

LOWER FORT GARRY NATIONAL HISTORIC SITE:

A Period Landscape

By:

Yousef Rasoulzadegan

A Practicum Submitted in Partial Fulfillment
of the Requirements for the Degree of
MASTER OF LANDSCAPE ARCHITECTURE

Department of Landscape Architecture
University of Manitoba
Winnipeg, Manitoba

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ISBN 0-315-81665-1

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ACKNOWLEDGEMENT

I would like to extend my gratitude to those who have supported and contributed in many ways to this practicum.

I sincerely thank my committee members for their criticism, insight, and support during the course of this study. I am most grateful:

To Professor A. E. Rattray, whose enthusiasm for the historic landscape was an inspiration to me and who supported me patiently through my graduate studies at this University.

To Dr. J. M. Shay for her valuable suggestions and input.

To Mr. G. Thomas, for generously providing all information and necessary documents and for the support of the Canadian Parks Service's Prairie Regional Office.

Finally, I would like to pay tribute to my family especially my wife, Farideh, for her encouragement, support and patience. It is to you that this practicum is dedicated.

ABSTRACT

This practicum deals with landscape restoration at the Lower Fort Garry National Historic Site, a cultural landscape in Manitoba. The site contains historic resources of national value, and functions as an historic "anchor" for the City of Winnipeg. Presently, the site lacks a coherent landscape and does not provide an appropriate setting for the historic buildings. Addressing this issue, and within the framework of an historic preservation strategy, it is the aim of this work to develop a landscape proposal representing the Fort during the 1850-1865 period. The proposal is guided by themes recommended by the Canadian Parks Service. The restoration plan for the site incorporates both an understanding of the site's heritage value and today's practical concerns.

The first part of the study explores the historical background of the site, including its relation to the fur trade in Western Canada and the impact of the Fort on the natural landscape. These studies resulted in a comprehensive body of information depicting the landscape at Lower Fort Garry during the 1850-1865 period.

In the second part, a comprehensive site inventory is provided. The results are analyzed, along with the prevailing conditions and issues and opportunities for development are addressed.

In the third part, planning / design criteria and guidelines are established. Recommendations for landscape restoration are shaped by evaluation of the information gained through research and documentation, internationally accepted guidelines and standards for treatment of historic landscapes, as well as policies established by the Canadian Parks Service. Based on these recommendations for landscape restoration, a design program and a conceptual plan are developed. The concept presented in this study supports a particular emphasis on the relationship of the Fort to the river, enhancement of the agricultural and industrial activities, and the reintroduction of pre-settlement vegetation cover to the site. The study concludes with a discussion of the plan elements.

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**CHAPTER 1:
INTRODUCTION**

CHAPTER 1: INTRODUCTION

1.1 PROLOGUE

Landscape can be viewed as a visual means of interpreting history, in much the same way as a written statement or a painting. Historic landscapes as metaphysical symbols of human kind and nature are an important and integral part of our cultural heritage. They help to define the nature of that heritage by reflecting cultural values and diversities, social behavior, traditions, techniques, and life styles of the people who lived on them. An historic landscape is a site which contributes to our understanding of past peoples or periods. It further provides a means by which we can more easily visualize historic events and activities. Therefore, historic landscapes and gardens must be conserved as reference points and archaeological evidence of the past, and as public amenities and places where people can relax, refresh their spirit or find inspiration (1).

The practice of historic landscape and garden conservation in North America is a developing discipline, and in recent years conservation of notable landscapes and gardens has received considerable attention. Although there is a strong case for a national program to insure historic landscape conservation, the context within which the historic features are located has not yet received the same attention (2).

The treatment of the historic landscapes and gardens as living monuments must be in accordance with internationally accepted guidelines and standards established for this purpose. These guidelines and standards are provided by the Florence Charter-ICOMOS (3) and several other documents, including a draft document prepared by P. H. Goodchild in the United Kingdom(1), the National Historic Sites Policy established by the Canadian Parks Service (4), and preliminary guidelines established by the United States National Park Service (5). Appendix 1 provides basic guidelines / standards judged to be the most relevant to the present work.

Lower Fort Garry, the subject of this study, is the only stone fort of the early fur-traders to be found intact anywhere in North America (6, 7). Sometimes known as the Stone Fort (8), Lower Fort Garry was established as a center for Hudson's Bay Company activities at Red River in 1830, and played a significant role in Canadian history in the 1830-1911 period (9). Lower Fort Garry was first established as a Hudson's Bay Company post in 1830. However, during its evolutionary period(1830-1963), besides its occupation by the Hudson's Bay Company, it served various other functions, including a

trading post, a military post, the first western Canadian barracks for the North-West Mounted Police, a motor country club and recreational area (9).

In 1951, Lower Fort Garry became a National Historic Site and, in 1975, an interpretation program was established with emphasis on the period 1850-1865 (7). The major reason behind the designation of the Fort as a National Historic site was its important association with the Hudson's Bay Company from 1830 to 1911 as well as the 1925 reference to historic association with the signing of Treaty Number One (7). Today, Lower Fort Garry represents one of the largest concentration of fur trade structures remaining in Canada. On the west bank of the Red River, with its stone walls, the bastions, and the Big House, Lower Fort Garry reminds visitors of the colorful days of the fur trade.

With respect to a period landscape at Lower Fort Garry, the existing information indicates that there is presently no overall strategy for the protection, presentation and interpretation of its landscape. A period landscape restoration plan was prepared in 1985 for the area within the walls (10). The development of the landscape, however, has been incremental, and has only resulted in a limited reintroduction of the period landscape (7).

Due to an ongoing interest in the landscape and history of Lower Fort Garry, and the desire to develop a management plan for Lower Fort Garry National Park, this study was undertaken.

1.2 PRACTICUM OBJECTIVE

The objective of this research is to develop design guidelines and a landscape restoration proposal which accurately represents Lower Fort Garry during the 1850-1865 period.

1.3 SCOPE OF THE STUDY

The main focus of this study is the development of a period landscape proposal for the site as it would have appeared during 1850-1865 period. The development of the program will be guided by themes recommended by the Canadian Parks Service (7). The emphasis will be on the interpretation of the agricultural activities at the site, based upon "the development of Lower Fort Garry as a trans-shipment depot and agriculture supply centre for the Rupert's Land fur trade", a theme not well presented in the current interpretive program at the Fort (7). The plan will include a detailed landscape restoration plan, including a planting plan, for period grounds within the Fort's walls as well as beyond.

The exploration of the existing resources and historic documentation, along with the

current conditions and issues, will provide the basis for planning decisions to be made in the development of the period landscape proposal.

This practicum will not provide definitive design solutions but rather, will formulate design guidelines and a demonstration plan for the site. These, in turn, will provide a basis for future decision makers with respect to the interpretation of the site's historic landscape features.

1.4 EVALUATION OF EXISTING INFORMATION AND LIMITATIONS TO THE STUDY

A great deal of historical research on Lower Fort Garry has been prepared by the Canadian Parks Service since the early 1960's. As the basis for this study, the printed reports currently available through the Canadian Parks Service were examined and information was extracted regarding the landscape development at the Fort (9).

An extensive literature review pertaining to Lower Fort Garry landscape records, journals, photographs, and archaeological findings was conducted by G. Thomas in 1979 (9). This was followed by a study carried out by Lord Cultural Resources Planning and Management Inc. in 1989 (11). Regarding the period of commemoration and the interpretive themes, some information is lacking which will affect programming and development possibilities at the Fort. Additional information is thus necessary, involving further research. The missing information includes the following (11):

- Iconographic information about agricultural activities at the Fort is limited, and the accuracy of some may be difficult to establish, e.g. haying, the exact location of the vegetable gardens and cultivated fields, etc.
- Documentation of landscapes associated with the recommended theme segments (especially gardens) is incomplete and / or lacking for the earlier periods.
- The location of some work areas and the exact arrangements of the interiors of two barns and the ox stable are unclear.
- The location of the stableman's house, fences, corrals and other features in the barn and stable yards requires research beyond the scope of this study. It is not known if there existed any smaller buildings or sheds in the area, such as pig styes or shelter for sheep.
- Agriculture related artifacts and authentic tools and machinery used in the agricultural activities at the the Fort are unknown.
- The information regarding the number and kinds of livestock used for various

purposes is incomplete.

Thus, considering the framework of the interpretive themes identified by the Canadian Parks Service (Section 4.2), limitations imposed by the archaeological and historic records do not allow the authentic restoration of agricultural and industrial complexes.

**CHAPTER 2:
GEOGRAPHIC SETTING**

CHAPTER 2: GEOGRAPHIC SETTING

2.1 SITE CHARACTERISTICS

Lower Fort Garry, 32 km north of Winnipeg, Manitoba, on Provincial Highway 9, is located at approximately 50° latitude and 96° longitude. The land base consisting of 34 hectares (including two hectares within the Fort itself) is situated on a 13 m high bank adjacent to the Red River, near the foot of the former St. Andrew's Rapids of the Central Lowland landscape area (Figure 1). The climate of the area is continental, characterized by large temperature differences between the long cold winters and hot moist summers.

The area in which Lower Fort Garry is located is characterized by a low river levee with steep banks and lack of flood plain. The riverbanks are colonized by a thin and intermittent band of riverbottom vegetation including Manitoba maple, green ash, cottonwood, American elm, willow, and dogwood. The Fort's neighborhood and surroundings are partially covered with deciduous oak forests.

The soil is mainly Black, overlying fine-textured Red River Clays containing scattered granite and dolomitic limestone boulders. The clay and boulders overlie the dolomitic limestone Red River Formation of the Ordovician period (12).

2.2 ZONING

The Lower Fort Garry site is located on Lot No.131 of St. Andrew's Parish and Lot No. 1 of St. Clement's Parish (Figure 2). The site is bounded on the west by Highway 9. The Fort is located within the confines of the Selkirk and District Planning Area (4), consisting of the Rural Municipalities of St. Andrew's and St. Clements and the Town of Selkirk (Figure 2).

In 1981 a development plan(By-Law No.15) for the area was approved, in which all properties along the eastern bank of the river and the properties adjacent to Lower Fort Garry were zoned as "RR-Rural Residential". Along the eastern bank, development is restricted to single family dwellings, on a minimum of 6000 m² with a height restriction of 13 m (7).

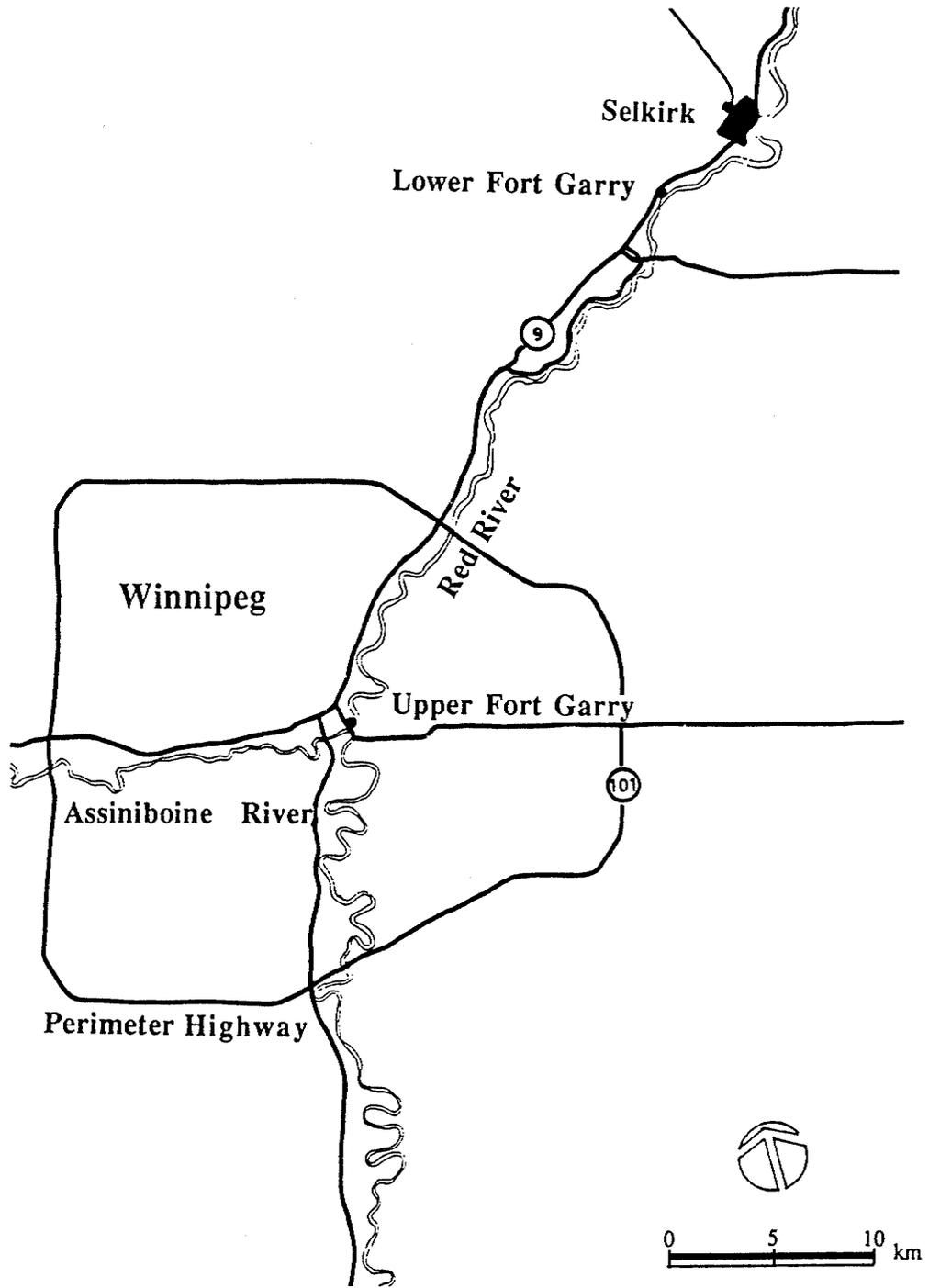


Fig. 1 . Lower Fort Garry Location Map.

