Île, by April 1993 at the latest. At that time, the Canadian Parks Service will be able to apply the National Parks Act and Regulations throughout the area to which management, responsibility and direction have been transferred as well as on the jointly administered territory.

However, it should be noted that under the memorandum of understanding of August 1988, Agriculture Canada will be able to apply its acts and regulations over the entire territory of Grosse Île.

ACCESS TO GROSSE ÎLE

Lying in the middle of the St. Lawrence, Grosse Île is accessible, for all intents and purposes, only by boat. This is a key factor which, as one might expect, will considerably affect the number of future visitors to the site.

Technical potential for access to the island

The technical potential for access to the island was analysed in the context of a market study. This analysis focused on two aspects, namely sailing conditions in the Île aux Grues Archipelago, and assessment of Grosse Île’s harbour infrastructure. The following data and recommendations largely stem from this technical report.

Sailing conditions

A study of marine conditions and navigation difficulties in the waters around the Île aux Grues Archipelago indicates that this part of the St. Lawrence, while not described as dangerous, presents a sufficient number of hazards to justify application of certain rules for the transportation of passengers.

Given the possibility of encountering severe weather and marine conditions as well as the speed with which these conditions can arise in the region of the archipelago, it is considered appropriate for proper control to be used with respect to the categories and size of vessels that will be used regularly to convey visitors to the island.
Small crafts, that is, boats up to 7.5 metres in length, are likely to be deficient in terms of passenger safety, especially in difficult sailing conditions (high waves and strong winds). In addition, given the small number of passengers that these boats can carry, there could be too many such crafts, thus preventing access to the Grosse Île wharf by tour vessels.

Currently, the transportation of visitors to Grosse Île is exclusively preserved for single-hulled displacement ships. These vessels are of acceptable, albeit somewhat variable size, and their seafaring and passenger safety characteristics are satisfactory.

Nonetheless, for ethical behaviour toward our visitors, it has been recommended that we make sure that the tour boats are operated by serious, well organized firms and that crews are experienced and fully familiar with the marine region of the archipelago.

Finally, it is important to point out that with a view to offsetting the unfavourable conditions of the Montmagny basin, the City of Montmagny has expressed its willingness to subsidize an agency or private company that could provide it with a viable, effective solution to the transportation of passengers between Montmagny and the islands of the archipelago.

Grosse Île’s harbour infrastructure

The main shortcomings concern the access of boats and individuals to the wharf. On both points, the existing installations have been judged, on the one hand, insufficient to permit increased use and, on the other hand, unsafe.

Various corrective measures have been suggested for improving safety conditions and visitor comfort at the wharf: addition of a platform for climbing over the pipeline, installation of safety equipment (life buoys, booms, etc.), installation of a passenger shelter, etc. In addition, aside from various renovation work to be undertaken on the wharf (repair of facing, renovation of wheelguard), measures have been proposed to increase the wharfage capacity, which is currently very low. Thus, it has been suggested that floating docks be provided, equipped with mobile access ramps on either side of the wharf, in order to substantially increase its capacity for receiving small- and medium-tonnage cruise vessels.

Opportunities for visitor access to the island

As mentioned above, the general public has had access to Grosse Île since 1984. In concert with the Grosse Île Development Corporation, initially, and then with the Canadian Parks Service since 1990, the supply of marine transport services to the island has gradually developed with the involvement of private carriers.

Tourists now have the choice of various starting points from either shore of the St. Lawrence. In 1990, departures were made primarily from Montmagny or Berthier sur Mer on the south shore, and St. Anne de Beaupré and Quebec City on the north shore. The authors of the market study consider it desirable, and even necessary, that this situation of access from both shores of the St. Lawrence continue since (as was noted in the analysis of current clientele) the shore of departure is a variable which strongly segments the tourist clientele.

(1) At low tide, the water in the Montmagny basin is too shallow for vessels to pass so that access to the wharf becomes impossible for several hours each day. This drawback prevents the Île aux Grues ferry from keeping regular schedules and forces boat operators offering cruises in the islands to set their departure and return times according to the tides. Thus, the schedules vary almost daily, obviously a major handicap for attracting tourist clientele. In 1990, this situation led a number of boat operators sometimes to plan their departures and arrivals from the Berthier sur Mer marina, which is more accessible at low tide. In 1991, most departures for Grosse Île from the south shore were from Berthier sur Mer.

(2) There were no departures from St. Anne de Beaupré in 1991.
The Louis-Jolliet, with a technical capacity of 300 passengers when operating in this part of the St. Lawrence, depends on the rush of tourists to Quebec City during the summer to offer day and evening cruises in the waters between Île d'Orléans and the Quebec bridge.

The other «large» tour vessels, such as the Grand Fleuve (250 passengers), Cavaliere-des-mers (293 passengers) Cavaliere-Royal (293 passengers) and the Famille-Dufour (300 passengers), operate mainly in the Tadoussac and Baie Sainte-Catherine region (whalewatching, cruises in the Saguenay Fjord, etc.).

It must be understood that due to their relatively high operating costs, these vessels have to attract a substantial number of visitors for each trip to be profitable. Moreover, given the number of passengers required, these vessels would have to operate from Quebec City, which is fairly far from Grosse Île (48 km). In that case, the tourism product may be considered a small one-day cruise (depending on the vessel and conditions, the round trip takes between three and five hours’ sailing) with a stop of some two and a half hours on Grosse Île as a «bonus».

At another level, note that the number of passenger boats and their capacity has been very small to date. Nevertheless, there are several cruise vessels with a capacity of some 200-300 passengers operating between Quebec City and the Saguenay but, to date, few of these vessels have come to Grosse Île and, even then, only occasionally, during low season (June and September).

This relative lack of large tour vessels could, however, change in future, particularly when the «Grosse Île product» is better known and more developed. Nonetheless, the fact remains that the Grosse Île wharf, unless it is substantially rebuilt, will hardly be in a position to receive more than one of these large carriers at a time, and this could limit their market share.

Note also the current absence of a rapid transit shuttle which, with a short crossing time, could make several scheduled round trips in one day. The commissioning of such a shuttle would encourage an increase in the number of visitors to the site while helping to keep down the cost of marine transportation to the island.

In short, while visitors currently have the choice of several boarding quays for Grosse Île, the number of carriers and the passenger capacity of their boats have thus far been relatively small. The potential supply of marine transportation does, however, exist and there is no doubt that it will materialize provided market conditions appear favourable to the boat operators.

Boarding quays: shortcomings to be corrected

Purely in terms of the transportation of visitors to Grosse Île, the current situation of the boarding quays as a whole is far from ideal.

Generally speaking, there are major weaknesses in the road signs for Grosse Île. While the existing signs are more visible on the south shore, they are ineffective. As for tourists travelling along the north shore, they are not very likely to see any signs for Grosse Île; indeed, it seems to be taken for granted that they already know the location of the boarding quays.

The issue of road signs also depends upon access routes. Clearly, on the south shore, Autoroute 20 provides rapid access, and the trip on secondary highways from the autoroute is relatively simple. More specific signs would likely direct travellers with no difficulty to the desired boarding quay (Montmagny or Berthier sur Mer).

On the north shore, the problem is quite different. With respect to Île d'Orléans, the access route to the St. Laurent and St. François wharves is not clear (in tourist terms), although it is quite distinctive. But the route, via the bridge and the Route de l'île, is likely to hold visitors back during busy tourist periods. In terms of road symbols, it is a case of starting from scratch.

Grosse Île
As for Quebec City, interested clientele currently have to go to the marina at the Old Port, on the St. Lawrence. Access for tourists, in the context of a major urban centre, depends more upon the tourist communication network in place. But specific road symbols will no doubt have to be provided for tourists wishing to visit Grosse Île from Quebec City.

Finally, it must be admitted that St. Anne de Beaupré, with its location on the north shore opposite Île d'Orléans, is in a relatively good position to offer a transportation service to Grosse Île, due to its proximity to Quebec City and its location on the Charlevoix and North Shore tourist route. Road signs, though, are non-existent.

Moreover, except for the Old Port marina, there are major physical shortcomings at each boarding quay. These include reduced access at Montmagny due to the tide, limited capacity for buses and cars near the boarding quays, lack of shelters for waiting passengers, lack of information booths, etc. Finally, none of the wharves has special facilities for universal access on board boats.

After having been subject to appropriate discussion, these problems will have to be in turn considered and resolved by the authorities responsible in order to provide more effective access to Grosse Île's various client groups.

POTENTIAL AND CONSTRAINTS ASSOCIATED WITH RESOURCES FOR COMMEMORATION, DEVELOPMENT AND USE

Architectural resources

Uneven representation

Despite the large number and diversity of the buildings which have come down to us, it must be agreed that the architectural resources of Grosse Île paradoxically offer limited, uneven potential in terms of illustrating historical themes.

On the one hand, the main commemoration theme, immigration, obviously covers more than the quarantine operations, and the resources on site consequently appear to be of little use as aids for such subthemes as «government immigration policies in the 19th century,» «public opinion as expressed concerning new arrivals» or even «immigrants' contribution to Canadian society.»

On the other hand, while the architectural resources are closer to the quarantine station theme, the fact remains that the periods favoured are mainly the later stages in the station's existence. Moreover, due to the juxtaposition in each sector of buildings from different periods, it is not easy for visitors to decipher and immediately understand the landscape presented and to establish the necessary links with the historical framework. This difficulty in «decoding» the resources emphasizes the need to provide orientation prior to visits to the site.