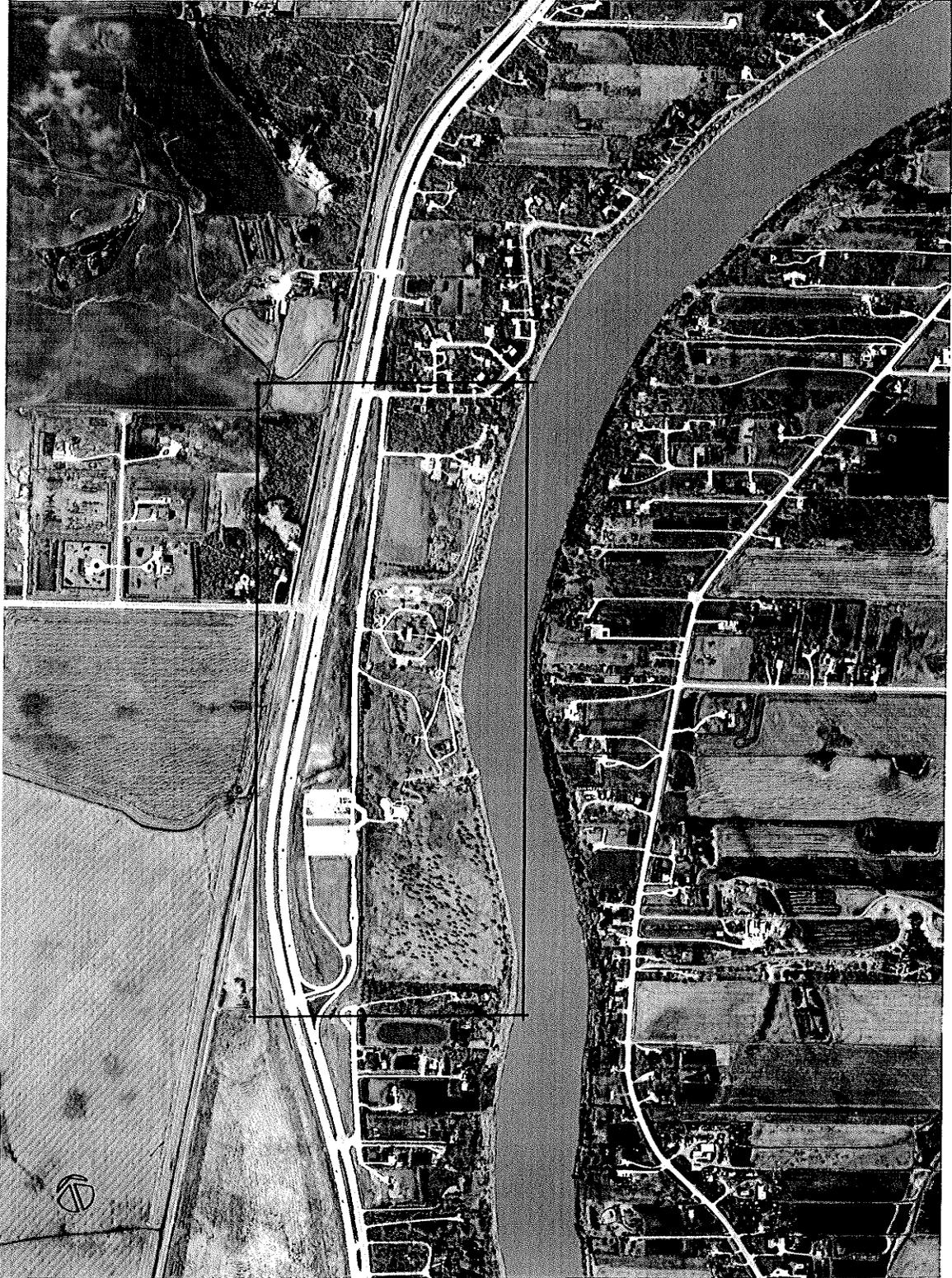


Fig. 2 . Aerial View of Lower Fort Garry and Context, 1992

(Source: Airquest Resource Survey Ltd.)(13)

**CHAPTER 3:
HISTORIC CONTEXT**

CHAPTER 3: HISTORIC CONTEXT

3.1 THE FUR TRADE AND ITS IMPACT ON THE LANDSCAPE OF WESTERN CANADA

The fur trade period is a well-documented era in Western Canadian history (14, 15, 16, 17). The fur trade predates European settlements, going back to the earliest fishermen from Britain, France, and Spain who crossed the North Atlantic to harvest cod off the eastern seaboard in the seventeenth century. These fishermen encountered North American natives, and eventually an informal trade developed between the two groups; natives exchanging furs for metal goods (14).

Early in the seventeenth century, when French and British vessels were exploring the coastlines of Hudson's Bay in an attempt to locate the North-west Passage, they found furs were abundantly available from coastal and inland native communities. Mention should be made of the fact that the North-West Passage could provide a short way round the world to bring back the spices and silk and teas from India and Japan. It was this pursuit, not the lure of the beaver, that first brought men into the heart of the New World by way of Hudson Bay (14, 18).

The fur trade spread to Western Canada at the end of the seventeenth century. However, the high cost of transporting goods over long distances led to the concentration of trade in two major companies, the North West Company and the Hudson's Bay Company. These companies competed for control of the West until 1821, when they merged (14).

The presence of French and British traders had certain impact on the western landscape. This included the establishment of trading posts on the coast of Hudson Bay to coordinate and attract trade from various sources. The Company built several Bay posts, each at the mouth of a major river (18).

The French traders erected a series of trading posts to intercept furs being brought to the Bay. The posts were located at strategic points on the major river routes leading to the Bay. Later, these became the centers of Winnipeg, Portage la Prairie, Dauphin, and The Pas. Both French posts, and later inland English posts, were of a less durable nature than the Bay posts. These were usually constructed of logs, surrounded by wooden palisades, but were not considered permanent structures. Their purpose, was exploitation of the vast inland fur resources (18).

The early posts constructed by the Hudson's Bay Company reflected a transfer of cultural ideals and their adaptation to the existing landscape. As Thomas and Clarke (1979) indicated, once a site was chosen, the layout and construction followed a predetermined pattern for the placement of buildings and paths. Natural vegetation in the vicinity of forts was cleared, as wood was needed for construction and fuel (9, 19).

In choosing a site, factors such as accessibility to the native populations and transportation routes, availability of wood, food supply, and sometimes the aesthetic attraction of the land were considered (9,18).

As a tradition brought to Western Canada by the first Europeans, gardening was practiced at the trading posts. Due to a milder climate in southern regions, these activities resulted in some valuable information which informed later agricultural practices (18). For the purpose of providing some of the provisions for the people staying at the posts, native and domesticated plants were cultivated at the trading posts at Hudson Bay (20).

By 1800, the cultivation of kitchen gardens at the posts of the various fur trading companies was common practice, and the varieties of vegetable and flower species planted were substantial (Appendix 5). The fields had an uneven and mottled appearance; the result of broadcast seeding over roughly plowed land, which was practiced up until 1850. The germination and, perhaps ripening of the crops was uneven (21).

Seeds were imported from England, and by the 1830's, and in part as a result of the leisure time of the Hudson's Bay Company officers, there was a demonstrated intention towards flower gardens and lawns. Plum and apple trees were imported, and experiments were conducted regarding transplanting of native fruit trees (9).

3.2 EVOLUTION OF THE LOWER FORT GARRY LANDSCAPE

During its evolution, Lower Fort Garry has undergone a series of changes and events which affected the landscape. The chronological history of these changes and events is provided in detail in Appendix 2.

With respect to the landscape of the site, historical research by Greg Thomas (9) and archaeological data from James Chism (6) and Peter Priess (22) have provided extensive information on "how the landscape looked during the historical period". The following, extracted from Thomas (9), is a summary of the landscape changes during the evolution of the site. These changes are followed by a brief description of the site prior to the construction of the Fort.

Governor Simpson's decision to build at the Lower Fort Garry site in 1830 was

based on fact that the Hudson's Bay Company activities during the 19th century were located along the river, because of the accessibility to water for both consumption and transportation. However, it was later understood that the selection of site for Lower Fort Garry by Governor Simpson was also based on the evaluation of the site as a trading post and its agricultural potential (9).

The site was originally wooded. Trees lined both banks of the Red River north from the Rapids, except for an occasional cart-trail or buffalo-path leading to the River (8). Oak, poplar, willow, elm and occasionally white spruce occurred on the banks along the river, both north and south of the site. In the creek bottom south of the Fort, a richer soil provided by flood deposits, supported relatively larger trees (6).

In the 19th century, the Red River was bordered by outcroppings of limestone extending from north of the Fort to a point south of St. Andrews Rapids. It was thus logical to use the limestone for the construction of the Stone Fort (8).

In 1826, when the original Fort at the junction of the Red and Assiniboine Rivers was destroyed by flood, Governor Simpson chose a new site down the Red River, one which provided a great opportunity to build a solid establishment out of reach of floods. The intention was that the new fort would serve an administrative and warehousing function in the fur trade, and would be a comfortable retreat for the Simpson family (9).

At the Lower Fort Garry site, the soil was Black, overlaid by fine-textured Red River Clay (12). Although the soil in the vicinity of the creek was well drained and easy access to the river was possible, the structures were located north of the creek to protect them from flooding and to provide visual access to the river, as well (6).

The landscape of Lower Fort Garry has been in a state of change, beginning in the 1830's, and the wooded character of the site changed dramatically after 1830 (9). To allow for the foundations of the structures, to provide access to the river for transportation, and to provide wood for fuel and construction material, the land had to be cleared of trees and shrubs. To erect buildings of stone, quarries and lime kilns were also required. It is obvious that a significant amount of vegetation had to be removed for quarrying, as well as for the operation of the lime kiln.

Within the Fort itself, different functions were separated for convenience and safety. Furthermore, provision for the individual officers to control and develop the landscape as they wished had a further impact on the Fort landscape inside the walls.

Transport of building material, equipment and other supplies necessitated a landing place for the Company's boats. Boats landed at the mouth of the creek south of the Fort, and a path provided a passageway up the slope to Ross cottage, and continued toward the

east gate of the main complex (Plate 6). Another landing area was located at the foot of the pathway leading to the riverbank north of the north-east bastion (9).

Although the "hay yard" existed in 1839, there is little evidence of agricultural development west and north of the Fort before 1845. Between 1845 and 1847, the landscape south of the Fort changed significantly. On the north side, no tree cover was evident, except the undergrowth near the top of the bank in front of Ross cottage. The land south of the Fort was open prairie, with light aspen cover to the west.

Construction of the distillery / brewery and the malt barn in 1845-1846 significantly affected the landscape at Lower Fort Garry. Along with the nearby cottage on the north side of the creek, the buildings formed the centre of the industrial complex. The later included the Miller's house, the grist mill, the saw mill, the grain flailing barn and several smaller structures, including lime and malt kilns, and a root house.

A 1858 plan documented by Henry Youle indicates that a small aspen woods (aspen, oak, elm, and maple trees) existed east of the Red River in the Fort area, and "light aspen woods" occurred west of the river. The area around and west of the main buildings was clear of vegetation. The land south of the creek and the land on the east side of the river were, however, heavily forested.

In response to Simpson's decision to exploit the agricultural potential of the immediate area in the 1850's, the industrial base at the creek was expanded, and these changes certainly had a great impact on the landscape of the Fort. A structure on the north bank of the creek south of the Fort was built as a log storehouse, and this was later moved into the Fort as a saleshop (Plate 6).

A single story structure with a fence running east to west on its south side existed north of the creek. This structure was built in 1845-1846 to house clerk John Black, while the British troops (Sixth Regiment of Foot) occupied the Fort. It is this building which is now identified as the Ross cottage (9).

When the creek area south of the Fort was developed for the Company's activities, the trails and the paths had to be extended. A path running northeasterly began near the present Highway 9 on the south bank of the creek, continued across the creek, then turned east toward the river (Plate 6). No evidence of a bridge at this location has been found. Another path branched off from this road shortly before it crossed the creek and extended along the south bank. This south road was introduced at the time of the erection of the Miller's house in the 1860's.

There is photographic evidence indicating a road branching off the road shortly after it had crossed the creek. This slight linear depression, now concealed by comparatively

heavy forest cover, may have extended as far as the storehouse, which is known to have stood on the north bank of the creek by the 1850's. Meanwhile, the main path crossing the creek continued up the bank, and gradually sloped eastward toward the distillery / brewery building at the mouth of the creek (9).

During the 1850's, lawn and flower gardens were introduced to the Lower Fort Garry landscape, and trees were planted as amenities (flower and vegetable seeds from this period are listed in Appendix 5).

Inside the Fort, a fence was placed to the east and north of the Big House. The officer's quarters outside the fence was a vacant land, without trees or shrubs. Within the fence some landscaping was evident, including a deciduous tree south of the pathway leading to the main stairwell, with shrubs on the other side of the entrance way. Perhaps a flower border around the base of the verandah; a spruce or fir tree near the lower end of the south-east corner of the verandah; another shrub or small tree at the west end of the verandah on the south side of the Big House (Plate 6).

The landscape of the warehouse area included two trees. Outside the fence the grass was cut low and crushed limestone covered the walk, eight meters wide, leading from the east gate to the warehouse. The lack of vegetation on either side of the warehouse emphasized the functional aspect of Hudson's Bay Company post landscapes. Thus only the Big House landscape within the fenced area was improved. Without, by necessity, the landscape was solely functional.

Stables and barns were located north of the Fort. They were built in support of the Hudson Bay Company's decision to establish a farm at Lower Fort Garry in 1857.