(4) However, this situation is understandable since no boat operators ran a transportation service to Grosse Île from this boarding quay last season.
Potential for use and constraints

Note first that, in their present condition and based on the assessment conducted in 1982, it is estimated that all existing buildings and structures may be preserved or recovered.

In addition, for almost all of the buildings of any significance, period construction plans are available. This would enable us to intervene with the greatest accuracy should we eventually wish to repair or restore certain buildings.

As to constraints affecting use, note that, generally speaking, the buildings were originally designed for seasonal use. Therefore, their shells would not lend themselves at all to insulation work without endangering the intrinsic value of the interior finishes or facings. Moreover, it goes without saying that heating these buildings without previously insulating them would go against all the principles of energy conservation.

With respect to air conditioning, note that the presence of the St. Lawrence often cools the ambient air on the island, thus reducing the need for air conditioning. While it is technically possible to consider installing some form of climate control in certain buildings to make them more comfortable in summer, it would be wrong to attempt to install sophisticated atmospheric control systems there, such as those required by modern museum standards. Such systems could be envisaged only by creating a second airtight shell within the buildings. But such an intervention would substantially reduce the «period cachet» of the interiors. Another solution might be to use controlled atmosphere displays or showcases providing the desired level of protection for the objects on display.

A second constraint is that the existing buildings do not meet the National Building Code standards for public buildings. But bringing the public access buildings up to standard will inevitably involve fairly major alterations, as the case may be, to their heritage character. For instance, today the standard for safe bearing capacity of floors is 4.8 kPa (100 lb per sq. ft.). None of the floors in the buildings on the island, regardless of the storey, presently meets this minimum requirement. It goes without saying that it is much less of a problem to bring a ground floor up to standard than an upper storey.

Another standard-related requirement is the need for rapid, safe evacuation of the premises in the event of fire, which means adding stairwells or exits completely separated from the space they serve by fire walls. In this perspective, it will doubtless be wise to limit public access as much as possible to ground floors.

Since April 1, 1991, the new Treasury Board directives concerning universal access to federal buildings have been in effect. Needless to say, the buildings on Grosse Île do not meet Treasury Board requirements in this regard. Bringing the buildings up to standard in terms of universal access (eg., adding wheelchair access ramps) will require careful study in order to avoid altering the period cachet and the architectural value of the buildings.

Archaeological resources

Note first that, at this stage in the analysis, the results are still incomplete; certain avenues of research are becoming clear, and the archaeologists will subsequently be in a position to provide a more thorough opinion. In the meantime, on the basis of current data, it is considered that archaeological digs in certain zones of the island would definitely enable us to enrich our knowledge of the layout and operations of the quarantine station at various periods as well as its occupants' daily lives.

But aside from this documentary role, the potential study concluded that by uncovering part of the historical tissue that today has disappeared or is simply hidden from view, archaeology could also help visitors better visualize the overall periods of the quarantine station «physically». In this regard, it does appear that the possibilities for using the archaeological resources for development purposes are numerous. To date, several ideas have been put forward by the archaeologists; those expressed here are given merely as examples.

A first form of development concerns the archaeological remains more or less buried in the ground and associated with old buildings or structures. It would thus be possible to clear the foundations of certain buildings. For instance, those of the post office, lower block and adjoining summer kitchens, certain out-
It would also be possible to develop the many traces of structures and infrastructure still abounding in the landscape: old concrete sidewalks, tube wells, aerial water supply and sewer pipes, remains of the lower wharf, the Cholera Bay breakwater, rails on which cars carrying baskets with laundry for disinfection ran, etc.

In addition, it would no doubt be possible to reconstruct or even simply recall the presence of buildings or structures whose traces today are unfortunately too limited or fragile to be developed. Cases in point are the huts used as hospitals and shelters during the station's early years, whose perimeters could be outlined on the ground. Likewise, we could consider renewing certain roads or paths that are now abandoned, putting back various elements of outdoor furniture (fences, gates separating two sectors, sidewalks, stairs, etc.), more accurately defining the original boundaries of the cemeteries, retracing the site of the Duplain farm, etc.

On another level, note that the surveys and selective digs conducted on Grosse Ile in the past few years as part of the archaeological potential study or the archaeological monitoring of provisional protection work have shown the strong interest visitors express in the uncovered traces of the past. While helping to enrich knowledge of the site, archaeology will have allowed the public direct, spontaneous contact with buried «evidence». The interest aroused among visitors thus allows one to imagine integrating archaeological activities into future animation and interpretation activities. In such a perspective, archaeological research would become an intrinsic form of development of the site.

**Ethnographic resources**

Currently, most of the artifacts are in a fairly stable state of conservation. The entire collection has been brought together in the second-class hotel; the most fragile objects (books, posters, textiles, etc.) are for their part stored in Canadian Parks Service warehouses in Quebec City. As for the furniture and fixtures, they have remained in the various buildings on the island, and their conservation poses no major problems for the moment.

The site's ethnographic collection, in its present condition, offers all in all a highly attractive potential for interpretation. Note, first, the quality of the objects in the two chapels. With their furniture and decor, the chapels bear witness to Catholic and Anglican worship in the late 19th century.

As was mentioned above, the ethnographic resources recovered in the buildings are somewhat heterogeneous, and the great majority of artifacts, like most of the buildings, date from the turn of the century. While it is unfortunate that the ethnographic resources found cannot contribute to making the period of the great epidemics better known, or the operation of the hospitals for the overall period, certain functions and themes are still of great interest; the ethnographic resources would thus enable us to reconstruct the rooms where immigrants were accommodated at the turn of the century.

In addition, certain dwellings, since their integrity has been preserved, would lend themselves well to period reconstructions. The interiors which have kept their furniture could also be reconstructed. Among those we could mention are the upper block housing (#39), the Public Works Officer's house (#43) and the medical assistant's house (#38). Nonetheless, while we have a large number of artifacts, there is little household furniture; acquisitions would therefore have to be provided in this area.

The island’s commemorative monuments also present great interest for development and interpretation; their potential will be better known when the current study is completed.

Several artifacts could no doubt be used for interpretation purposes; for instance, the objects associated with land and marine transportation. But a number of «spectacular» artifacts, such as the ambulance and ice canoe, may be used only reservedly; in fact, their uniqueness calls for the best possible conservation conditions.

Certain major activities in the daily life of Grosse Ile are not currently documented. In particular, it will be necessary to know the lay-out and operations of the 19th century hospitals to develop the lazaretto, certainly the building which appears to be part of the most significant evidence of immigration and quarantine in the last century. Moreover, in view of potential animation workshops, research will have to be conducted on immigrants' costumes, and
Environmental resources

It is important from the outset to identify potential and constraints with respect to environmental resources in the special context of managing a historic site, where the cultural angle predominates. For all that, this perspective must not lead one to ignore the island's natural attractions. The five main landscape units defined above may be roughly grouped into two main zones: the «natural» zone, and the «historical» zone, which has been and still is subjected to human occupation. Overall, the natural zone occupies the north and east of the island and offers undeniable potential for discovery and appreciation of the setting which may be summarized as follows:

. Grosse Île offers visitors the chance to stay on one of the beautiful islands in the St. Lawrence estuary and to make contact with a relatively undisturbed island setting. Here, in short, is an original experience in itself and, what is more, one as yet rarely offered elsewhere.

. More specifically, it is considered that the island's natural zone can support a program of interpretation and education in the aquatic environment that the St. Lawrence and its islands represent. For instance, various themes could be addressed, including:

. aquatic habitats for wildfowl

. the island's varied flora, evidence of its special location in a transition zone between saltwater and freshwater

. the representative nature of Grosse Île as a sample of the resources of the Île aux Grues archipelago.

Such an orientation could enable the Canadian Parks Service to become more closely integrated with the objectives of the St. Lawrence Plan and the Saguenay Marine Park, located not far away. But it would be necessary to take into account the project to create a wildfowl interpretation centre in Montmagny, where this theme is to be partially addressed.

. The recreational potential of the natural zone, while limited, could be developed in diversified visit experiences. One could thus envisage developing a recreation area, lookouts, hiking paths, etc.

Among the constraints, the following should be mentioned:

. the nature and conditions of the terrain in certain places (excessively damp ground, thin surface deposits, periodic flooding, etc.) which prevent any intensive use unless more a «heavy-duty» reception infrastructure is put into place.

. the abundance of poison ivy

. the availability and quality of drinking water.

In addition, harnessing the island's natural potential will subsequently require the conceptualization and application of management measures likely to ensure visitor safety as well as management of certain particularly sensitive components of the environment.

Service infrastructure

Due to the island nature of the site and its relative isolation, establishment of service infrastructure is subject here to more complex factors than are usually encountered.

At the preliminary concept stage, three aspects particularly attracted the consultants' attention, namely the island's water supply, wastewater disposal and treatment, and generation of electrical energy.

The systems proposed are based on a hypothesis of some 500 visits a day and take into account the 20 permanent residents who will eventually be living in six houses. Note that all the systems proposed meet existing environmental health standards.

Essentially, it is proposed that the water supply be drawn from one of the existing wells (the one with the fastest flow) so as to be able to meet the system's needs during heavy consumption periods and for conservation storage during periods of low demand. For these purposes, construction of a new underground reservoir is proposed, with a capacity of 405 cubic metres. Treatment of drinking water (filtering, oxidation, postchlorination) would take place at the well outlet. All water supply pipes would be redone so as to yield acceptable pressure throughout the distribution system.