"By September 1857 between 40 and 50 acres of land presumably located across the road west of the Fort was plowed. It was further planned to prepare another 50 acres before winter for the spring planting of wheat, barley, oats, peas, potatoes, and turnips. At the same time, land south of the Fort wall was used as meadow land where hay was cut in late summer and autumn"(9).

For two decades the Company raised livestock and cultivated crops. These included hay and turnips to feed the stock. Several cereal crops were cultivated and a large vegetable garden was maintained. The associated livestock included cattle, oxen, sheep, hens, pigs,

and other farm animals. The housing and maintenance of the livestock was centered in the barns and stables located north of the Fort. The cultivation was carried out on a small area immediately west of the Fort and a long, thin strip of land running westward from the King's Road across from the creek (Plate 6). The fields were fenced, of post and slab for smaller fields and yards, and of rails for larger fields, giving the impression of one continuous farmyard from the river (9).

In 1857 Alexander Lillie, the farm manager, changed the traditional methods of cultivation by introducing so called "modern agricultural implements and intensive methods of crop tillage". He further expanded the cultivated lands across King's Road, and built cattle and ox barns around the stables.

At Lower Fort Garry, fencing was placed around the fields once the seeds were in the ground, and presumably were removed in the autumn to allow for harvesting. As well, fencing was used to separate "yards" for hay, corn, and grain (9).

For the purpose of cultivation, there is documentation that the ground was plowed during the summer months. This suggests that a more sophisticated form of crop rotation was adopted at Lower Fort Garry.

During the 1860-1875 period, it seems that the landscape inside the Fort wall did not change dramatically. The lawn was cut and maintained, flower beds were not yet well established, and the trees bordering the walkway were beginning to provide shade to the Big House grounds (9).

The improvements to the Fort interior during this period included the construction of a "hot bed", located alongside the veranda on the south side of the Big House, and a sun dial, sited on the lawn south of the Big House. A bell was also located on a wooden frame, about four meters from the west wall, behind the saleshop.

During 1870's, significant changes took place in the Fort landscape, including the erection of additional structures (ice house, root house, gardens and bake ovens) by Manitoba's first provincial penitentiary (1871), resulting in a densely developed landscape on the north side of the Fort. Addition of structures by the first contingent of North-West Mounted Police (1873) included new stables, a kitchen and washrooms.

In the 1890's, changes included a graveled walkway within the Fort walls lined with painted white stones, a fenced area by the north gate, the introduction of a lattice around the verandah, and a formal fence along the south east side of the verandah. During this period the grassed area east of the Big House lawn was mainly mowed and well-maintained. As well, a gravel roadway was maintained from the east gate directly to the Big House.

In 1911, the saleshop was closed and the Fort purchased by the Federal Government as a National Reserve. Then, in 1913, the Winnipeg Automobile Association Motor Country Club leased the Fort property, including the area within the Fort walls and 26 hectares of property between the highway and the river.

During the occupancy of the site by the motor country club (1913-1963), the following major landscape changes took place at Lower Fort Garry: the development of a golf course south of the Fort which required some tree removal south of the former Miller's house, the erection of a landing stage for motor boats at the point where the creek connected to the river, the demolition of the horse stable north of the Fort, the introduction of a parking lot at the location of the former garden north of the Fort, and the establishment of a large garden along the north wall (9).

In addition, the motor country club introduced circular stone lined garden beds within the Fort walls, thus significantly changing the appearance of the site as compared to the early years of the Fort's history.

In terms of vegetation, the changes south of the Fort included the following: the former site of the industrial complex at the creek was partially hidden by stands of elm and oak; the golf course on the former meadow land was shaded by tree cover along the west fence; groves of elm, poplar, and maple stood west of the present site of the reconstructed blacksmith's shop. As the land north of the Fort was partially under cultivation as a vegetable garden and as hay land, it remained free of tree cover throughout the 1913-1963 period (9).

In conclusion, the information provided in this chapter emphasizes the historical connection between the gardening/ agricultural activities at Lower Fort Garry and the fur trade era. It further gives an understanding of the appearance and function of the Lower Fort Garry landscape during the general period from 1850 to 1865 and, specifically the years between 1850 and 1865. This information provides the basis for restoring the period landscape of Lower Fort Garry.

**CHAPTER 4:
RESTORATION HISTORY
OF LOWER FORT GARRY**

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 OF LOWER FORT GARRY**

4.1 RESTORATION PROGRAMS AND THEME ESTABLISHMENT

Development of Lower Fort Garry National Historic Park after 1963 continued for some times without an overall plan. Since that time a number of restoration / reconstruction programs, with limited scopes, were initiated, as follows (7):

- In 1956 a public washroom was built in the south-east bastion.
- In the 1960's, the Big House and museum were restored to their period appearance and function.
- In 1968 the south-west bastion was restored.
- In 1969-72 the saleshop / fur loft was restored to its period appearance and function.
- In the 1970's the warehouse and the men's house were restored to period appearance.
- In 1971 Fraser house was moved to Lower Fort Garry, and was placed at the location of the original farm manager's cottage built in 1840's.
- In 1973 Ross cottage was restored to its historic appearance.
- In 1975, an interpretation program was prepared, with emphasis on the period 1850-1865. It focused on the Hudson's Bay Company occupation of the site, with particular emphasis upon the period 1850-1865.
- In 1977 the north-west bastion / bake house was restored to its period appearance.
- In 1990 the north-east bastion and walls were reconstructed.
- In 1978, the Canadian Parks Service identified two major "themes" to guide the interpretive programs initiated in 1975. The themes were as follows (7):

Theme One - "The organization of the Hudson's Bay Company with particular emphasis upon the occupation, material culture and leisure pursuit of the officers and servants at Lower Fort Garry".

Theme Two- "The evolution of Lower Fort Garry as a trans-shipment centre and industrial/ agricultural complex".

These themes were further complemented with five minor themes or "sub-themes"(7):

Subtheme One- Lower Fort Garry as an administrative headquarters and company retreat.

Subtheme Two- The evolution of a fur trade architecture and landscape.

Subtheme Three- The Fort and the Lower Red River Settlement.

Subtheme Four- The trading relationship between the Hudson's Bay Company and the native people.

Subtheme Five- Lower Fort Garry and its use by other agencies, such as the North West Mounted Police, Manitoba Penitentiary and Asylum and motor country club.

During the period of restoration (1956-1977) and increased visitation in the late 1960's, a Visitor Reception Centre was proposed for Lower Fort Garry, and it was opened in 1979.

In 1965 a plan was developed and approved by Treasury Board for the lands within the walls. The plan included restoration, reconstruction, and period furnishing of a number of historic buildings at Lower Fort Garry.

Landscape restoration at the Fort began in 1985 following a proposal for the area within the walls (10). Implementation of this proposal brought about some reintroduction of the period landscape, including the replacement of the formal flower gardens with grasses and native Manitoba flowers (7).

In 1986, based on the 1972 plan provided by the Canadian Parks Service, the grass outside the Big House fence was allowed to grow longer, while inside the fence the Big House grounds were restored to their formal appearance of the early 1850's. As part of landscape restoration plan the flower beds inside the west and north walls of the Fort were removed from the historic zone (7).

In 1988, Mr. Douglas Harper, Director-General of the Prairie and Northern Region, determined that a management plan was required for the Lower Fort Garry National Historic Site, to address a number of issues impacting on the future operation of the site. This was followed by a new and more simplified set of three themes, approved by the Canadian Park Service in 1989 (7):

Theme One-"The development of Lower Fort Garry as a trans-shipment depot and agriculture supply centre for the Rupert's Land fur trade".

This theme highlights the economic importance of the fur trade, and its influence on permanent settlement in the early-mid nineteenth century in Western Canada. The shift in

resource exploitation from furs to agriculture which affected the landscape development at the Fort is reflected in this theme. Due to the significant role of the Fort in transportation and service in the Rupert's Land fur trade, this theme attempts to emphasize Lower Fort Garry's function as a major launching point for the annual York boat brigades, and the shipping of locally produced goods and agricultural products. In this regard, light industries such as a boat-building operation, a grist and saw mill, and a lime kiln were operated by Hudson's Bay Company. In addition, the production of cereal crops and livestock were the main activities at Lower Fort Garry. Oxen were used in the cart brigades which transported goods and supplies between Red River and western posts such as Carlton and Fort Edmonton. Local produce was also sold to the Company at Lower Fort Garry by the farmers of St. Andrew, St. Clements and St. Peter's parishes (7).

To represent this theme, the following interpretive resources are included:

- All the employees resident at the Fort, from the chief trader who hired the company tripmen to the laborers who cut the hay, packed the furs and operated the grist mill
- Salesshop / fur loft
- Farm manager's cottage
- Blacksmith shop
- North west bastion
- Remains of the industrial complex along the creek south of the Fort
- Remains of the agricultural complex north of the Fort
- York boats
- The landscape within the Fort walls, and the adjacent lands

Theme Two-"Lower Fort Garry as an administrative headquarters and focal point for the Lower Red River Settlement".

Since its establishment in the early 1830's, Lower Fort Garry served as the Hudson Bay Company's administrative headquarters for the Northern Department fur trade. Lower Fort Garry also played an important role linking the Hudson's Bay Company with the intensive network of trading posts in Western Canada and to the British overseas. The connection between the Hudson's Bay Company and Britain was particularly evident during the 1840's, when an English military contingency (the Sixth Regiment of Foot) occupied Lower Fort Garry for nearly two years (7).

From the Big House, Eden Colvile administered the Company's operations

throughout Rupert's Land. At the same time John Black, as chief trader, managed the operations at the post, including the movement of goods, agricultural produce and furs between Lower Fort Garry and other Northern Department establishments. Lower Fort Garry also served as a retail outlet and business centre for the Lower Red River community.

Lower Fort Garry failed as an important fur trade trans-shipment centre in 1870, and a year later Indian Treaty Number One was signed, between the Canadian Government and representatives of the Cree and Objibwa nations at the Fort.

Theme Two includes the following interpretive resources:

- Salesshop / fur loft
- Remains of the industrial complex
- Men's house
- The plaque commemorating Treaty Number One
- Hudson's Bay Company artifact collection

Theme Three-"Lower Fort Garry and the evolution of fur trade architecture and landscape".

This theme includes the various buildings and their architectural styles and land use represented at Lower Fort Garry. The complex was a popular fort in Red River area. Along with Prince of Wales Fort, Lower Fort Garry adopted masonry technology in the construction of its limestone buildings (7).

From the view point of architectural forms and composition, the plan of Lower Fort Garry and its structures are significant resources. The Fort followed a familiar pattern in its development. Once the Big House and main storage facilities were erected, walls and bastions were constructed. Functions required to support the post's agricultural and transportation were located outside the main compound adjacent to the river. When Deputy Governor Colvile and his wife resided at the Fort in 1850, they landscaped the area within the Big House fence. This area has now been restored to its 1850's appearance, and is used to interpret the lifestyle of officers who lived at the Fort and demonstrates early horticultural experiments.

This theme can be interpreted with the following resources:

- The Big House and surrounding compound
- The Fort wall and four bastions
- The Men's house

- Warehouse building
- Salesshop/ fur loft
- Farm manager's cottage
- Ross cottage
- Grounds both within and outside the Fort walls

Within the framework of these themes, greater emphasis has been placed upon "the role of Lower Fort Garry as a trans-shipment depot and agriculture supply centre for the Rupert's Land fur trade " for interpretation at the Fort (7). The agricultural / industrial complex at Lower Fort Garry has been considered for restoration, primarily because these facilities clearly represent Fort's supply and trans-shipment role in the fur trade. However, presently this theme is not well represented in the interpretive programs at the For. This framework includes the 1850-1865 period, which coincides with significant changes and developments to the Lower Fort Garry landscape (7).

4.2 A LIVING HISTORY FARM FEASIBILITY STUDY

In 1989, for the purpose of enhancing the agricultural interpretation of the site, Lord Cultural Resources Planning & Management Inc.(LCRPAM) was commissioned by the Canadian Parks Service and the Lower Fort Garry Volunteers Association to conduct a feasibility study regarding the development and operation of a "living history farm' at the site. The following is a brief summary of the study, results, and the program proposal provided by the consulting firm. The implementation of this program has not yet been approved by the Canadian Parks Service (11):

In order to evaluate the information and other essential resources required for physical or interpretive development projects, the following points were addressed by the consultant team:

- the analysis of site, visitor markets, and economic factors
- the establishment of the requirements for farming activities, and their impact on feasibility issues
- the analysis of the facility requirements necessary to support and present a living history farm program at Lower Fort Garry, and as well the management / staffing needs

Study results obtained from LCRPAM indicated that interpretation of some of elements of a

living historical farm, such as farm animals, would be more feasible than for elements such as the buildings, equipment, implements and crops (11). First person interpretation was thought to be important and consistent with the existing program at Lower Fort Garry. The consulting firm further indicated that presentation of farm animals and first person interpretation would require an appropriate physical context, one which would include some farm buildings, equipment, implements and crops. According to their report, it seems that a farm animal-oriented living historical farm would have particular appeal to the visitors.

Based on the assessment of the technical feasibilities, the availability of physical resources (land, buildings, artifacts) and animals, seed, and nursery stock, and programming and management concerns, LCRPAM recommended that historical reconstruction of the agricultural complex located north of the Fort was not feasible with the state of the site, under Canadian Parks Service's policies respecting authenticity and integrity. Specifically, there is insufficient information for accurate reconstruction of any of the buildings, with the possible exception of the horse stable. Even if the buildings could be accurately replicated, the consultant's findings indicate that reconstruction could not be recommended at this time (11).

The market analysis conducted by the consulting firm did not support the conclusion that a reconstructed period farm would be successful in attracting a significant increase in visitation. They indicated that activities are the most important factor, and that enhancing animation is more important than building new "historical" features.