As for the domestic sewer system, it is proposed that the island be divided into two catch basins for topographical reasons. Indeed, three hypotheses were studied for wastewater treatment, namely installation of septic tanks and sand filter beds, use of a biological disk system, or installation of aerated ponds. The
latter system appears to be the most appropriate for the site. Pumping stations would be created at the head of each catch basin to send the water to the treatment sites; these would be built away from areas frequented by visitors.

Finally, with respect to the generation and distribution of electrical energy on the island, various options were also studied. The preferred concept involves replacing the generators in building #59 and expanding it to house two new generators. The generating capacity would thus increase from 100 kW to 180 kW. One of the two existing generators would be moved to building #86 to replace the less reliable one.

Aside from its benefits in terms of savings, this option offers the advantage of using the existing infrastructure, which is, moreover, far from the main centres of activities. This would eliminate inconvenient noise and odours. Moreover, this scenario would involve few modifications to the overhead electrical network.

It is important to remember that the above proposals are preliminary and that other technical studies will be necessary before the final service infrastructure plan is determined.

ANALYSIS OF DEMAND

The following pages, written largely from the market study conducted in 1990, will attempt in turn to define the potential market of Grosse Île in quantitative terms and to identify the prospects for evolution of demand. From a more qualitative viewpoint, we will subsequently attempt to better grasp the sensitivity of current and potential clientele to variables in the marketing mix.

Potential clientele

Potential demand

Potential demand was estimated using Statistics Canada data from the Canadian Travel Survey and was adapted to the specific Grosse Île situation. If the potential demand is defined as "the proportion of the total population of residents and tourists who visit national, provincial and regional parks and historic sites, either for recreation (residents) or for tourism (travellers)", then potential demand for Grosse Île National Historic Site is estimated, for the three markets considered (primary, secondary and tertiary), at some 325,000 persons.(5)

Potential clientele

<table>
<thead>
<tr>
<th>The total potential of the primary market is estimated at visits, i.e.:</th>
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<tbody>
<tr>
<td>Residents of the immediate Grosse Île region:</td>
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<tr>
<td>Day trippers from the Quebec City administrative region:</td>
</tr>
<tr>
<td>Tourist market for the Chaudière-Appalaches region:</td>
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<tr>
<td>Market for day trippers from the Quebec City administrative region who have not yet chosen the Chaudière-Appalaches region as their destination:</td>
</tr>
<tr>
<td>166,525</td>
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<tr>
<td>93,125</td>
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<td>17,100</td>
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<tr>
<td>29,700</td>
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<td>26,600</td>
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(5) This potential demand estimate was obtained from the number of trips in Quebec made by Quebecers during stays or excursions and by other Canadians or residents of other countries during stays for 1988.

Then only trips to the Chaudière-Appalaches tourism region made during the third quarter, more specifically during Grosse Île's scheduled operating season (75 days), were calculated. Finally, the proportion of travellers visiting national, provincial and regional parks or historic sites was considered.

Secondly, to this potential calculated for travellers (tourists and day trippers) was added the potential number of visitors to historic parks and sites by the regional population, that is, the demand for trips of less than 80 km, which may not be considered real tourism demand.

Finally, to complete the evaluation of the primary market, the potential of day trippers from the Quebec City administrative region to historic parks and sites but not to the Chaudière-Appalaches region was added.
Using the same approach as was taken for the primary market, two other target markets have also been identified as potentially attractive for medium- and long-term marketing efforts. First, the secondary market, including travellers to the Quebec City Region, represents a potential 118,200 visits.

Finally, the potential of the tertiary market, including tourists passing through on their way to the Lower St. Lawrence or Gaspé is 39,500 visits.

**Forecast trends in demand**

Aside from trends in the different kinds of tourism demand, certain social trends will affect decisions by consumers from Quebec and Canada regarding their tourism travel. Economic fluctuations, aging and urbanization of the population, a Canada-U.S.-Mexico free trade agreement, declining real household income, marital status, the presence of women in the labour force — all these phenomena could influence tourism in an international, economic and political context.

Similarly, marketing strategies planned by Tourism Quebec, regional tourism associations (Quebec City and Chaudière-Appalaches regions) and the Canadian Parks Service will help promote the Grosse Île National Historic Site in the future. In that regard, note the Chaudière-Appalaches tourism region's efforts to establish itself as a destination for short-term visits by concentrating on the «product» approach.

The authors of the market study feel that these external factors will combine to produce only relatively slow growth in potential demand over the next few years. But the issue the Canadian Parks Service is facing could be closer to the choice of target markets. Indeed, whereas marketing efforts aimed at the primary sector will be relatively simple, reaching the secondary and tertiary markets will call for increased resources, although their impact on the penetration rate is generally weaker.

In short, there is undeniably considerable potential demand for Grosse Île National Historic Site, and recent marketing activities by the Côte du Sud tourism office have resulted in a growing number of visitors to the site. Nevertheless, the development of this historic site must take into account the social and economic environment of the Côte du Sud and the trends in its tourism support capacity, at present fairly limited, in order to maximize positive impact in all respects.
Clientele sensitivity to variables in the marketing mix

Setting up focus groups with members representing the sites' existing or potential clientele allowed us to measure the sensitivity of those client groups to different variables in the marketing mix. These variables include the product itself (visit experience), price (rates charged for services) and promotion, as well as the concept of accessibility in this case. We also used these groups to test various «visit experience» scenarios.

Attitudes, motivations and interests

First of all, an exploratory test intended to identify «psychographic» aspects was conducted, using a sample of 298 visitors, as well as 95 persons in a number of focus groups.(6)

The test results tend to show that:

- current visitors can be considered a «mass» clientele; two-thirds of potential visitors could be described as not «adventurous.»
- current and potential visitors prefer products offering more wide-open spaces; this explains, in part, the desire for freedom to engage in individual activities and independence often mentioned as part of an ideal visit experience.
- as opposed to more «passive» tourism experiences, visitors — particularly potential visitors — are generally more interested in participating, «seeing» and «doing» and, to a lesser extent, in a powerful emotional experience.

Needs and expectations

Judging from the data compiled and the interviews conducted, it can be concluded that there is real interest in Grosse Île NHS on the part of all the clientele segments encountered. This is mainly due to the island's «mysterious» character, the unusual method of access (by boat), its cultural heritage (including the search for ancestral roots), the island characteristics of the site, its immigration and quarantine theme, its novelty, and visitors' curiosity. On the other hand, the island's relative remoteness, the risks of discomfort on the boat trip, the site's current exclusive focus on cultural aspects and the rather «primitive» state of existing services and facilities represent drawbacks for some.

Three scenarios for visit experiences were submitted to participants in the focus groups, to gather their reactions to an overall visit concept.(7)

It was the second suggestion that the majority of current and potential visitors found most attractive. The possibility of choosing the type of visit (guided or self-guided) seemed to be the primary attraction of that scenario. Nevertheless, visitors said that if there were to be only one form of interpretation, they would prefer guide-interpreters in the various buildings.

(6) A first indicator on attitude sought to find out, to some extent, the level of organization desired by visitors and deemed necessary to maximize their visit experience. The second aspect of the proposed procedure was designed to find the current clientele's interest level in the different types of places selected, especially in the notion of concentrated tourist space. The final criterion measured was motivation, more particularly a dimension linked to the independence of the tourist-consumer participating in a tourism experience.

(7) The first scenario illustrated a visit to Grosse Île as a half-day package (approximately two to three hours on the island). It highlighted the advantages of a rapid crossing, a flexible schedule and a guided tour which cost little in time or money but still provided an overview of the site's main attractions.

The second scenario was a day-long visit (at least five hours on the island). Its advantages included a choice between a guided group visit and an independent visit, allowing people to spend more time exploring the island, getting to know its unique character and history while enjoying a stroll along the river.

The third scenario, more than an excursion, was a weekend package in the Île-aux-Grues Archipelago. Its main advantage was its «change of scenery» feature offering a complete discovery of the archipelago. Several hours would be set aside to visit Grosse Île, much like the proposed visit in scenario #2.
Product

When asked to describe an «ideal» visit scenario, the participants said it should offer flexible schedules and variable lengths of stay on the island, as well as the «illusion» of some independence, through experiences offered in optional «menu» form, all to be available at an affordable cost for all clientele segments.

Among current visitors, there are two overall views of the product. A first view, shared by day trippers, integrates the «historic site» product into a broader concept intimately linked with the boat trip on the St. Lawrence and the discovery of the site’s island setting. The second view is shared more by tourists, who instead consider a visit to Grosse Île «one step among many in their trip» and consequently have less time to spend there. In that context, the historical and cultural aspects of the site are most important.

Each of the variables in the three scenarios was later tested in the focus groups. The first variable concerned the themes of the site. Current visitors, who are interested in heritage sites, seek out and appreciate the themes linked to the history of the site. Representatives of potential clienteles, who seem to be more interested in natural sites, would prefer to focus on daily life on the island; they are seeking a «tourism experience» rather than information on names, events and dates.

The participants’ preferred means of interpretation are those based on the help of guide-interpreters, to accompany small groups of visitors or, better still, be stationed in certain buildings. Obviously, it is to be hoped that the buildings will be accessible after their restoration. Suggestions range from a complete period reconstruction to sound effects, and include exhibitions of old photographs, etc.