Regarding the agricultural complex after 1857, the consultants advised that the size of the complex would be too large for the scale of the farm operation to be presented. Furthermore, to provide a large farm complex with a handful of stock would be inappropriate. Again, the physical nature of the facilities that may have existed in this area prior to 1857 is too uncertain to support reconstruction.

Reconstruction of the agricultural complex as it was during the 1850s was not recommended in the study findings, however, the options outlined below were suggested (11):

Option One: Enhancement

In this option it was proposed to enhance the present interpretive program by expanding the agricultural activities at the site. The suggested program included gardens, processing and handling of the agricultural crops, and reestablishing landscape features such as fence lines. Special events associated with farming, animal husbandry and food

processing were also included in the program. Use of the ruins, identified in an appropriate manner, was seen for the agricultural complex. To provide a more complete picture of the archaeological resource in this area, further archaeological studies in the area are needed.

Option Two: Animation

Animation was considered as a further enhancement of Option One, with additional farm animals included in the agricultural program. This option requires the construction of a barn, fenced yard, and pastures and other physical facilities for animal care.

Option Three: Volumetric and /or generic reconstruction

In this option reconstruction of the barnyard area for at least those buildings identified and documented through the archaeological studies was recommended. The construction of new buildings, such as a maintenance yard and stable for animals, and of traditional materials is feasible. However, due to the lack of adequate archaeological data, the interiors would be fully modern. Thus the interiors should not be accessible to the public.

Option Four: Processing and industrial theme

The focus of activity in this option was the industrial and agricultural areas south of the Fort. This option can be implemented with a minimum of construction, such as a barn in the location of the grain flailing barn. Other industrial activities, such as brewing, milling and lumbering, could be added as a future development.

Option Five: Red River farm

In this option a living history farm, reflecting a typical river lot farm of the early nineteenth century along the Red River, was proposed for Lower Fort Garry.

In summary, although there is an intense interest and concern for restoration of a period landscape at Lower Fort Garry, however, no major landscape development has taken place since 1963.

Regarding the development and operation of a living history farm at Lower Fort Garry, the first two options can be developed in an incremental way and can be adjusted over time to fit changing demands and resource levels.

**CHAPTER 5:
METHODOLOGY**

CHAPTER 5: METHODOLOGY

This study aims to develop a landscape restoration proposal portraying the themes established by the Canadian Parks Service to interpret the historic features at Lower Fort Garry (Section 4.1). For the purpose of enhancing the agricultural interpretation of the site, the possibility of providing an interpretive program which includes live presentations, model displays, and/or demonstrations was explored. Furthermore, the surrounding contemporary landscape (beyond the historic grounds) is examined in order to assess its relationship to the period grounds, to assist in interpreting the 1850-1865 period and to provide a sense of orientation. Briefly, the following steps were followed during the course of this study:

Firstly, the existing research documents and often information available through the Canadian Parks Service, regarding the historical background of the site, was reviewed to establish the site's character and features during the 1850-1865 period. The literature, including pictorial evidence, was further examined to identify changes that have taken place since 1865, and their possible impacts on the character of the site.

Secondly, a comprehensive site inventory was carried out, which included an examination of natural and man-made features and resources. The types and origins of plants existing in the park during the 1850-1865 period and at present, as well as of the indigenous plant species were studied and documented. In the meantime, those policies and objectives for developing a historic landscape at Lower Fort Garry, initiated by the Canadian Parks Service (4,7), were reviewed in order to establish the planning / design criteria.

Thirdly, the information compiled from the field observations and literature, along with the visitor survey records (23) were analyzed. Furthermore, several case studies with successful results were reviewed and consulted (24, 25). The analysis resulted in issues and opportunities for landscape development, as well as the establishment of design guidelines. A publication by the Canadian Parks Service (7) regarding present management issues and problems was also consulted to supplement the above data. During the course of this analysis, constraints to development and present day problems were identified, and their impacts on the plan proposal were assessed.

Fourthly, research findings, and the results obtained from data analysis and interpretation provided the basis for programming and plan development. Two design

options which could contribute to the future development of the park were developed. A preferred option was developed based on its usefulness in achieving the overall goals for development of the site, and its consistency with the Canadian Parks Service policies and objectives (Figure 3). The proposal is presented in both graphic and written format.

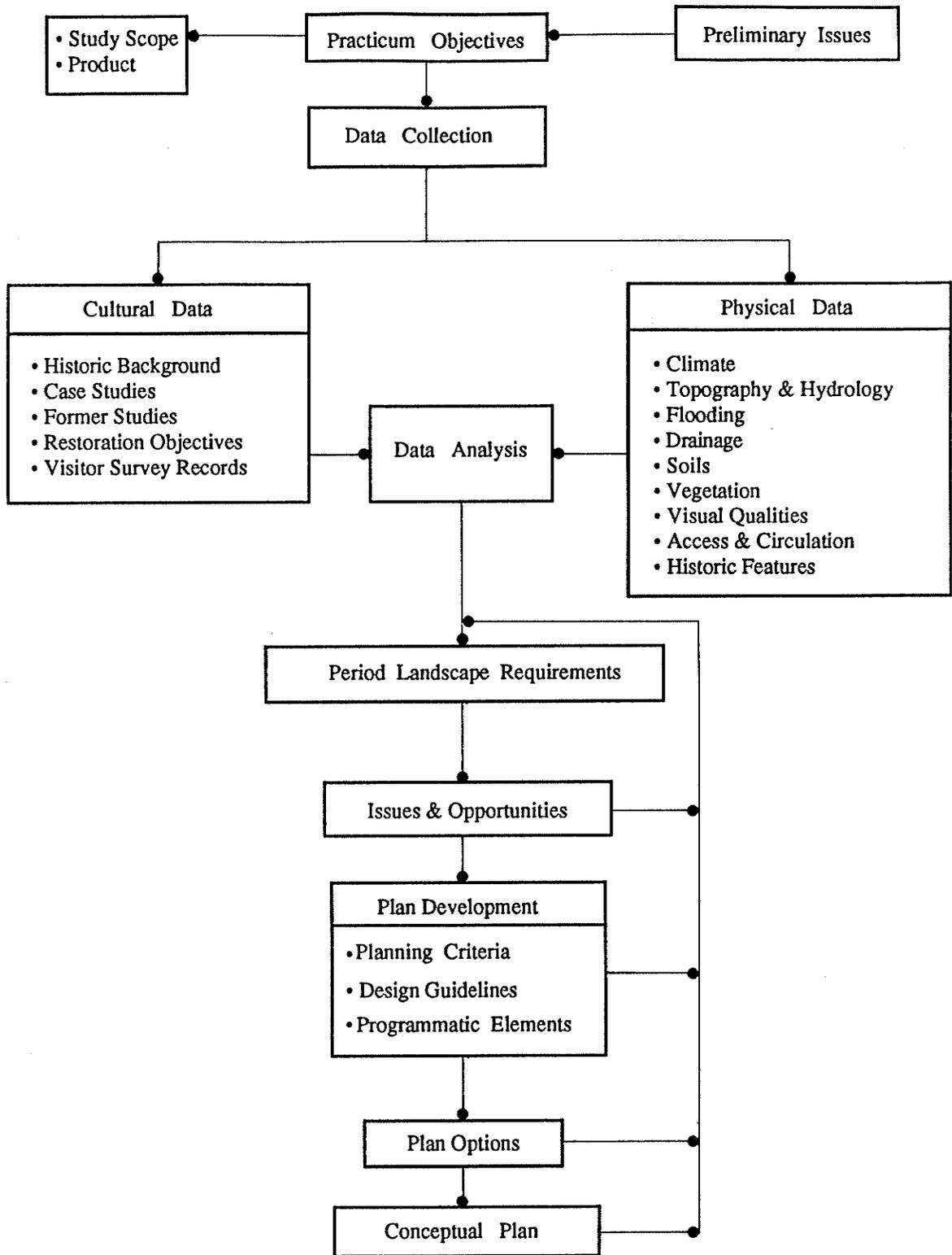


Fig.3. Methodology Flow Chart

**CHAPTER 6:
SITE ANALYSIS AND
RELATED ISSUES**

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RELATED ISSUES

6.1 DOCUMENTATION OF CURRENT CONDITIONS

6.1.1 Climate:

The major climatic conditions of the area in which Lower Fort Garry is located are summarized in Figure 4. During the winter, winds are predominantly from north and northwest directions with average speed of 18.6 kph, while summer winds prevail from south and southwest at 16.8 kph. The mean monthly precipitation at Selkirk, together with the hours of sunshine and mean monthly temperatures for the 1951-1980 period are given in Figure 4. The annual precipitation is 507 mm with the greatest amount falling in summer. There are dramatic temperature differences between the long cold winters and hot moist summers. In the 30 year period between 1951-1980, recorded temperature have ranged from -45° C to 36° C. In the Selkirk region, there are approximately 2200 hours of a possible 4500 yearly sunshine hours (26).

6.1.2 Topography:

The land at Lower Fort Garry shows a rise in elevation from the creek south of the Fort toward the north (Plate 1). The site contains no physical constraint to landscape development, with the exception of the ravine, which at present separates the period grounds from the contemporary grounds. There are no rock outcrops on the site.

The riverbank is characterized by ruggedly to gently sloped, steep alluvial banks covered with natural riverbottom vegetation. The steep slopes seem to have resulted from sliding of the silty clay alluvial soils prevalent along the Red River (Plate 1). Presently, along the river's edge, some limestone exists, resulting a stony or rocky edge. There is an approximate 13 meter drop in front of the east wall of the Fort to the normal river's edge. This drop decreases towards the creek to the south.

6.1.3 Drainage:

Due to the existence of the grassed surfaces, in general, there is no significant runoff on the site. Moisture is largely absorbed as a result of the imperfectly drained

subsurface clays. In the past this may have contributed to the sliding and instability of the riverbanks, especially where the vegetation was completely removed. In some area (Plate 1), lack of ground cover, combined with steep slopes and runoff has resulted in severe erosion, especially in the area of the pedestrian walkway.

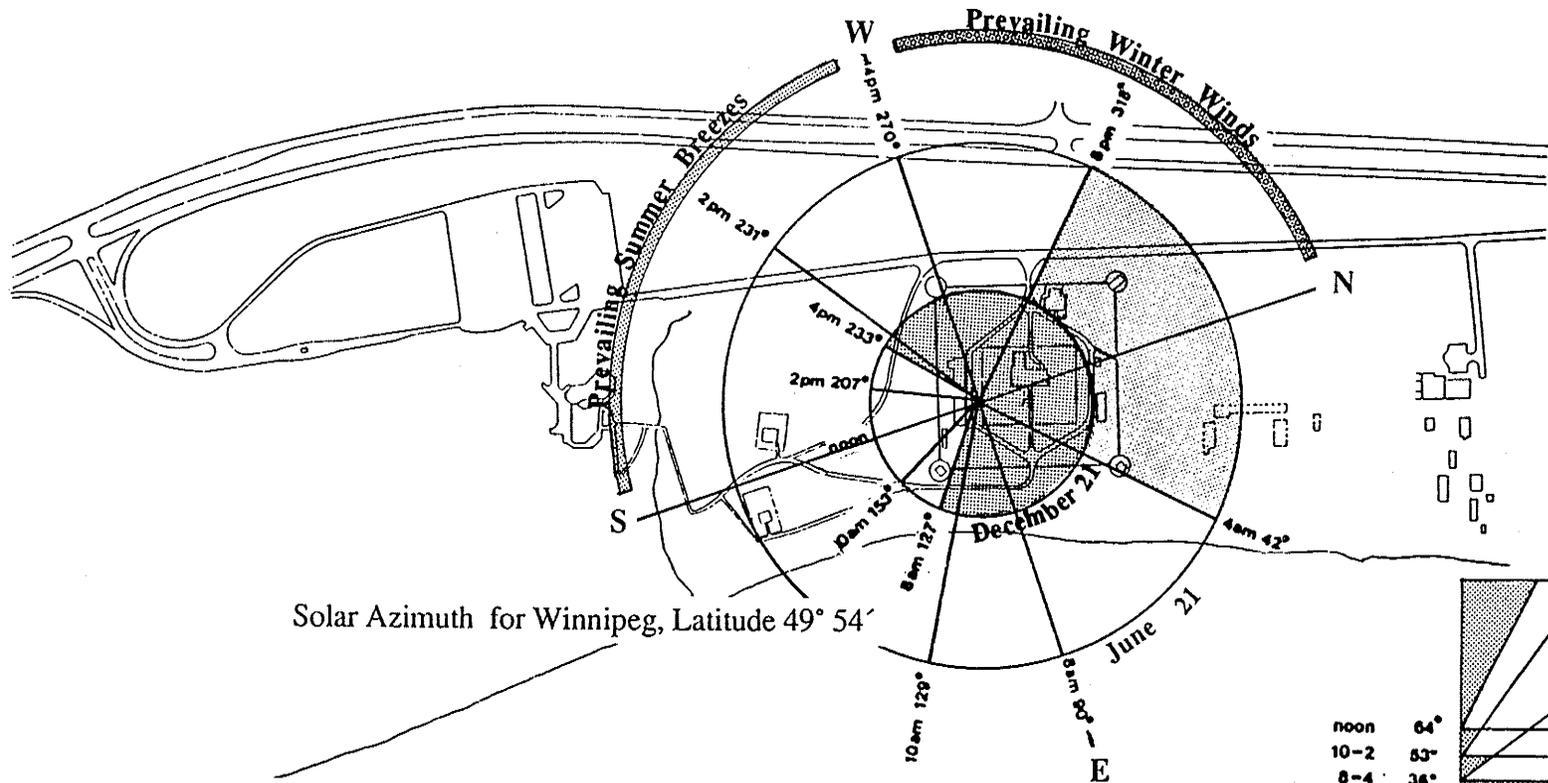
6.1.4 Soils:

The soils at Lower Fort Garry are "Black". They overlie Red River Clay, a 10 to 13 m thick calcareous lacustrine deposit with scattered granite and dolomitic limestone boulders (12). In Black soils, the "A" or surface horizon is granular in structure, high in organic matter, friable, and generally neutral to slightly alkaline in reaction.