All agree that it is important to preserve the island’s intimate cachet, and fear that it may become over-commercialized. The development of a multimedia-type interpretation centre is not essential, according to the people interviewed; they prefer the more personal touch of guide-interpreters.

In addition, those consulted feel that the range of services normally offered at public sites should also be offered on Grosse Île; otherwise they would like to know what services are not available before making the crossing. For land transportation, they would like to see a regular shuttle system covering all roads on the island, while fitting in with the period setting. They also suggest that a restaurant be provided — one that reflects the atmosphere of the site — and that the service offered be «intermediate». The issue of lodging on the island is debatable. While those who favour the idea refer to a concept integrated with the themes of the site, others feel that any commercial operations there must respect the history of the island; finally, others simply feel that there is not enough to see and do to justify staying overnight on the island.

A reception and information centre near the Grosse Île wharf would satisfy many expectations. Visitors could plan their own visits and obtain information there as well as find the usual tourist services and be assured of shelter in poor weather.

Finally, aside from learning about the past, visitors want to take full advantage of the site’s island setting. They think that providing walking trails, rest areas, lookouts and so on would allow visitors to better appreciate the intrinsic values of the island.
Price

The fee charged in 1990(8) came under heavy criticism. Compared to similar products, the amount seemed unjustified, and the distribution of costs between transportation and interpretation services was considered disproportionate. While those interviewed readily admitted that substantially reducing the fee for interpretation services would help keep down the cost of visiting Grosse Île, they also felt that effective promotion would help stabilize demand, allowing boat operators to offer better rates for the crossing. It is also obvious that the introduction of a rapid shuttle service would increase accessibility for all clientele, driving transportation costs down even further.

In any case, participants in the focus groups would prefer that costs associated with visiting the island be included in the rate for the crossing if they exceed $5.00. This would help consumers not yet accustomed to paying entry fees to public sites overcome their reluctance.

Promotion

The reputation of Grosse Île and the number of visits to the National Historic Site could easily be influenced in future in at least two ways. Firstly, the site will be added to the country’s existing heritage sites and share the total demand for this type of tourism product with the others in that network. The site will thus benefit from advertising specific to Grosse Île as well as promotion of the entire national historic sites system. On the other hand, it will also be competing, to some extent, with those sites. Secondly, Grosse Île benefit from advertising by other parties involved.

In that context, the authors of the market study feel that a first option, as part of a future promotion strategy, could lie in cooperative efforts. This means cooperation in vertical terms, with respect to marketing the entire national historic sites system; then cooperation in horizontal terms, meaning advertising from all sources linked specifically to Grosse Île. Accordingly, it is recommended that once the Canadian Parks Service officially recognizes an agency offering services at the site, it have a say in the advertising produced by that agency.

A second strategic avenue for the Canadian Parks Service could consist of playing an active role in controlling access to the site, in cooperation with the various parties involved in supplying transportation services to and from the island.

A third option consists of maintaining updated information on access and visits, in order to offer interested tourism industry players the appropriate tools.

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(8) In 1990, the entrance fee for a two-hour guided tour was $15 per person. That price was added to the cost of the cruise, which varied between $20 and $30, depending on the point of departure. The price of a day-long visit, including the cruise, a hot meal and the guided tour, was $58 per person. These prices were lowered for the 1991 season, bringing the regular fare for adults leaving Berthier-sur-Mer for a day’s visit down to $43, not including the hot meal. A half-day visit cost $36. Nevertheless, special prices were offered for children under 13.
Finally, with the exception of the usual public relations and some general-interest articles for the major daily papers, it is felt that it would be premature at this point to undertake concrete advertising steps, inasmuch as the development work is not sufficiently advanced.

As for the «image» of the site to be promoted, both current and potential clienteles clearly stated that the theme of immigration has little impact. In that respect, the image must be modelled on clientele expectations, interests and motivations, using the thematic context primarily as a backdrop. (A study on the marketing image of the site, to be conducted in 1992-1993, will provide further details on this dimension.)

The peak tourist experience for visitors could range from «soft» concepts (escape, recharging one’s batteries and taking stock, calm and serenity) to «strong» concepts (mystery, tragedy, courage), while reflecting the particular context of the site (island setting, boat trips on the St. Lawrence, heritage site). In fact, it has been recommended that promotional efforts must build on the special nature of the overall experience, once the product is ready — but only then.

It is also felt that there should not be too much emphasis on the tragic aspects of the history of Grosse Île. On the contrary, the painful events of 1832 and 1847, which have often been overemphasized in the past, need to be put back into perspective, without robbing them of their importance.

Finally, it should be stressed that the Canadian Parks Service enjoys a positive image among those consulted, and that Grosse Île would benefit from publicizing its membership in Canada’s national historic sites system. According to all those consulted, that system represents the «optimal quality tourism product.»

Accessibility

As we saw earlier, the Île aux Grues archipelago, while not a dangerous maritime area, is nonetheless hazardous enough to justify certain rules governing passenger transportation. First of all, it has been recommended that there be controls on the types and size of vessels transporting passengers to and from the island. Secondly, Grosse Île’s harbour infrastructures must be upgraded.

During the 1990 season, the island could be reached from both shores of the St. Lawrence. It is considered desirable to maintain this dual access; otherwise, judging from the visitor survey, the result might be a voluntary segmentation of the market.

The potential introduction of a rapid shuttle would doubtless make it possible to reach the secondary market of «travellers heading for Quebec City», provided that services were offered from both shores. However, if the shuttle is ever introduced, current transportation services to and from the island are also likely to be disturbed in one way or another.

Finally, it is felt that access to information, to some extent, dictates the physical accessibility of the site. In that respect, there is a need to standardize the information system for potential visitors, along with the reservation system.
LOCAL EXPECTATIONS

Some aspects linked more specifically to the regional integration of the project, the existing degree of cooperation and the more direct participation of certain parties in the current and potential supply of services were also addressed in interviews conducted with representatives of organizations that might be affected by the development of the site and with commercial and/or pleasure craft operators.

In general, the idea of developing Grosse Île as a National Historic Site has met with a positive reaction among those consulted. Côte-du-Sud residents consider this federal initiative a lifeline for the economic and tourism development of their region, the «stimulant» that could make the Côte-du-Sud a tourist destination rather than a trip elsewhere; thus they stress that aspect of the project. Those living further from Grosse Île, for their part, see the project as one tourism product among many others in the Greater Quebec City region.

Although a number of those involved express a somewhat ambivalent view of the project (for instance, stressing the need to preserve the island's intimate cachet while speaking of attracting 80,000 visitors each summer), they seem to favour participatory tourism, or «popular adventure». Aside from those aspects associated with the role of Grosse Île in Canadian history, some local residents feel that the themes should be more comprehensive, taking in the archipelago, island life and the regional Amerindian population. When it comes to means of communication, they are in favour of access to all buildings, and even of rebuilding the old station village.

Like the different segments of the current and potential clienteles, local representatives would like to see the usual services, which tourists are entitled to expect, on the island. More specifically, they would like to see an interpretation centre on the embarkation side, or at least a permanent information kiosk that could be considered a «showcase» for the site.

They find the charge for the guided tour ($15 in 1990) excessive, and see a substantial discrepancy between the fee for the boat crossing (which they feel is reasonable) and that charged for the guided tour.

All parties are aware that there is a problem related to rapid access to the island from the two south shore wharves (Montmagny and Berthier sur Mer), and are counting on the idea of a rapid shuttle to overcome it. Since the shuttle would be a different kind of product, some people feel that it should not interfere with the supply of cruises in the archipelago.

Aside from this project, the boat operators we met necessarily talked in terms of ensuring the profitability of their operations; accordingly, they would not be in favour of any limiting the number of visitors. Concerning promotional activities, the people interviewed who could be interested in helping to develop the site all mentioned the problem of the large number of parties involved, and favoured co-operation. They think that if the reservation system is to be maintained, it must be managed by a single, geographically neutral party (as opposed to someone from either of the two shores). In their opinion, the best solution would doubtless be for the Canadian Parks Service itself to manage access to this historic site.

Other parties involved have also had the opportunity in recent years to express their feelings regarding the future of Grosse Île. A representative of the Irish community, Marianna O’Gallagher, in her 1987 book Grosse Île, Gateway to Canada, expressed her personal view of the future role of Grosse Île in this way:

«If it comes to pass that Grosse Île becomes a park, let it be the place where the visitor is touched for a moment by the drama of immigration and what it meant in the life of each one who came, and also in the life of this vast land of ours.»

«Now perhaps its role will change again. Perhaps its visible charm and invisible pathos will be revealed to an interested public. Perhaps its new role is to remind Canadians of their immigrant roots and how much the tree sprung from those roots has grown and flourished.»

Jeannette Vekeman-Masson, who spent her entire childhood on Grosse Île in the early 1900s, writes in Grand-maman raconte la Grosse Île:

«What will become of Grosse Île? With my grandmotherly heart, I hope that there will be respect for the immigrants who rest there in peace. Most of them were fleeing poverty and seeking a promised land. They found it on Quarantine Island. Now they sleep in an enchanting and peaceful place, and we should not disturb their dreams.»
"I also hope that the government will respect the serenity of Grosse Île, and that people will always enjoy going there to think anew about the real meaning of life."

"May the future of my dear Grosse Île remain true to the image of the past, as it did IN MY TIME."

CONSIDERATIONS CONCERNING OPERATIONS

Free or controlled access?