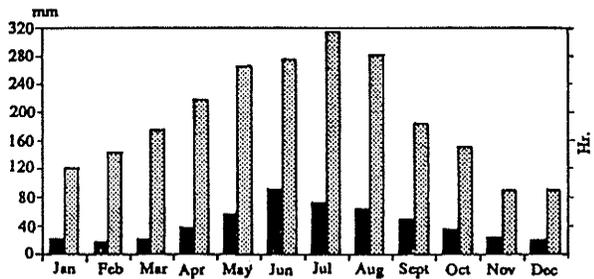
The creek south of the Fort seems to have traces of alluvial soil with a weakly developed profile. The creek helps to drain the land to the west of the low levee bordering the river (6).

The land north of the Fort is a low gravel ridge overlying a sandy Black soil. The ridge impedes the drainage of the land immediately west of the ridge (6). To the west of the site, the land is composed of well to intermediately drained associates of Osborne Clay (6). These soils are developed on flat or depressional topography under meadows. The Osborne soils have a very dark grey "A" horizon 7-15 cm thick, rich in organic matter, and somewhat granular and friable when moist. They are alkaline in reaction. In some areas, a lime carbonate accumulation occurs immediately below the "A" horizon, resulting in chlorotic symptoms in foliage. The subsoil is Olive Grey to Grey clay, plastic and sticky when wet but very hard when dry, and is sometimes moderately high in lime and always iron stained. These poorly drained soils are often alkalized and are not suitable for cultivation (12). At Lower Fort Garry, the Fort itself, and the surrounding land south of the wall, have well-drained soils.

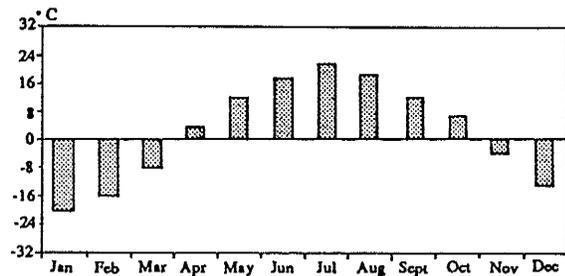
The soils at Lower Fort Garry seem best suited for grain or grass hay production. When newly broken, they are fairly fertile because of the relatively high organic matter content of the surface layer, but under arable culture they soon lose much of this organic matter and crop yields decrease. Under fallow-grain culture, additions of organic matter will be required to maintain fertility and soil tilth. This can probably be accomplished by growing grasses for hay (12).



Solar Azimuth for Winnipeg, Latitude 49° 54'

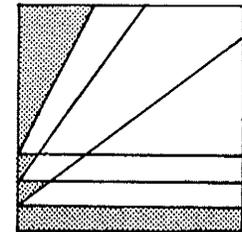


Average Total Precipitation and Hours of Sunshine for Selkirk: 1951-1980 (Source: Environment Canada)



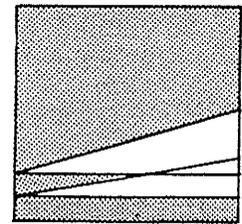
Average Temperature for Selkirk: 1951-1980 (Source: Environment Canada)

noon 64°
10-2 53°
8-4 36°



Solar Altitude- June 21

noon 19°
10-2 11°



Solar Altitude- December 21

Source: Petherbridge, P. 1964

Fig. 4. Site Inventory: Climatic Conditions.

6.1.5 Flooding:

At Lower Fort Garry the peak river water level for normal conditions (2 year average) is reported to be 216.12 m. When the major (50 year) and extreme (100 year) flooding of the Red River occurs, the water level rises to 219.78 m and 220.65 m respectively¹ (Plate 1).

Considering the development of the activities along the riverbank at Lower Fort Garry, although flooding of the site is unlikely, the peak flood level restricts any permanent development along the river's edge. Only informal walking paths with seasonal use (during the dry parts of the summer) would be practical, so that visitors could reach the river edge and have some seasonal variety of experience.

6.1.6 Vegetation:

Appendix 3 gives a partial listing of the existing plant species at the Lower Fort Garry site. It is evident from the existing historic records that the landscape on which the Fort is located was originally wooded. The present vegetation (both the period grounds and the contemporary grounds) is a combination of native and non-native species (Plate 2). The whole of the upper grounds south of the creek (the contemporary grounds) are covered with turf grass. The period grounds north of the creek and those within the Big House fence are covered with grass mixed with non-native herbaceous plants and weed species. Scattered throughout the site are clumps and hedges of maple, ash, willow, linden, and various native and non-native shrub species.

The riverbank is colonized by a thin and intermittent band of riverbottom species (Appendix 7) which extends onto the upper grounds, broken where trees have been destroyed by disease. Substantial growth of shrubs and herbs is also evident along the river's edge. In several instances non-native species and dead or diseased maple trees are found in this zone.

6.1.7 Visual Qualities:

Visual quality, a subjective component of the site inventory, was carried out in order to identify elements that may be used to:

- 1) create a stronger linkage between the Fort and the river, expressing an inherent characteristic of the period.
- 2) enhance the visual axis and provide for focal points

¹Manitoba Water Resource Branch, personal communications(28).

- 3) identify the existing vistas and views, landmarks within the site, important viewing points, and significant stands of vegetation; and
- 4) identify negative views and visually intrusive elements, both on and off the site.

Vistas and views were considered the focal points in the landscape, and include distant features or buildings and /or historically important features. They provide a wider scope of vision looking down the river, or across it, and focusing on a distant point.

Visually intrusive elements in general were considered those which uncomfortably dominate the landscape by their size, physical appearance, proximity to the river, and/or non-period features within the period grounds.

The results of the visual inventory of the site are summarized in Plate 3.

6.1.8 Site Access:

Highway 9 is the primary route providing vehicular access to the site. With the exception of maintenance and emergency vehicles, direct vehicular access to the Fort grounds is not provided, and it does not seem to be appropriate. The highway further provides a visual link with the site. A service road along the western boundary of the site (the remains of the original road linking Winnipeg to Selkirk) also connects the parking lot to the maintenance grounds. A section of this road, at least, could be included in the interpretive program as an original river road (Plate 4).

River access to the site was one of the significant historic events which occurred at the time when Lower Fort Garry functioned as a trans-shipment depot. This aspect of the site will be emphasized, interpreting the role of the Fort as a trans-shipment centre.

The river, because of its relatively slow currents, provides an easily navigable course even for small power crafts and canoes. During the summer, boat traffic may be characterized as low volume but continuous. However, there are no launching points for private boats at the Fort site. At present time the river access is secondary, and is limited to two tourist company operations during the active summer season. Access from boats docking at the site is by way of a relatively steep footpath leading to the upper bank level.

6.1.9 Circulation and Visitor Flow:

Pedestrian access to the site is accomplished by a network of informal paths, about 2 m wide, linking various historic features to the parking lot and Visitor Reception Centre.

Topographically, the site is relatively flat, making it easily accessible for strollers and wheelchairs. The exception to this is the path through the ravine leading from the Visitor Reception Centre. Access to the period grounds through this ravine is provided by a bridge and a combined ramp and steps. All paths are covered with crushed limestone.

The site is presently organized around two main focal points; the Visitor Reception Centre and the Fort. The visitor moves between these two either along the service road to the west gate or through the ravine past the industrial ruins, arriving at the Fort after visiting the Ross cottage, blacksmith's shop and the Fraser house. Visitor access to the north of the Fort is such that there is no well-defined access route to the archaeological sites (the ruins of the agricultural complex), located at a rough and treed area (Plate 4).

6.1.10 Historic Structures:

The major focus of Lower Fort Garry site development in the early period was the establishment of the Fort complex, beginning with the Big House and the saleshop in the 1830's. These structures were main building components of the Fort, and were significant in the Fort's role as a fur trade and trans-shipment depot. Later, additions to the Fort which presently exist include: the warehouse, the men's house, the doctor's office, the museum, the bastions, the fort walls, Fraser house, Ross cottage, and the blacksmith's shop (Plate 4). The function of the later group of structures was generally to support the main structures mentioned above. Appendix 4 provides a general overview of each of the structures existing at Lower Fort Garry.

6.2 SITE ANALYSIS IN RELATION TO THE 1850-1865 PERIOD

In this section the physical features of the site during the 1850-1865 period, the period selected as the primary period of interpretation, will be discussed. Mention should be made of the fact that since the main emphasis of the interpretive program at Lower Fort Garry is "the role of Lower Fort Garry as a trans-shipment depot and agriculture supply centre for the Rupert's land fur trade", the site inventory and analysis is directed toward this theme (Plate 6).

Historical evidence indicates that the agricultural and industrial operations established by the Company north and south of the Fort in the 1840's and 1860's were critical components to the Fort's role as a supply and trans-shipment point in the fur trade.

The exact locations and structural details of the agriculture / industry related components prior to 1857 are unclear (11). As an example, although there are references to a hay yard and gardens, the location of these features remains uncertain. Based on a number of sketches made in the late 1840's, however, it is assumed that a garden existed in the north west corner of the Fort (9, 11).

Based on the information available for the period after 1857, the hay fields were located south of the Fort. West of the Fort there was a fenced garden approximately one hectare in area. The area north of the Fort included the barns, stables, yards and pasture. The farm manager's house and, at a later date, a grain flailing barn was erected south of the Fort.

6.2.1 Site Features:

During the 1850-1865 period, the agricultural complex located north of the Fort consisted of five major buildings, some of which appear to have had supporting structures or sheds. These features were:

- The stableman's house with associated fenced yard. Due to a lack of adequate archaeological information, the location of this feature is based on speculation. It appears that the house may have had a shed attached on the east side, and it is likely that there would have been an out house in the yard
- The horse stable with enclosed farm yard
- An ox stable on the north side of the farm yard
- The south cow barn on the west side of the farm yard
- The north cow barn on the west side of the farm yard

- The lime house north of the stable complex. Additional lime kilns were also located along the riverbank north of the Fort.
- The root house along the riverbank east of the stable complex
- The ice house or houses near the north-east bastion.
- Paths linking built features and leading to the riverbank where stock was watered
- The yards separated with fence lines

Other agricultural-related features on the site included:

- A farm manager's cottage and associated yard south of the Fort. The area is now occupied by the Fraser House
- A main garden west of the Fort across King's Road. This lies outside the present park boundary
- Cultivated fields west of the King's Road. They lie outside the present park boundary
- A garden in the vicinity of the Miller's house south of the industrial complex
- A grain storage building inside the Fort wall

The industrial complex, built south of the Fort between 1845 and the late 1860's, included:

- A grain flailing barn, west of the Farm manager's cottage
- The storehouse
- A brewery / distillery and storehouse
- A grist mill / saw mill and lathe room
- A malt barn and lime kiln
- The Miller's house

The agricultural processing elements in the industrial complex included the grain flailing barn, grist mill, malting barn and distillery all of which were associated with the processing of malt. They can be considered part of the agricultural activities.

Although inadequate, the archaeological research carried out at the industrial complex sites reveals some details regarding these structures (22).

A plan showing the 1850-1865 period is included in Plate 6. The period-related features have been located using the historical and archaeological information provided by the Canadian Parks Service.

the Canadian Parks Service.

6.2.2 Period Plant Materials

Information regarding the period-related plant materials i.e., flower, vegetable, field crop and fruit tree species is provided in Appendix 5. For this purpose, different sources were examined, including early garden catalogues (29, 30). The plant list represents some of the available plants for cultivation in the Red River Settlement after 1850's.

6.3 ISSUES AND DEVELOPMENT OPPORTUNITIES:

6.3.1 Issues:

Based on the land use divisions indicated in Plate 5, and for the purpose of addressing the site specific issues and constraints, the Lower Fort Garry landscape is divided into five broad areas. These are the approach corridor, the contemporary grounds, the period grounds, the maintenance grounds and the riverbank. In each area, the associated landscape issues are discussed in brief, and a summary of major issues is presented (Plate 7). The issues discussed below were mainly identified by the Canadian Parks Service (7) and have been supplemented by further site investigations during the course of this study.

6.3.1.1 General:

Lower Fort Garry lacks a developed landscape which would have special appeal to tourists, and might encourage them to prolong their visit to the site:

A Recreation:

Passive recreational opportunities are lacking at Lower Fort Garry.

Recreation can be a major attraction to visitors. The development of a recreational program involves a number of site specific issues which relate to recreation, resource protection and conservation.

B Year-round Operation:

At present, Lower Fort Garry is open to the public from May to September. According to the survey conducted in 1989 (23), the Fort's annual attendance has declined by about 10% per year for the past few years. This drop is attributed to declining school group tours, lack of recreational possibilities, and perhaps other regional attractions such as the Selkirk Marine Museum. Providing year-round activities at Lower Fort Garry might offset this decline and attract visitors to the site throughout the year. Special issues and concerns

are a part of any year-round operation, which may include reduction of some services, safety concerns, maintenance, etc.

C Weed Growth:

Following a landscape restoration plan and maintenance guidelines established by the Canadian Parks Service (7), in 1986, the administration was advised to allow the Fort's historic grounds both north and south of the Fort to revert to a natural prairie appearance, leaving the grass at a 25-30 cm height. Apparently some of the original grass species were classified as weeds resulting in a conflict with surrounding agricultural land owners. In Appendix 3, a partial listing of the weed species at Lower Fort Garry is provided.

D Landscape Maintenance:

- Weak and/ or dead elm trees on the site should be removed and replaced.
- Non-native plants should be removed and replaced.
- Landscape maintenance problems (weeds) in the area between the Fort and the creek should be resolved.

E Off Site Visual Intrusions:

- The visual problems associated with the contemporary housing and removal of riverbottom vegetation must be addressed.

F Pathways:

- Paths need to be wheelchair accessible.
- Circulation: there is lack of sequential movement. Frequent use of a short cut between the blacksmith' shop and the Visitor Reception Centre indicates the need for redesign of non-historic pathways.

G Noise pollution due to proximity of the site to Highway 9 should be addressed.

6.3.1.2 Approach Corridor:

- A The entrance kiosk is inappropriately located.
- B This landscape does not reinforce the period landscape theme.
- C Parking lot: large in scale with no points of orientation for the visitors and unpleasantly exposed to the highway. The lot needs to be visually screened

from the highway.

- D No lighting in the parking lot: visitors find it difficult to locate their vehicle during the evening. This is also a security issue.

6.3.1.3 Contemporary Grounds:

- A A windbreak should be established to control the disturbing north-west winds at the main entrance.
- B The Visitor Reception Centre should be visually screened from the period grounds.
- C The ornamental gardens around the Visitor Reception Centre should be replaced with low maintenance garden using period-related plants.
- D A direct access should be provided connecting the parking lot and the picnic area.
- E The Visitor Reception Centre is not of sufficient area to accommodate a spacious restaurant. The restaurant should be separated from the Visitor Reception Centre.
- F Shelter should be provided outside the Visitor Reception Centre and at the picnic area, to protect visitors from inclement weather.
- G A play area should be provided for children.
- H Access should be provided to the river's edge.
- I The ramp connecting the Visitor Reception Centre and the bridge should be graded providing a level area at the bend.
- J The riser/tread ratio of the steps leading to the bridge should be corrected. The nose of these steps should be marked.

6.3.1.4 Period Grounds:

- A River Access: the current river access at Lower Fort Garry does not provide a safe access for disabled visitors. The two landing areas lack a proper landing stage. Tour boat companies operating on the Red River offered trips to Lower Fort Garry until 1992. Upon arrival, all visitors, including those with special needs, were required to use a gangplank for landing extended from the boat and supported on the shore.

The bank slope at both locations is approximately 30%, and both slopes are about 60 m in length, with two different slope levels (Plate 1). The first part of the slope from the riverbank is steep and then levels off to a plain, and then

tapers gradually to the top of the bank at a different degree of slope.

The existing pathway is subjected to heavy erosion after any substantial rainfall. In the past, both north and south boat landings were available to allow simultaneous docking, when required. Fixed docks were used, but they proved to be difficult for some visitors to handle, and were subject to damage during spring ice break up.

At the north landing, stairs are used at the river's edge and are continuously damaged by the boat operator. Use of steep access paths at both locations is also difficult for disabled visitors. If required, those using wheelchairs are helped by the staff. The access paths are covered with gravel and crushed limestone to assist visitors. However, this is visually inappropriate in the historic area.

The south landing is visually disturbing, and lacks a strong relationship to the Fort. The pathway leading to the site is steep and rough. No benches or handrail are provided along the pathway.

Any work to improve river access to the site will have serious environmental implications: the creek bed and riverbank area house some important archaeological resources(industrial complex foundations) which are particularly susceptible to erosion because of spring flooding and/or high water levels. Shoreline erosion and general degradation of riparian habitat, including vegetation and soil compaction, will threaten this natural area of the site. If excessive material is introduced into the river, water quality and riverbed habitat may be at risk.

- B The existing bridge is not related in character to the period landscape.
- C The creek bank has eroded at the point where it connects with the river, and in the vicinity of the Visitor Reception Centre. This is considered a threat to the archaeological resources along the creek.
- D Visual intrusions: Views of both the maintenance area and Visitor Reception Centre intrude into the period grounds. These features should be screened using buffer planting.
- E The turf grass within the Big House fence does not seem appropriate to a

period landscape. An appropriate and low maintenance grass should be planted.

- F Dead trees, and trees removed should be replaced.
- G Contemporary minor intrusions in the period landscape, such as fire hydrants (fire hydrants are covered with barrels to reduce the visual intrusion), catch basins, manholes and low flood lights need to be more effectively concealed.
- H Several drainage problems are evident within the Fort grounds and adjacent to the archaeological ruins north of the Fort. An overall strategy is required to deal with all of the drainage problem areas, while protecting the historic features.
- I The existing boardwalk to the museum building need improvements to allow mobility impaired visitors access to the back door.
- J No access is provided for mobility impaired visitors to the men's house. Handrails are needed on the existing steps.
- K The steps in front of the warehouse are steep, narrow and without handrails. The steps are not marked for visually impaired visitors.
- L The pathway leading to the York boat does not extend close enough to the display, and thus visitors in wheelchair cannot observe the inside of the boat.

6.3.1.5 Administration and Maintenance:

- A Site operations require more space for equipment and material.
- B Administrative staff should be relocated closer to the Visitor Reception Centre and the Fort.

6.3.1.6 Riverbank:

- A The bank is eroded at several points, and these require stabilization.
- B Poison ivy exists along the route at the river edge.

- C Drainage problems exist on steep pathways.
- D Non-native plants occur along the riverbank.
- E Dead or diseased Manitoba Maple and elm trees are in evidence along the riverbank.

6.3.2 Opportunities for Development:

6.3.2.1 Topography and Hydrology:

At Lower Fort Garry, the riverbank slopes represent a significant vertical drop. Since slopes greater than 10% require effort to climb and descend, providing physical access to the river edge will be limited to a few points, (Plate 7). Furthermore, any development along the steep slopes will have serious consequences, including destruction of natural vegetation along the river and contribute to bank erosion. Other areas of relief north and south of the creek are generally smooth transitional slopes with minor height differences from the surrounding landscape.

The areas of steep slope suggest overlooks. Only narrow pathways following the contours of the river can be developed along the riverbank. Gently sloped banks provide access to the river and possible landing site for boats.

There is only one opening up the riverfront south of the Fort. It provides an opportunity for large gatherings when the cruise boats arrive. This can take a form of an open park space adjacent to the river.

Considering the development of the activities along the riverbank at Lower Fort Garry, the peak flood level restricts any permanent development along the river's edge. Only informal walking paths with seasonal use are permissible, in bringing the visitors to the river edge and provide some seasonal variety of experience.

6.3.2.2 Soil:

The soils at the Lower Fort Garry site are considered fertile, especially the upper layer. This will allow for growth of a wide variety of plant species, including grain crops and hay production. However, due to the flat topography,

drainage may be a problem and ponding may occur in the spring or after heavy rains. For extensive cultivation of some crops, such as vegetables, installation of a surface drainage system may be required for proper operation.

6.3.2.3 Vegetation:

The existence of significant stands of healthy and visually attractive vegetation provides areas that should be retained for passive recreation and nature study. The retention of as much vegetation as possible is considered desirable, as it contributes to site variety, bank stability, and habitat preservation.

Along the riverbank, at lower elevations, are a number of locations where the river and associated river edge vegetation can be viewed and interpreted. Mention should be made of the Dutch Elm disease destroying native elm trees. This hampers the visual quality of the environment. To restore the native plant communities and to ensure a forested riverbank conditions, these trees should be removed even if "suspected", and replaced with alternative species such as Green Ash.

6.3.2.4 Views:

Within the site there are a number of locations which provide opportunities for views of the river. The site is located on high ground overlooking the Red River. Along the river, the close association of the site with the river provides panoramic and sequential views. However, the overgrown nature of vegetation in some areas restricts riverfront access and hampers its visual quality. This is especially evident when the river is viewed from the area along the east wall. As a defensible fort, the banks should have provided complete visual access for the gunmen behind the wall.

Although the historic features at Lower Fort Garry are located in close proximity to the riverfront, there is a lack of visual linkage between the river and the Fort. This should be considered as a critical component of the landscape development at the Fort site.

Adjacent to the Visitor Reception Centre, as well as in the area to the north of the ravine, a view to the creek is provided. This area represents a potential site experiencing its significance in relation to the industrial complex. With some vegetation management (removal of dead trees and weeds) this part of the site, which was a major concern when the industrial complex was originally

located, can become a part of future interpretation program. This can be further enhanced by providing a steady flow of water at the creek bottom, perhaps by creating a marsh or retention pond north of the parking lot.

A high point south-east of the Visitor Reception Centre is a potential viewing point. Its location relative to the Visitor Reception Centre makes it an excellent site for a socializing area.

6.3.2.5 Access:

Highway 9 provides the major access to the site. The highway further forms a transportation route from which the Lower Fort Garry site, and its resources, are partially seen. This access route provides a number of opportunities to directly view the site and its surrounding.

Regarding the river, with proper and more period related landing facilities, the existing landing sites to the south and north of the Fort can be enhanced to accommodate visitor access.

6.3.2.6 Agriculture:

Besides the agriculture related structures and other features outlined in the site analysis section, the area north of the Fort currently contains a number of historic ruins relating to the agricultural complex. These ruins can be included and interpreted within a well developed format. The significance of this area is defined in relation to Theme Number One. Although small in scale, the area north of the Fort and part of the adjacent historic farm lands seem appropriate for farm development. Since this area is linked to the maintenance area, there is the possibility of building a modern stable at this location to house the animals which are to be a part of the interpretive program.

6.3.2.7 Industry:

There are a number of archaeological ruins associated with the industrial complex north of the creek which can be enhanced and included in the interpretive program.

In summary, the results of site inventory and analysis discussed in this chapter indicates that, the existing landscape features at Lower Fort Garry provide great opportunities for interpreting the historic significance of the Fort and its role as a trans-

shipment depot. By enhancing the ruins of the agricultural and industrial complexes, these can be successfully included in the interpretive program. The contemporary landscape south of the creek, and the riverbank, further provides physical access to the river, and an opportunity for native vegetation interpretation. This is considered as a positive feature in enhancing the overall appeal of the site and its recreational opportunities.

**CHAPTER 7:
PLAN DEVELOPMENT**

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7.1 PLANNING / DESIGN CRITERIA

For the purpose of establishing a period landscape development plan for Lower Fort Garry, the existing resources at the Fort and their characteristics were identified. Criteria for planning and development were derived following a review of the development policies initiated by the Canadian Park Service (4), and from objectives developed for a period landscape at Lower Fort Garry (Appendix 6). These criteria were used to evaluate potential areas for development, and determine changes in the landscape to be considered in the planning process. They will affect the needs and subsequent use (or non-use) of landscape resources at the Fort, and will be used in analyzing suitable activities to be included in the plan.

The following criteria are judged to be the most relevant to the development of the Lower Fort Garry landscape :

7.1.1 General Development:

- Restoration of any period related features, such as buildings and related support structures, should be initiated only when adequate documentation is provided through archaeological investigations.
- Any non-period activity shall be developed in such a manner as to visually and physically protect the historic features at Lower Fort Garry.
- Sheltered picnic areas, washrooms, and outdoor play areas for children should be developed on the proposed contemporary grounds.
- To protect the historic features of the site, any changes to the period grounds should be discouraged, unless they are necessary to enhance the cultural significance of the landscape based on the 1850-1865 period plan.
- Necessary functional requirements, such as parking, circulation, drainage, and lighting should be implemented with a sensitivity to their impact on the overall period landscape. To ensure the protection of possible buried historic artifacts, surface drainage should be carried out in such a manner as to avoid subsurface disturbance.
- Any new development or redevelopment of indoor, as well as outdoor spaces

must incorporate barrier free design principles, to ensure access by people of all abilities.

7.1.2 Access:

- The site should be easily accessible both from the highway and the river.
- Different parts of the site should be easily accessible for pedestrians with limited abilities.
- One or more properly developed river access points should be provided. This recognizes the need for boat docking facilities at the river's edge.
- The approach corridor from the highway establishes the area as a unique space, both from a vehicular and pedestrian perspective. Thus this approach corridor should be developed to enhance the appearance of the area, and provide an appropriate introduction to the site.

7.1.3 Circulation:

- A path from the parking lot to the Visitor Reception Centre is seen as an introduction to the period landscape-a "foyer" to the site. Therefore, it should be appropriately designed to connect with the contemporary grounds south of the creek and the period grounds. This path should be accessible for both wheelchairs and strollers. Where appropriate, signs and/or interpretive panels should be provided along the path. Sitting areas, protected rest spots, trash receptacles, water fountains, and lighting should be included in the development of this path.
- The path system should be aligned to ensure that the various components of Lower Fort Garry are appropriately introduced to the visitor.
- Wherever the existing pedestrian paths are retained, they should be upgraded to ensure surface drainage, wheelchair access, and surfacing appropriate to a period site.

7.1.4 Natural Landscape:

- In developing the landscape, fragile sites should not be disturbed. Impact of construction on non-renewable resources should be considered i.e., soil erosion, vegetation and archaeological remains.
- All natural features, such as the river bottom vegetation, the creek and its connection with the river should be managed as conservation areas. This criterion suggests that the natural resources should be planned to accommodate only low intensity activities. These areas may thus be designated for passive uses such

as hiking and native vegetation interpretation.

7.1.5 User Needs:

- Outdoor comfort, the quality of open spaces, and ease of movement are primary concerns when considering the needs of visitors.
- Due to the wide range in ages of visitors to the site, and to enhance the quality of the site as a tourist destination, some recreational activities should be provided on the site. These facilities should be carefully studied and appropriately designed to accommodate planned group activities, relate to the period landscape, and be located so as to maintain the visual integrity of the period landscape.
- The site should be planned so that it is capable of accommodating those community events which do not require permanent facilities (Section 7.3.10).

7.1.6 Visual Quality:

- The visual qualities of the site are of critical importance to visitors. Thus on and off site views and vistas should be carefully examined, and where possible, areas with outstanding view potential, such as "high points", should be planned as "viewing points".
- Pleasant walking paths, spatial variations, appropriate diversity of vegetation, scenic views, and visual experiences on the site should be considered.
- Visual and acoustic privacy should be provided within the period grounds wherever possible. The visual impact of non-period landscape features, as well as visual intrusions to the period grounds, should be minimized to ensure that the integrity of the period landscape is protected.