Access by visitors to Grosse Île has always been «controlled,» since boat operators cannot land passengers unless they have first made arrangements with the provider of guided tours. (9) Very few pleasure boaters have been known to come to the island in their own craft. For that clientele, the island has retained its traditional image as a «forbidden» place.

But what will happen in years to come, when Grosse Île is better known and promoted as a public commemorative site? Will the wharf be made available to anyone, public boat operators and private boats alike, or will the current policy of limiting access to the island to passengers in tour boats be maintained? Will those passengers have to continue making «reservations» in advance?

Removing all barriers to access Grosse Île would certainly be more in keeping with the spirit of openness that characterizes reception in the heritage sites managed by the Canadian Parks Service. In the specific context of Grosse Île, however, the operational obstacles that would accompany a free-access policy must be remembered: overcrowding of wharf space for boats, late arrival of groups, the difficulty of controlling arrivals and departures, and so on. Thus this issue deserves careful consideration.

Supply of services adapted to access

Since they arrive by tour boat, visitors often reach the island not one by one or in small groups, but rather in large groups that, at least in high season, fill the vessels providing regular transportation to the island. In that context, the supply of reception and interpretation services will have to be planned to cope with the continuous arrival of structured groups only.

Moreover, the fact that access to the island depends on group transport will also determine visitors’ arrival and departure times. In other words, the boat operators’ schedules will dictate how long visitors can stay on the island. Visitor services will therefore have to be organized accordingly.

Logistical organization of the island

By assuming responsibility in 1993 for the general administration of Grosse Île, as provided for in the agreement with Agriculture Canada, the Canadian Parks Service will take over the entire operation of the island’s infrastructure and installations. In an isolated setting such as this one, this responsibility supposes the establishment of a functional, efficient logistical organization which will require substantial resources.

In concrete terms, the CPS will have to take over or manage the following services, several of them year-round:

- All customer services offered on the island, that is, those associated with visitor reception, information and orientation, interpretation and animation activities, recreational and relaxation activities, and the other usual services (sanitation, food service, etc.)
• All services relative to the application of the acts and regulations in force on the island (e.g., control of visitor access and movements, monitoring of migratory bird hunting activities, etc.), and public safety (e.g., accident prevention, first aid, emergency assistance, etc.)

• All services relative to supervision, conservation and maintenance of cultural resources (buildings, collection of objects, and reception and interpretation facilities and equipment, etc.)

• All technical services associated with operation, maintenance and supervision of infrastructure (e.g., supply of miscellaneous fuel, operation of the thermal power station, verification and maintenance of the water distribution and sewer systems, maintenance of roads and paths, snow clearance of landing strip, collection and disposal of household waste, etc.)

• All services associated with conservation and protection of the natural environment, including application of environmental emergency or fire action plans

• All support services for personnel residing permanently on the island (cooking, laundry, housekeeping, etc.)

• Management of the above-mentioned activities and services will require planning appropriate premises and installations (accommodation for resident staff, workshop, garage and storage, administrative office, etc.). The development of Grosse Île will thus have to take into account the major logistical deployment that operation of the site will require.

INDICATORS OF THE SITE’S SUPPORT CAPACITY

What bearings with respect to the number of visitors should be set for Grosse Île? Last season, some 5,600 visitors were received. While all agree that the island can take considerably more, is it in a position to receive up to 13 times as many, as some players in the tourism industry seem to wish? In order to shed more light on the outlook for visits to the site, the main pressure indicators with respect to the site’s support capacity were analysed in market study conducted in 1989-1990.

This analysis was constructed on the basis of three visit scenarios, a detailed review of the current and potential supply of marine transportation to Grosse Île, and various visit experience scenarios. The period covered by the analysis was the 12 weeks between June 20 and September 11, that is, 84 days of operation actually corresponding to the high tourist season.

In 1990, some 4,334 visits were recorded during this period. Over 100 visitors a day were observed on 13 occasions during that time. Sundays were the busiest days, accounting alone for some 30 percent of clientele. Similarly, more than 70 percent of visits were made during «long weekends», from Thursday to Sunday.

Three visit scenarios were developed in order to measure the daily level and distribution of visitors to the island. The scenarios provided for the following number of visits for the period under consideration:

Scenario A: 10,000 visits
Scenario B: 30,000 visits
Scenario C: 50,000 visits
These figures were allocated throughout the period according to the breakdown of visits observed in 1990; they represent 90 per cent of the demand expressed over a period covering 92 per cent of days of operation. The results show that the daily maximum number of visitors for each scenario would be 260 for Scenario A, 775 for Scenario B, and 1,295 for Scenario C.

The following table illustrates the breakdown of visits by scenario.

As this table shows, on no occasion were more than 250 people visiting the island on any given day in 1990 during the period studied. If, hypothetically, the breakdown of visits remained identical to that seen in 1990, this situation would occur about 10 times in the event of 10,000 visitors, 48 times under the second scenario, and 59 times under Scenario C. Moreover, out of the 84 days of operation considered, it was only under Scenarios B and C that more than 500 visitors were to be seen in one day, 22 times in the first case and 46 times in the second case.

Two different potentials were considered, for the supply of marine transportation. The first potential corresponds to the «regular» supply observed in the 1990 season, to which is added the supply — still hypothetical at this stage — of the shuttle from Montmagny. This potential was estimated at some 600 passengers per day. The second, «occasional» potential comes from five large cruise vessels (carrying 200-300 passengers). This supply of transportation services currently represents a potential of some 1,200 passengers, but it is thought this could be increased to 1,650 passengers if improvements were made to certain boats which would enable them to increase their capacity.

It should, however, be noted that this «occasional» daily potential is very uncertain. In fact, until the Grosse Île wharf undergoes major alterations, it is not in a position to accommodate more than one large carrier at a time. In the present situation, the wharf's daily potential is limited to docking two large-tonnage boats, one in the morning and the other in the afternoon. More realistically speaking, the «occasional» daily potential must be reduced to some 600 passengers. The total potential (regular + occasional) is thus estimated at more than 1,200 passengers/visits per day.

<table>
<thead>
<tr>
<th># VISITS</th>
<th>1990 SEASON 4334 visitors (# days)</th>
<th>Scenario A 10,000 visitors (# days)</th>
<th>Scenario B 30,000 visitors (# days)</th>
<th>Scenario C 50,000 visitors (# days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 250</td>
<td>84</td>
<td>74</td>
<td>36</td>
<td>25</td>
</tr>
<tr>
<td>250 to 499</td>
<td>-</td>
<td>10</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td>500 to 749</td>
<td>-</td>
<td>-</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>750 to 999</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>1000 to 1249</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>1250 to 1499</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>1500 and over</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
</tbody>
</table>

Compiled by L'ÉCART-TYPE
Note finally that in the case of the first two visit scenarios, the number of visits could be reached by using only the «regular» potential of marine transportation supply, whereas to reach 50,000 visits, 40 per cent of the «occasional» potential would be required over and above it.

While an estimate of the daily number of visits already provides us with interesting clues to the pressure that would be exerted on services, an estimate of the number of visitors present at the same time on the site is more revealing. Estimates have been produced, for each of the A, B and C visit scenarios, taking into account round trips by marine carriers (number of cruises per day for each boat, arrival and departure schedules, etc.) and hypotheses for visit experiences.

The estimates produced reveal that 78 visitors in the case of Scenario A (10,000 visits), 229 visitors under Scenario B, and 655 visitors under Scenario C will be all present daily.

In these conditions, we believe that the service infrastructure, buildings and facilities available on the island would be in a position to accommodate these simultaneous levels of demand, particularly in a context where visitors circulate continually. But caution is required concerning certain aspects of the supply of services to visitors.

On the one hand, the water distribution and wastewater discharge/treatment systems which could be set up on the island are not infinitely adaptable to demand. As an indication, note that the preliminary service infrastructure concept is based on an average number of visitors per day of approximately 500, with maximums of up to 1,000 visits per day at certain times in the season.

Moreover, it is almost absurd, in terms of operational resources, to consider offering supervision, as is done presently, to all groups of visitors (eg., one interpreter-guide per group of 25), in a context where some 500 visitors come to the island each day. A more flexible formula permitting self-guided visits automatically comes to mind, all the more so since potential clients have already expressed preferences along these lines.

Finally, at the appropriate time we should ask to what extent, aside from the island’s support capacity, the visit experiences offered to visitors will be able to adapt to several hundred individuals at once. In other words, will we eventually have to resolve to set quotas on the number of visitors to the site in order to preserve the quality of the experience we wish them to share?
Before looking at the development concept being considered to achieve the objectives of the Canadian Parks Service at Grosse Île, it is helpful to review the main principles behind the proposed approach.

Development principles

In our view, three major principles must underlie the development of Grosse Île as a national historic site:

Respect for «the spirit of the site»

By «respect for the spirit of the site» we mean preserving the mood that a heritage site conveys. Visitors who set foot on Quarantine Island no doubt experience varying degrees of emotion. It is thus not hard to imagine the particular significance that Grosse Île holds for the descendants of those thousands of unfortunates, many of them Irish, who met with suffering and death on the island. It is also with considerable fondness that the families of former employees of the station, for their part, recall the calm summers and peaceful winters spent on Grosse Île. What could be more natural, then, than to see the island as a place of pilgrimage, remembrance and contemplation.

But whatever their ties to those who once stayed on Grosse Île or still rest there today, today's visitors undeniably all feel a profound emotion when they experience the undefinable «atmosphere» that reigns on the island; indeed, one quickly realizes that the place has not kept pace with history:

«The pilgrim arriving on Grosse Île is struck by the impression of a place frozen in time,» as Jeannette Vekeman-Masson so rightly wrote.(1)

Grosse Île is indeed a genuine open-air history book. To remove that particular atmosphere of the past in which the island is wrapped would be in effect to silence it, just when it finally has the chance to tell its story. At no time, therefore, must the development of Grosse Île be allowed to dispel the emotion generated by contact with the site and its resources.

(1) Preface to Grosse Île, Gateway to Canada, 1832-1937, op. cit.
**Full coverage of themes**

It is important to present Grosse Île both as a whole, that is, in terms of the history of Canadian immigration, and in its specificity, that is, in terms of the role it played as a quarantine station. It is therefore essential that visitors be given the opportunity to explore the full range of historical themes chosen for this commemorative site.

**A nature/culture approach**

The humanized landscape of Grosse Île, shaped by a century and a half of occupation, lies within a geographic and natural setting that, isolated in mid-St. Lawrence, has changed little over the centuries. The permanence of that link between occupants and their environment is evident to this day in the landscape of the island.

At a different level, the island character of the site accentuates its heritage value. It makes perfect sense, in this context, to offer visitors a multifaceted «visit experience», one that is likely, in other words, to help them appreciate the island's entire range of historical and environmental features while making use of the educational, as well as recreational, potential of its resources.

These two key elements lead us to favour an integrated development approach, drawing on both the natural and cultural facets of the site.

**Proposed development concept: memory island**

With its venerable buildings fighting to defy Time, its monuments, grave markers and scattered remains which seem rooted forever in the soil, with its headlands, coves and sand bars which still resonate with the faint echo of tears and laughter, is Grosse Île not an open door to the past, a «memory island», as it were?
In terms of a commemorative approach, the development concept we propose starts from the idea that in order to sensitize people to their history and heritage, there is no better method than direct contact with authentic witnesses to the past. The resources themselves are thus considered the best interpreters of history, and one cannot think of better guides to accompany visitors on their trip back in time; it is therefore extremely important to let those resources express themselves.

Consequently, the development concept considered for Grosse Île is geared to preserving the existing character of the site by concentrating mainly on preserving the physical features and heritage resources already in place; in order to conserve the special cachet of the island as much as possible, this concept requires a certain restraint in the choice of interpretation aids and the organization of services for visitors.

Commemoration of themes

As the favoured approach implies, the commemoration of themes would be based, wherever possible, on the resources themselves as they have been handed down to us, preserved in their existing state. But in order to prepare the visitors properly for their discovery of this rich set of themes and to help them gain a better understanding of the complex evolution of the station over the past two centuries, an explanation of the historical context would be available to them upon their arrival on the island, inside the former immigrant reception and disinfection building.

The principal theme covering immigration via Quebec City between 1800 and the beginning of World War II encompasses far more than actual quarantine activities, and its correlation with on-site resources is far less obvious; that is why we propose to concentrate the presentation of this vast theme in one location, and the third-class hotel is being considered for this purpose.

THIRD-CLASS HOTEL

It has been proposed that the immigration theme be commemorated inside this imposing building.

Photo: Canadian Parks Service
Jacques Beaudell
124J—/PR-68S-183-9

The interpretation techniques set up on the island would be in harmony with the conservation of resources; use would therefore be made of «light» and sober media, such as simple, direct display modules, texts and illustrations, or furniture and objects from the collection of artifacts that, installed inside the buildings open to the public, would reflect the old quarantine functions.

As a general rule, the means of communication used would therefore avoid distracting visitors from the thematic contents and the authentic witnesses to the past. Interpretation aids would not require elaborate infrastructures, such as premises shielded from daylight or with climate control, and would not involve sophisticated media techniques.

The many subthemes connected with the history of the quarantine station would be presented, for their part, at various places on the island, in close association with the on-site resources that remain. Visitors would thus have the opportunity to enter several old buildings, namely the second-class hotel, the old wash house, the Anglican chapel, the Catholic chapel and the lazaretto. Together with the reception and disinfection centre, the laundry and the third-class hotel, this would give visitors access to eight buildings altogether.

Two cases might however be exceptions to this approach. In fact, we believe that communicating the immigration theme and placing the island's history in context are of crucial importance and could justify the use, when appropriate, of media tools recognized for their effectiveness and designed for the public of the year 2000. To various more traditional display modules would be added modern media at the cutting edge of audio-visual and computer arts and techniques (multimedia, computer graphics, etc.).(2) Thus,
through computer technology, visitors to the immigration interpretation centre would be able to obtain data on the passage through Quebec City of their immigrant forebears.

Although a guided tour service would be available, visitors would be free to visit the island by themselves, at their own pace. Various «menus» and tour routes would be offered, though, depending on the time available to them, their interests, physical condition, etc. A hiking circuit would be specially designed to allow visitors to enjoy the natural scenery of Grosse Île while discovering the features of an island environment.

**Treatment of historical resources**

Using this approach, the treatment of visible archaeological remains, structures and buildings would remain discreet and non-invasive. In addition, stabilization and restoration work would be performed on the buildings with the aim, primarily, of maintaining the features they have generally retained since their relative abandonment, while protecting them against future deterioration. Care would be taken, in particular, to preserve the marks left by the passing years, which heighten the authenticity of resources. No building would be restored to a former state (3) and none would be rebuilt.

Work on the interiors would follow the same principle as for that performed on the shells and would have the same aim of conservation. Except for certain buildings that would have contemporary functions (reception and disinfection centre, laundry, third-class hotel, etc.), no services (water supply, electricity, etc.) would be installed. Moreover, with the exception of the reception and disinfection centre and the second-class hotel, only the ground floor would be open to visitors. (4) Finally, the buildings would be neither insulated nor air-conditioned.

As a general rule, archaeological resources unearthed during excavations would be reburied, but some particularly evocative remains could be stabilized and displayed in situ to allow visitors to better visualize the traces of the various periods that shaped the history of the quarantine station. In the same vein, one could recall the presence in the landscape of certain structures whose remains are too slight or fragile to be put on display. Lastly, archaeological excavations could be incorporated in interpretation activities.

**Treatment of landscape**

On the whole, the major current physical features of the island would remain basically unchanged; while the capacity of the wharf would be increased significantly through the addition of moveable floating pontoons, the existing road, the landing strip and service roads would be kept as they are now. Moreover, to avoid giving the landscape too sterile a look, the land around uninhabited buildings would be kept in a semi-natural state.

The introduction of new service infrastructures (wastewater treatment, electric power lines, etc.) would be designed with a view to minimizing not only their impact on the natural and cultural setting but also their visual and aural impact (choice of out-of-the-way locations, off the tour route). The desire to offer a quality environment could moreover lead us to conceal or relocate contemporary installations that are judged necessary, in order to ensure the conservation of the heritage value of buildings and also prove costly. Allowing access to the second floor of the reception and disinfection centre and the second-class hotel is justified by the particularly evocative resources to be found there which bear direct witness to the passage of immigrants through quarantine (changing rooms and showers in one, small bedrooms in the other). Clearly, the matter of bringing those buildings up to standard should be given special study.

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(2) In cases where interpretation equipment could require particular installation conditions (e.g. multimedia show requiring shielding against outside noise and daylight and ambient humidity control), the reception and disinfection centre and the third-class hotel would be equipped with a double shell (internal sheathing meeting the prescribed requirements would be added inside old buildings).

(3) There could be just one exception to this rule: the reconstruction of roofs. In fact, several old cedar-shingle roofs, too deteriorated to be restored, have had to be replaced with asphalt roofs as part of the provisional protective work undertaken since 1989. The plan would be simply to re-establish the original roofing material.

(4) Generally speaking, restricting public access to the ground floor of buildings is proposed in order to avoid having to bring other floors up to standard, as such work could jeopardize the conservation of the heritage value of buildings and also prove costly. Allowing access to the second floor of the reception and disinfection centre and the second-class hotel is justified by the particularly evocative resources to be found there which bear direct witness to the passage of immigrants through quarantine (changing rooms and showers in one, small bedrooms in the other). Clearly, the matter of bringing those buildings up to standard should be given special study.
CONCEPT DE MISE EN VALEUR PROPOSÉ

PROPOSED DEVELOPMENT CONCEPT

Batiment ancien ouvert au public
1 Édifice de désinfection
2 Blanchisserie
3 Hôtel de 3ème classe
4 Hôtel de 2ème classe
5 Ancien lavoir
6 Église anglicane
7 Église catholique
8 Lazaret

Heritage building open to the public
1 Disinfection Building
2 Laundry
3 Third-Class Hotel
4 Second-Class Hotel
5 Former Wash House
6 Anglican Church
7 Catholic Church
8 Lazaretto
incompatible with the history of the site (e.g. fuel tanks located near the wharf) if the cost of such measures appears reasonable. Cemeteries, for their part, would receive the regular maintenance that their condition requires (restoration of grave markers, plant control, etc.).

Visitor services, on-site

On the whole, services provided for visitors, while reflecting the island context of the site and the special visiting requirements that this factor imposes, would remain intentionally modest. Basically, they would include, concentrated at the reception centre and the laundry, a reception and information area, washroom facilities, a restaurant offering refreshments and light meals and, possibly, a souvenir sales counter, with the latter two services being managed by a concession-holder.