7.1.7 Safety:

- Safety features affect the attractiveness of an area for visitors, and thus affect use. Safety features include the light fixtures for illumination and visual accessibility, properly maintained facilities, and the ease of identifying entrances and exits.
- Visitors should be protected from topographic hazards such as open pits, steep banks, land slippage, etc.
- When developing the areas adjacent to the river edge, the annual and the extreme flood levels of the river should be considered.

7.1.8 Maintenance:

- While the integrity of the period landscape elements are of primary importance, wherever possible, low maintenance, sustainable landscape should be employed at the site.

7.1.9 Agriculture (Gardens and Farms):

- Sites to be developed for period gardens and / or agricultural plots should generally be exposed to a minimum of 6-8 hours of solar radiation between 10 am and 5 pm.
- The garden should be oriented so that structures and/or other vegetation will not unduly block solar radiation.
- Soils should be well drained, fertile and have good organic matter.
- Gardens and agricultural sites should accommodate those elements required to describe the site's interpretive themes.
- The location, size, and shape of plots, and the selection of plant species should be based on historic records for Lower Fort Garry.

7.1.10 Recreation:**7.1.10.1 Child Play Area:**

- A The play area should be sheltered providing protection from the winds and shaded from the midday /afternoon sun in summer.
- B The size and capacity of the area should be flexible, in order to accommodate visitors during the peak visitor season.
- C The play area and facilities should be simple in structure and organization, safe, and low in maintenance. The form, material, and details should be compatible with the period landscape.
- D The play area should be easily accessible from the Visitor Reception Centre.
- E A sitting area should be provided for parents and/ or the park staff to facilitate informal supervision of the children.
- F For the purpose of education hands-on activities, such as archaeological site digging and demonstration farms, may be included.
- G Play areas should be acoustically controlled.
- H The play facilities should be planned to accommodate different age groups.
- I Public toilets and drinking fountains should be provided near the child play area.

7.1.10.2 Adult Recreation Area:

- A The area should provide for passive recreational activities, such as nature interpretation, boating, hiking, fishing, picnicking, etc.
- B The area should be associated with the natural attractions of the site, such as the riverbank and river-related processes and form.
- C The area should be easily accessible from the Visitor Reception Centre parking lot, as well as from the historic grounds.
- D The area should be visually and physically linked to the river.

7.2 DESIGN GUIDELINES

The suggestions outlined below provide direction to the general planning and design of the period landscape at Lower Fort Garry. They guide design forms and the overall development decisions, and are used to illustrate how the main design issues are to be addressed in each area. These guidelines are based on observations and analysis, historic records and visitor survey records:

7.2.1 General:

- The relationship between the Fort and the river should be strengthened both physically and visually. This can be achieved by creating an axis between the Fort and the river through use of elements such as a pedestrian walkway system and viewing points along the east wall of the Fort. A greater emphasis on the river and its role during the 1850's will enhance the symbolic image of the site.
- Recent intrusions within the period grounds should be removed, where possible. In the case of landscape restoration, the existing native and period-related woody vegetation should be retained, while removing all dead branches and weeds: 1) non-native plants should be replaced-over time-with native plants and 2) the non-period plants should be replaced with period plants as they age or become unsightly. This can be accomplished over a longer period of time (e.g., 20-40 years).
- Non-period activities and elements should be visually screened where possible. Recreate the effect of a natural woodland, using fast growing native plants, deep enough to achieve visual separation from those contemporary functions essential to the operation of the Fort.
- Dying and diseased elm trees should be replaced with more appropriate native or indigenous tree species along the creek and riverbank.
- When introducing new plantings, their suitability for wildlife attraction should be considered.
- Bank stability along the river's edge should be strengthened with new planting.
- Low maintenance gardens and landscapes should be established in the immediate vicinity of the Visitor Reception Centre and elsewhere.
- To insure positive site drainage, grades should be reestablished around the historic buildings and ruins.
- For the purpose of orientation and direction, it is important to provide direction to those visiting the site, without interference with the desired experience. Means

should be provided by which the user will recognize and appreciate the historic nature of the site, and know how to move appropriately through it (conventional graphic signs should be designed to keep with the character of the historic landscape).

- Reorientation and reinforcement of the site entry and the main gateway of the parking lot, the Visitor Reception Centre, and the period grounds is required. A sense of separation should be created between the entry to the site (Visitor Reception Centre) and the parking lot. For this purpose, and for the purpose of an appropriate introduction to the site, there should be a pleasant driveway and entrance to the site through a period type landscape.
- With the aim of appreciation from a distance, the introduction of a low maintenance landscape in the parking lot seems appropriate. For those areas viewed from the highway and for arriving vehicles, planting of native flowers and prairie grasses should be used to celebrate the site. Groups of forest trees can be used to create a sense of space while framing views, screening out undesirable views and creating smaller spaces within the existing large space. In large and sunny areas prairie grass will contribute to the rural scenery.
- In developing boat landing areas, visual and physical obstructions should be avoided. The 13 m plateau of the upper grounds, the basis for selecting the site for Lower Fort Garry, should be preserved and reinforced, because it contributes to the monumentality of the Fort on the site. The landing stage(s) should be period-related, compatible with the river edge(ease of landing) and fluctuating water levels. Sufficient space should be available for gatherings of large groups of visitors for informal introduction of the site from the water.
- Because of steepness of the bank at the north landing site, inclusion of stairs may be unavoidable in this area. This will provide landing difficulties for disabled visitors. An alternative solution might be to develop a new landing site north of the Fort at a more period related site.
- Direct access from the parking lot to the picnic area south of the creek should be provided.

7.2.2 Circulation:

- In developing a pedestrian circulation system, the walkway alignments should be in accordance with topographic constraints and distances from the access points to the main focal points (Visitor Reception Centre, the Fort, the agricultural complex).

- Pedestrian walkway should be developed on slopes less than 7-8 %, and designed to avoid ponding of water.
- Crushed limestone should be used as a paving material at the period grounds. The use of this paving materials at the contemporary grounds will help to link it to the period grounds. The edges of the paths will be defined by pressure-treated wood.
- A sequential system of paths should be designed so that people who may not be physically able to participate in all visitor programs (e.g. Visitor Reception Centre and/or agricultural complex), or those who may have limited time to visit the site, should still be able to find their way to the intended areas within the site without the assistance of a tour guide.
- Plan for a period transportation system for efficient visitor movement on the site.

7.2.3 Natural Landscape:

- The overall concept with respect to vegetation is to retain and to enhance the integrity of a treed riverbank condition. This implies that the riverbank should be a natural green belt. Where the native plants have been destroyed by disease and/or land sliding, or where it is considered necessary to reintroduce riverbottom vegetation along the bank, the natural distribution pattern of the trees should be reflected. For the purpose of stabilization, on steep slopes use of bio-engineering techniques will be employed where stands of naturally occurring vegetation are exposed to erosion.
- The creek should have an interpretation focus. To restore its original character weeds and debris should be cleared.
- Plants to be placed along the riverbank and creek should be native and include edible and aromatic species. The creation of an attractive environment for wildlife is essential.

7.2.4 Recreation:

- The area south of the creek should be reorganized to create a passive recreation area; one which can be used for a variety of activities and perceived to be in harmony with the rest of the site. Noise and undesirable views should be buffered. Shade should also be provided and shady areas created. Plan building structures well above the flood levels and on manageable slopes (20% max.). Provide links to the river's edge with safety as a main concern.
- It is most important to design a recreational area to fit the site. In particular,

different segments and facilities, including pathways, play areas, play structures, restaurant amphitheater, connections to the Visitor Reception Centre and the period grounds should be developed with the minimum feasible disturbance to topography and existing vegetation. This will safeguard the possible historic features (ruins) within the area.

- Different functions within the area should be allocated and designed so that the area will efficiently provide for the needs of present visitors, while accommodating possible expansion in the future.
- For the purpose of safety, and auditory and visual intrusions, a woodland should be established between the recreational area and the highway. An adequate planting buffer should be introduced between the child play area and the rest of these facilities.
- Buildings and facilities should be designed for use by the physically handicapped, to the extent to which it is practical and feasible.
- To allow year round use of the recreational facilities, shelters as well as means to control wind and snow drifting should be included.
- Outdoor gathering places should be incorporated for public education programs, event programming, and story telling (amphitheater).
- Establish "Deciduous Oak Forest" type vegetation south of the visitor reception centre grounds, incorporating the existing trees.
- Plan for a hiking trail along the riverbank. This can be connected with the proposed development area south of the creek, to the circulation system, and to the Fort.
- A restaurant serving food associated with the historic period seems appropriate. The restaurant should have visual access to the river. A location on the high area south-east of the creek seems appropriate for this purpose. However, the location of the restaurant must be planned both functionally and strategically, without impairing the integrity of the period grounds. Furthermore, it should be planned so that existing vegetation is undisturbed when creating visual and physical access from this area. To connect this area to the period grounds north of the creek (the industrial complex) a pedestrian bridge should be considered.

7.2.5 Visual Qualities:

- The view of the highway should be visually screened using plants.
- Views across the river (housing developments and cleared lands along the east

bank) should be controlled. This can be achieved partially by proper plantings along the west bank and, wherever possible, by municipal regulations controlling the visual impact of housing on the east bank.

- Some of the York boats should be relocated closer to the river edge, in order to create a stronger visual tie between the river and the Fort.
- Period-related light fixtures (lanterns) should be introduced, to provide illumination along the pathway for both safety and visual quality (opportunities for extended visitation hours and experiencing the site at night should also be considered).
- Outdoor spaces should be established to provide smaller and intimate sitting areas for contemplation (experiencing of the site, space, and time). Provide comfortable seats, spatial diversity, and shelter at these locations.
- Infrastructure (power and telephone lines, sewer etc.) and visually intrusive elements near the pedestrian path should be visually screened or relocated. The proposed infrastructural elements should not be located near the paths.

7.2.6 Agricultural Complex (Gardens & Farms):

- Since only a small segment of the garden / agriculture fields are within the site, only the remaining portions should be reconstructed at the original scale and these should be interpreted accordingly.
- Results of the living history farm feasibility study conducted LCRPAM (1989) indicated that "historical reconstruction of the agricultural complex north of the Fort is not feasible with the present state of knowledge under the Canadian Parks Service policies respecting authenticity and integrity". However, they recommended several alternative ways of interpreting the agricultural complex, including enhancement, animation, and generic reconstruction of the agriculture related features either north or south of the Fort. For the purposes of the present plan, an operating farm can be designed to include an enhancement and animation program which includes gardens, agricultural fields, fence construction, farm animals and appropriately marked archaeological ruins at this site. A long term plan should be considered for the agricultural complex north of the Fort only as more information and financial sources become available.
- A prairie grassland south of the Fort for hay production, as well as inside the Fort (outside the fence) should be reestablished.
- A low maintenance garden, including native plants, around the Visitor Reception Centre and proposed contemporary structures is recommended.

- An exhibition of medicinal and other herbs, especially useful for winter interpretation, can be part of the interpretive program related to agriculture at Lower Fort Garry.

7.2.7 Industrial Complex:

- At present a complete restoration of the industrial complex is not feasible due to: 1) the complexity of the historic features associated with this complex and the lack of accurate archaeological information and 2) the instability of the land adjacent to the creek. But, because of the role of this complex in the evolution of the Fort landscape, interpretation of the ruins may actually enhance the effect.

7.3 PROGRAMMATIC ELEMENTS

Based on the Canadian Parks Service objectives (Appendix 6) and the criteria and design guidelines outlined previously, a comprehensive development program which responds to the study intent is identified. This has been modified to reflect the site inventory/ analysis, issues and the historic records, as well as the living history farm feasibility study. In preparing the program outlined below, five "areas" (period grounds, contemporary grounds, maintenance grounds, riverbank strip, and approach corridor) are dealt with individually and in relation to each other, for the purpose of creating site unity.

Based on the distribution of the site features, the site has been considered as eight "nodes". These nodes represent landscape types with different characteristics and values (Figure 5). A listing of desired features associated with each node has been identified (Plate 8). The proposed activities and features, providing high suitability and compatibility with development criteria, are highlighted and prioritized, as follows:

7.3.1 Parking/ Entry:

- Entry point reorientation
- Parking lot development and redesign
- Entrance gate/ kiosk relocation

7.3.2 Visitor Reception Centre/Recreation:

The recreational node south and east of the Visitor Reception Centre presently provides unsheltered picnic tables. The area is lightly wooded with oak, elm, and aspen trees. To enhance the natural landscape features and historic resources at Lower Fort Garry, it is proposed to reintroduce pre-settlement vegetation south of the Visitor Reception Centre. This area must be attractive, inviting, comfortable, safe and provide spatial diversity.

Different facilities and activities must be appropriately identified and designed to relate both to the site and to the period. Deciduous forest and native grasses will be introduced, while activity areas will be carved from this "native vegetation"(refer to Appendices 7 and 9 for a list of native vegetation and methods of establishment of native grasses and forest at the site).

The recreational node should provide a variety of opportunities such that visitors can involve themselves in various recreational activities.

The demand for recreational opportunities by the visitors at the Fort necessitates

development of passive recreation at the site. It is proposed that the entire area to the south of the creek be developed as a passive recreational area, as well as functioning as a centre for educational programs. A restaurant complex is suggested as the area focus, serving as a support to the recreational activities. The siting of the restaurant and its architectural qualities must be such that it does not visually impair the period landscape in any way.

To encourage the use of the area, separate access from the Visitor Reception Centre entrance path and the river is proposed. Accessibility to the river's edge from the recreational area should also be enhanced. It is thus possible to encourage both local residents and visitors to use the recreational facilities year round.