Given the relative size of the site and the scattering of resources over close to two kilometres, the short stay of visitors on the island and the occasionally awkward weather (wind, sudden rain showers or blazing sunshine, etc.), exploring the island on foot could prove impractical, even impossible, for several visitors; a public transportation service - of a form, scope and management structure yet to be defined - would therefore be provided.

The other services and facilities provided on the island would include a first-aid station, one or two rest areas where visitors could have a bite to eat, and washrooms in the eastern part (the old laboratory could be used for the purpose). Footpaths with lookouts would also be provided to provide safe access to resources.

Visitor services, off-site

As is currently the case, visitors would continue to reach Grosse Île via private ferry services. Other than erecting appropriate road signs leading to the various embarkation points for the island, the only development planned off the site would involve installing, at the various wharves, a module providing general information on the attractions of Grosse Île, means of access, visiting conditions, suggested activities, etc. Needless to say, this information would also be available in publication form.

Directions regarding visits and use

How many visitors will Grosse Île be able to accommodate once the site has been developed? Taking into account the requirements of operational logistics at the site as well as the capacity of service infrastructures put into place, we think that an average daily volume of 500 visitors could be handled without difficulty, with a maximum of between 800 and 1000 visitors a day on some occasions.

If this average number of 500 visits per day were reached over the entire operating season (roughly 100 days including low season (June, September, October)), the annual volume of visitors to Grosse Île could therefore be about 50,000.

Of course, the theoretical capacity of the site should not be confused with the actual objectives as far as the number of visitors is concerned. Those objectives will be defined at the appropriate time, as the project develops, and will be re-assessed periodically according to prevailing conditions. One thing is certain, however: the marketing strategy will have to consider various parameters before establishing volume objectives.

By way of example, the actual availability of the supply of marine transportation service will have to be considered; in this regard, it is doubtful that one could aim for an annual volume in the order of several tens of thousands of visitors without the presence of a shuttle boat capable of making several scheduled daily return trips to the island.

It will also be necessary to consider the rate structure of the «product» so that it is truly competitive; if the average package cost of a day on Grosse Île should remain relatively high, as it is now, it would undoubtedly be difficult and costly to make significant inroads into the potential market, even with an exceptional product and sustained promotional efforts.

A third consideration, in fact, has to do with the scope of promotional efforts that will need to be made to achieve the target volume of visitors that will have been set; at first glance one can estimate that a hypothetical annual objective of over 25,000 visitors would require, given the shortness of the operating season, significant, concerted promotional efforts, particularly during what are traditionally considered slow periods.

It will also be necessary to ensure that our aims in terms of the number of visitors, in particular with respect to daily volume, do not interfere with the objectives that will have
been established concerning the individual visit experience; we must therefore try to strike a balance between the two parameters - volume and quality.

Moreover, the operational resources, internal and external, of the Canadian Parks Service that will be available will also have to be taken into consideration. It would be unrealistic, for instance, to try to attract and welcome hundreds of people to the island daily, each spending an average of three to four hours on the site, without having appropriate support staff.

Finally, in setting volume objectives, the capacity of regional tourism infrastructures will have to be taken into account.
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Grosse Île
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APPENDIX A

ENVIRONMENTAL ASSESSMENT

The federal Environmental Assessment and Review Process (EARP) is a mechanism used by federal departments and agencies to determine, assess and mitigate the environmental impact of developments and activities they are planning on their territory. This process is based on the self-assessment principle.

The Canadian Parks Service uses the federal EARP to ensure that natural resources are managed in a manner consistent with its priority mandate of Canadian heritage conservation. The procedures for applying the federal EARP at the Canadian Parks Service stipulate that master plans must be submitted to environmental analysis.

This facet covers the findings of this analysis in terms of impact screening. This level of review is intended to determine, assess and describe potential environmental impacts of the development concept presented above.

Reference base

The main concern with respect to Grosse Île National Historic Site is preservation of the historic heritage components. Natural components are also part of the heritage and must be protected as such. Management of this territory must therefore reconcile this dual heritage.

Drawing up the development concept is one of the stages in the planning process leading to production of a site master plan, which is essentially a guide for its preservation and development. This stage is to some extent an environmental assessment in itself, since the development and use proposals are subject to in-depth review and are based on a detailed analysis of the database available on the resources.

Development of a site cannot take place without some interference with the setting. It is therefore important to ensure that the impacts generated on the environmental components are acceptable, in line with the role of the site, and to minimize them as far as possible.

Grosse Île National Historic Site has not been in operation long, and the proposed development concept is based essentially upon existing structures and facilities. In this context, the purpose of this assessment is:

- to identify the present and future impacts of the developments considered;

- to assess the possible impacts of the activities involved in the considered development context.

Mitigation measures are also proposed to eliminate and/or reduce the environmental impacts associated with the proposed activities and management policies.

Development concept and site management issue

The management of Grosse Île occurs in a particular context, with historical and natural resources constantly rubbing shoulders.

That part of the island lying to the north of the existing road is wooded and wild, whereas the historical and archaeological resources are mainly concentrated in the southern sector of the island, along the east-west road.

The recreational and outdoor activities requiring light support in-
Infrastructure will be distributed around the historical zone. Furthermore, access to the island will take place via the existing wharf, located in the southwest; the planned reception building stands in line with the wharf. Most of the planned infrastructure has already been put into place and, overall, it will just require some improvements.

Environmental assessment of the proposed concept

Assessment of the environmental impacts stemming from the proposed development concept is based for the moment upon incomplete policies and, consequently, it does not represent a comprehensive assessment.

Part of the island was used from the last century for human quarantine purposes, then during World War II as an experimental station and, finally, as an animal research and quarantine station administered by Agriculture Canada. Various archaeological remains were unearthed during work on the potential study, and it is more than likely that several other remains are still buried. Except in the eastern sector, where there are three dumps (metal debris, concrete rubbish, etc.) and where the Duplain farm stood in 1832, the wooded part of the island has been little affected by human activities.

The developments and human activities are likely to affect the intrinsic value of both the historical and the natural resources. Analysis of the negative impacts of developments and activities must consider the extensiveness and intensity of the impacts and their permanence. This analysis first covers the impacts of an increase in the number of visitors on the historical and the natural resources of the island and also covers the development proposals.

Development option-related activities

- Pressures associated with the number of visits to the site

With more than 6,000 visitors a year, Grosse île National Historic Site must currently be considered a regional tourist attraction of moderate importance. A future increase in clientele could mean new infrastructure, such as additional hiking trails or rest areas, and involve impacts on the archaeological remains and the natural environment.

Maintenance methods are activities which can have repercussions on the environment. The use of pesticides represents a risk for the environment and public safety. As to waste, this can degrade the natural atmosphere of a site and disturb the behaviour of wildlife. But these routine activities are carried out without major risk for the environment and have minor, acceptable impacts.

- Access to the island

The wharf providing access to the island is already in place. The installation of floating docks to permit the simultaneous mooring of a larger number of boats will generate no negative impact on the environment. This alteration to the wharf may therefore be considered environmentally acceptable.

- Work on buildings

The concept proposes that the reception building be located near the wharf (old reception and disinfection building and laundry) and, once the interior is restored and rehabilitated, that it house a reception and information area, restaurant (light meals), washrooms and souvenir counter.

Development of the site involves work on several buildings, including the interior conversion of those that will be open to the public and devoted to a particular use. This work is likely to disturb the ground round about and to destroy any archaeological remains buried there.

The marking on the ground of certain remains, installation of interpretation boards and layout of access and interpretation trails may possibly necessitate excavations which, albeit shallow, may disrupt the known remains and on-site archaeological evidence. Indeed, some remains and artifacts lie very near the surface. It is also envisaged that a number of archaeological remains unearthed will not be reburied, but stabilized and exhibited in the open air.

Completion of this work under the supervision of an archaeologist or even, should the archaeological potential be deemed high, carrying out a preventive excavation before the work starts, will help to keep down the anticipated impacts to an acceptable level. In short, the impacts associated with excavation work or alterations to buildings may therefore be considered minor and acceptable in environmental terms.
Layout of a hiking trail in the natural sectors of the island

Laying out a hiking trail will likely have an impact on the natural environment following clearing, trampling during work and compacting of the island’s relatively thin layer of soil. Putting in this trail will require a prior layout analysis in order to avoid sites where the environment’s support capacity is not sufficient.

Any development in the forest will have to be adapted to the steep relief and thin layer of soil available. If the planned trail is to run along the littoral zone, it will be necessary to avoid the stations of shore plants of interest identified in the biophysical inventory of the island and possibly to bridge the development if it is located in the shore zone on the loose ground.

Establishing such a development may involve excavations which, while shallow, could possibly disrupt any archaeological contents of areas not yet dug. This eventuality is, however, quite unlikely since there is no mention anywhere of any human activities having taken place in the forest setting.

Impacts associated with trail layout work are considered minor to moderate and are environmentally acceptable.

Mitigation measures

In view of its small surface area, the number of visits to the site and its current use for recreational purposes may be described as low to date. Overall, the potential impacts that would be generated by activities carried out and necessary developments may be described as minor and are environmentally acceptable.

This impact could, however, increase should the number of visits rise substantially and visitors be left to themselves and use the natural environment with no intervention planned to guide or supervise them in their activities.

The following mitigation measures will have to be applied in order to eliminate or reduce potential negative impacts:

- A program of preventive excavations and/or archaeological supervision will have to be implemented during the performance of all excavation work associated with the construction, renovation or restoration of structures or buildings or the setting up of service infrastructure.

- Where necessary, measures (salvage excavation or site stabilization) will have to be taken to prevent the degradation of remains unearthed for the purposes of permanent display.

- A natural resources management plan will have to be developed in the short term for this site.

- To avoid the accumulation of waste and pollution of the environment, the waste collection system will have to be effective and geared to the number of visits to the site.

- During the next planning phases for this site, that is, before the work is carried out, each development or use project will have to be submitted individually to a more detailed environmental review.

Final decision

To judge by the screening based on consultation of available information, it may be concluded that the development concept proposed for this site is environmentally acceptable. Application of the mitigation measures mentioned above would help to reduce its negative impacts on the environment.

Consequently, the only negative impacts which the development concept could generate on the environment are minimal or may be mitigated by the application of known technical measures or other means which have proven effective in the past, as suggested by the mitigation measures mentioned.

This environmental assessment will have to be updated during subsequent planning and implementation stages.

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Grosse Ile
APPENDIX B

LIST OF STRUCTURES AND BUILDINGS ON GROSSE ÎLE

<table>
<thead>
<tr>
<th>No.*</th>
<th>Name of structure/building</th>
<th>Date of construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Celtic cross</td>
<td>1909</td>
</tr>
<tr>
<td>2</td>
<td>Wooden shack near cross</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Monument to physicians</td>
<td>c. 1847</td>
</tr>
<tr>
<td>4</td>
<td>Cemetery</td>
<td>c. 1832</td>
</tr>
<tr>
<td>5</td>
<td>Sustaining wall</td>
<td>After 1914</td>
</tr>
<tr>
<td>6</td>
<td>Dump</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Shed</td>
<td>c. 1945</td>
</tr>
<tr>
<td>8</td>
<td>Shelter for disinfection laundry</td>
<td>[1892]</td>
</tr>
<tr>
<td>9</td>
<td>Garage</td>
<td>c. 1942</td>
</tr>
<tr>
<td>10</td>
<td>Stable</td>
<td>1942-1945</td>
</tr>
<tr>
<td>11</td>
<td>Electrician's house</td>
<td>c. 1850</td>
</tr>
<tr>
<td>12</td>
<td>Water tower</td>
<td>c. 1910</td>
</tr>
<tr>
<td>13</td>
<td>Small structure adjacent to water tower</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>First-class hotel</td>
<td>1912</td>
</tr>
<tr>
<td>15</td>
<td>Small shed behind first-class hotel</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Old wash house</td>
<td>1855</td>
</tr>
<tr>
<td>17</td>
<td>Kitchen</td>
<td>1893</td>
</tr>
<tr>
<td>18</td>
<td>Bakery</td>
<td>1902-1910</td>
</tr>
<tr>
<td>19</td>
<td>Third-class hotel</td>
<td>1914</td>
</tr>
<tr>
<td>20</td>
<td>Sustaining walls</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Small structure near second-class hotel</td>
<td></td>
</tr>
<tr>
<td>No.*</td>
<td>Name of structure/building</td>
<td>Date of construction</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>22</td>
<td>Second-class hotel</td>
<td>1893</td>
</tr>
<tr>
<td>23</td>
<td>Small shed near #22</td>
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</tr>
<tr>
<td>24</td>
<td>Solvent shed</td>
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<tr>
<td>25</td>
<td>Small structure</td>
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</tr>
<tr>
<td>26</td>
<td>Fuel pipe</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Wall</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Western wharf</td>
<td>1847...</td>
</tr>
<tr>
<td>29</td>
<td>Disinfection building</td>
<td>1893-1927</td>
</tr>
<tr>
<td>30</td>
<td>Small wall</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Small structure</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Laundry</td>
<td>c. 1920</td>
</tr>
<tr>
<td>33</td>
<td>Sustaining wall</td>
<td>1913</td>
</tr>
<tr>
<td>34</td>
<td>Gatekeeper’s house</td>
<td>c. 1905</td>
</tr>
<tr>
<td>35</td>
<td>Guard post</td>
<td>1907</td>
</tr>
<tr>
<td>36</td>
<td>Small shed</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Small shed</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Medical assistant’s house</td>
<td>1893</td>
</tr>
<tr>
<td>39</td>
<td>Multi-family dwelling (upper block)</td>
<td>1905</td>
</tr>
<tr>
<td>40</td>
<td>Remains of kitchen of #40</td>
<td>1905</td>
</tr>
<tr>
<td>41</td>
<td>Small structure near old cemetery</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Anglican chapel</td>
<td>1877</td>
</tr>
<tr>
<td>43</td>
<td>Public Works Officer’s residence</td>
<td>1912</td>
</tr>
<tr>
<td>44</td>
<td>Small bridge</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Sidewalk</td>
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</tr>
<tr>
<td>46</td>
<td>Sidewalk</td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Superintendent’s shed</td>
<td>1873-1874</td>
</tr>
<tr>
<td>No.*</td>
<td>Name of structure/building</td>
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</tr>
<tr>
<td>------</td>
<td>-------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>48</td>
<td>Catholic chapel</td>
<td>1874</td>
</tr>
<tr>
<td>49</td>
<td>Catholic presbytery</td>
<td>1848, 1913</td>
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<tr>
<td>50</td>
<td>Flagpole</td>
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<tr>
<td>51</td>
<td>Battery</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Carpentry workshop</td>
<td>1902-1910</td>
</tr>
<tr>
<td>53</td>
<td>Swimming pool</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Small structure</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Animal quarantine</td>
<td>1965</td>
</tr>
<tr>
<td>56</td>
<td>Small structure</td>
<td></td>
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<tr>
<td>57</td>
<td>Animal quarantine</td>
<td>1965</td>
</tr>
<tr>
<td>58</td>
<td>Animal quarantine</td>
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<td>59</td>
<td>Animal quarantine</td>
<td>1966</td>
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<td>60</td>
<td>Well</td>
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<td>61</td>
<td>Animal quarantine</td>
<td>1966</td>
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<td>62</td>
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<tr>
<td>63</td>
<td>Animal quarantine</td>
<td>1966</td>
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<tr>
<td>64</td>
<td>Fence, animal quarantine</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Fence, animal quarantine</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Marconi station</td>
<td>1919</td>
</tr>
<tr>
<td>67</td>
<td>Physicians' residence</td>
<td>1912</td>
</tr>
<tr>
<td>68</td>
<td>Small structure adjacent to #67</td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>Playing field</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Tennis court</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>School</td>
<td>1909</td>
</tr>
<tr>
<td>72</td>
<td>Sidewalk</td>
<td></td>
</tr>
<tr>
<td>73</td>
<td>Shed</td>
<td>1902-1911</td>
</tr>
</tbody>
</table>

85
Grosse île
<table>
<thead>
<tr>
<th>No.*</th>
<th>Name of structure/building</th>
<th>Date of construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>74</td>
<td>Eastern wharf (remains)</td>
<td>1866</td>
</tr>
<tr>
<td>75</td>
<td>Sustaining wall</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>Sustaining wall for slope down to wharf</td>
<td>Before 1920</td>
</tr>
<tr>
<td>77</td>
<td>Physicians' residence</td>
<td>1912</td>
</tr>
<tr>
<td>78</td>
<td>Shed</td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>Employees' residence</td>
<td>1902-1908</td>
</tr>
<tr>
<td>80</td>
<td>Shack</td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Laboratory</td>
<td>1912</td>
</tr>
<tr>
<td>82</td>
<td>Shed</td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>Shed</td>
<td></td>
</tr>
<tr>
<td>84</td>
<td>Nurses' residence</td>
<td>1912</td>
</tr>
<tr>
<td>85</td>
<td>Remains of hospital for infectious diseases</td>
<td>Foundations laid in 1915</td>
</tr>
<tr>
<td>86</td>
<td>Large shed</td>
<td></td>
</tr>
<tr>
<td>87</td>
<td>Shack near runway</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>Landing strip</td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>Employees' residence</td>
<td>1902-1908</td>
</tr>
<tr>
<td>90</td>
<td>Shed</td>
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</tr>
<tr>
<td>91</td>
<td>Shack</td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>Remains of old hospital</td>
<td>1881</td>
</tr>
<tr>
<td>93</td>
<td>Fence</td>
<td></td>
</tr>
<tr>
<td>94</td>
<td>Fence</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>Research laboratory</td>
<td>1970</td>
</tr>
<tr>
<td>96</td>
<td>Research laboratory</td>
<td>1970</td>
</tr>
<tr>
<td>97</td>
<td>Shed</td>
<td></td>
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<td>Name of structure/building</td>
<td>Date of construction</td>
</tr>
<tr>
<td>------</td>
<td>---------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>98</td>
<td>Hospital laundry</td>
<td>1917-1920</td>
</tr>
<tr>
<td>99</td>
<td>Bridge</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Lazaretto</td>
<td>1847</td>
</tr>
<tr>
<td>101</td>
<td>Bridge</td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>Bridge</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>Cemetery</td>
<td>c. 1847</td>
</tr>
<tr>
<td>104</td>
<td>Cemetery</td>
<td>c. 1847</td>
</tr>
<tr>
<td>105</td>
<td>Bridge</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>Dump</td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>Shed</td>
<td>c. 1880</td>
</tr>
</tbody>
</table>

* Numbers refer to the structure and building identification plan.