The following program of activities is proposed for the visitor reception centre / recreational node:

- A native gardens around the Visitor Reception Centre
- A formal picnic area, with shelters and washroom facilities
- Direct access to the picnic area from the Visitor Reception Centre entrance path and the river, with clearly defined entrances
- Playgrounds and facilities for children of all age groups
- A year round restaurant with approximately 100 seats and outside screened seating
- Pavilions as amphitheater and festival grounds

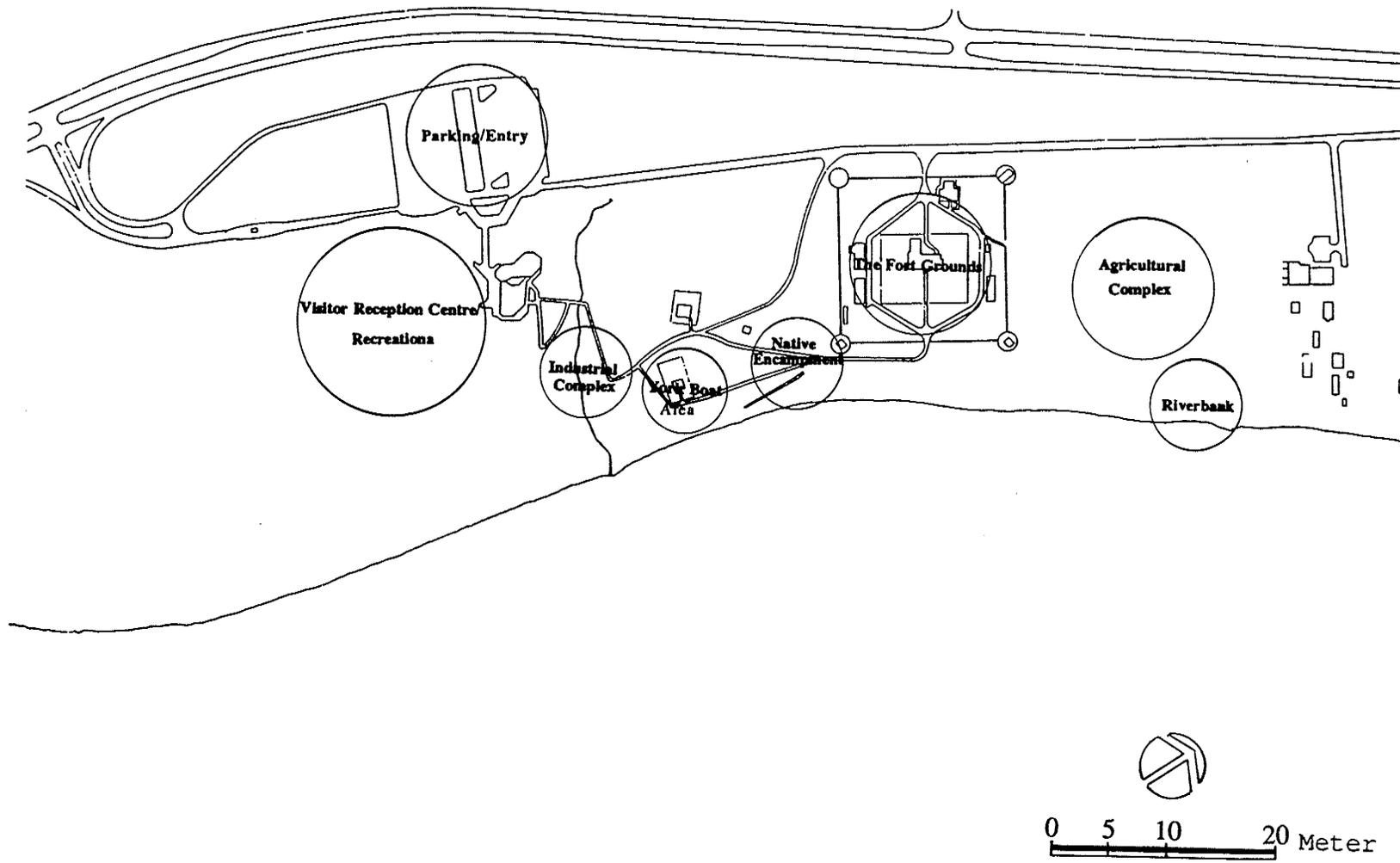


Fig. 5. Distribution of the "Nodes" Within the Site Indicating the Major Focus of Development.

7.3.3 Industrial Complex:

This node should be developed as one of the important features within the historic grounds. Its existing historic resources (ruins) should be organized in such a manner as to facilitate interpretation, thus recognizing the role of Lower Fort Garry as a trans-shipment depot and agriculture supply centre. The development of this node necessitates changes in the circulation system. This can be accomplished by reestablishment of the historic route south of the Fort and connecting the river boat landing site and the industrial node to the Fort, as described in the York boat node.

The features proposed for the development of this node are as follows:

- Grain flailing barn
- Root house
- Beer cellar
- Storage house
- Miller's house
- Malt and lime kilns
- Malt barn / grist mill / saw mill
- Brewery / distillery / store house

Due to the complexity of the node and lack of accurate archaeological data, reconstruction of the entire complex is impossible at present. It is proposed, however, that as an interim measure the existing ruins at this location be interpreted in their present forms.

7.3.4 York Boat Area:

The development of this area involves the expansion of the current interpretive role of the node to include Ross cottage, the boat building area/shed, and the boat yard. This will enhance and help to recognize the role Lower Fort Garry played in trans-shipment depot (Theme One) and will emphasize the importance of the river to the fur trade. It is proposed the original York boat inside the Fort be relocated to this node (near Ross cottage) and be interpreted along with the animated boat construction activities at this site. To emphasize the importance of the river in the fur trade, as well as its function as trans-shipment route, some of the reproduction York boats will be located close to the historic landing area, to interpret activities such as the loading and unloading of goods.

The York boat node will contain a sheltered open space for small group

gatherings where the visitor orientation takes place. This node will be linked to the adjacent industrial node and the proposed recreational amenities south of the creek, and to the period grounds further north and west of the node.

7.3.5 Native Encampment:

As an important aspect of the historic interpretation program, it is proposed that the current native encampment be relocated south of the Fort at the junction of two paths. This is a more historically accurate location for the compound, and more effectively portrays the role of natives in the fur trade.

7.3.6 The Fort Grounds Inside the Wall:

- Restore the period landscape elements based on 1850's plan.
- Enhance accessibility for handicapped.
- Remove and relocate the York boat and its shelter.
- Grade the grounds for proper surface drainage, especially around the historic buildings.
- Replace the existing flood lights with period-type fixtures, and introduce additional period lighting for a better illumination, orientation and visual quality.
- Provide drinking water fountains.
- Conceal the contemporary infrastructural elements.

7.3.7 Agriculture Complex:

The development of this node includes the exploration and enhancement of its inherent interpretive role, including activities such as crop production, haying, animal husbandry and an agriculture produce storage centre. The function of this node will be highlighted to create a link with the industrial and York boat nodes with connecting paths. The paths will include parts of the existing service road. The development of the agricultural complex will necessitate various seasonal activities at the site which will further enhance the proposed year-round program.

In summary the long term development program for the agricultural complex will aim to :

- Establish the agriculture farms
- Establish the vegetable gardens
- Establish the hay fields and pasture
- Establish the barn yard

- Reconstruct the stables
- Reconstruct the stableman's house

The short term development program for the agricultural complex will include both enhancement and animation of the agricultural activities through the gardens, agricultural fields, fences, farm animals, and archaeological ruins at this site. It is suggested to "contract out" part of this activity (farm animals) to the private sector. It is further proposed to use some of the farm animals in the development of a period transportation system for visitors.

7.3.8 Riverbank:

It is proposed that this area be incorporated within the recreational program, to provide recreational opportunities and natural vegetation interpretation. Some parts of the riverbank require reforestation in order to reestablish its original appearance as river bottom vegetation . Access to this area will be provided by a pedestrian walkway system. Low density activity is proposed for this area, in order to preserve the existing vegetation (i.e., a hiking trail with a width of 120 cm). This will enable the area to be utilized primarily by the visitors interested in nature interpretation. Interpretive signs, seating and access points to the river's edge are suggested.

To maximize public access from the river, docking facilities should be provided along the bank. It is desirable to provide separate docking for privately owned recreational boats and public cruise boats. The landing stage should be designed with minimum environmental degradation, and minimum alteration to the shoreline.

7.3.9 Administration and Maintenance Functions:

The site administration and operation node includes the administration building, the restoration project offices, the Volunteers Association trailer, the restoration workshop, the carpenter's shop, the maintenance compound and parking and the storage sheds:

- To support the year-round operational programs suggested above, and for the more efficient administration and operation of the site, the Visitor Reception Centre should be modified to house the site administration offices and related functions.
- The Volunteers Association Staff should be transferred to spaces within the proposed restaurant.

- A new barn should be built within the maintenance area, to shelter the farm animals to be used in the agricultural complex animation program. This can be considered an alternative to the “contracting out” of this activity.

7.3.10 General:

- The site furnishing (signs, seats, trash receptacles, lighting etc.) should be specified in form, material, and details to respect the period landscape.
- Native grass should be introduced to the contemporary and period grounds, covering the lands both north and south of the Fort, and the Fort itself.

Introduction of native grass is seen as an important aspects of landscape restoration at Lower Fort Garry. The native grass not only brings the period appearance back to the site, but also reduces the costs in maintenance such as irrigation, mowing, and fertilization. Native grass further requires lower initial installation costs and with a proper maintenance program, weed and disease control will be minimized. The native grass will also add richness to the site by attracting wildlife and related fauna.

It is suggested that appropriate grass species withstanding trampling such as Little Bluestem (*Schizachyrium scoparium*), June Grass (*Koeleria cristata*), Blue Grama (*Bouteloua gracilis*), Wild Strawberry (*Fragaria virginiana*), and Pussy-toes (*Antennaria* sp.), Sheep Fescue (*Festuca ovina*), Mat Muhly (*Muhlenbergia richardsonis*), and Three Flowered Avens (*Geum triflorum*), be included within the highly traversed areas, such as the play grounds, picnic sites, and the gathering place.

Considering the maintenance issues related to the grassed areas at Lower Fort Gary (outlined in Section 6.3.1.1) and the existence of some noxious weed species at the site, reestablishment of a native grass will require a well-studied and an appropriate plan to ensure a successful landscape restoration program. The native grass will be established by complete removal of the existing grass and other herbaceous species through cultivation and chemical weed control. Seeding and reestablishment of native grass then will take place over the clean and weed-free black soil. In this method, the best results in a short period of time will be obtained. Appendix 9 provides a summary of different alternatives regarding establishment and management of native grass at the Lower Fort Garry site.

- Trees and shrubs should be planted along the south edge of the creek. This will

visually screen both the Visitor Reception Centre and the contemporary grounds south of the creek, and will create a forested backdrop.

- Trees and shrubs should be planted along the western edge of the period grounds to screen the highway.
- Screen planting should be carried out along the northern edge of the agricultural complex to control the visual intrusion created by the maintenance compound.
- Year-round Operation:

For the year-round operation of Lower Fort Garry, it is proposed the Visitor Reception Centre remain functional and active throughout the year. Following is a program proposed for Lower Fort Garry through which a variety of activities and resources can become available to the visitors. It should be noted that the restaurant can play a significant role in attracting visitors and local residents to the site:

Special Events:

An annual program of innovative and special events should be introduced to broaden the public appeal of the site. These events should celebrate some aspects of the Fort's heritage. Thus it is important that they be based on the actual heritage of the site, and scheduled to attract an optimum audiences. Furthermore, the special events and the facilities which support them should be planned and designed in such a manner as to respect the integrity of the site. The following events can be introduced to the development program in an incremental manner, based on public demand:

A Spring Festival:

- Spring Opening Celebration: celebrating the spring fur trade and the spring-related agricultural activities in May.
- Canoe races and canoe loading / unloading demonstrations.
- York boat demonstration and rides.
- Historic spring games and sports.

B Summer Festivals:

- Celebration of the signing of Treaty Number One. The event will be scheduled for late July-early August and involve native encampment and participation native dance competitions, and a native arts and crafts show should be a part of this program.
- Celebration of the Canada Day.

C Fall Festivals:

- Rescheduling of the Red River Rendezvous for the purpose of celebrating the return of the fur traders to the Fort in September. This festival may include activities such as historic food and baking competitions, Red River jig and fiddle competitions, costume competitions related to “Buffalo Days”, and demonstration of hunting skills.
- Celebration of the Labor Day.
- Celebration of crop harvest. This event may include outdoor stage entertainment, free fresh produce and heritage games.

D Winter Festivals: Activities specific to winter can play a significant role in attracting visitors and local residents to the site. Winter festivals may include the following activities:

- Celebration of the Christmas night at the site.
- Winter games: sledding, horse sleighing, snowshoeing, tobogganing, ice skating, dog team races.
- Use of the river as an access route in winter can serve local residents from across the river who wish to visit the site and participate in various winter-related activities, and frequent the restaurant.

7.4 SUMMARY OF PLAN OPTIONS FOR DEVELOPMENT

7.4.1 Strategy:

To provide a unique "sense of place and time" at Lower Fort Garry, it is important to establish a strong relationship between the existing historic buildings and the landscape. This can only be achieved by the complete restoration of the landscape to its 1850-1865 appearance. Therefore, the developmental strategy proposed for the Lower Fort Garry landscape emphasizes the development of its historic potential. To ensure appropriate and sensitive development and to provide a framework for design that will guide the shape of development, the proposal focuses on the development of the areas or "nodes" (Figure 5). Each node will be developed according to the program outlined in Section 7.3. At each node, the type of development proposed is related to the resources of the area, and recommendations are based on the availability of historic records.

7.4.2 Plan Options:

This phase of the plan development includes the exploration and evolution of concept plans for the development of the Lower Fort Garry landscape.

The two conceptual plan options established for the site are the result of the background research, site analysis, and visitor survey records. They illustrate, in composite form, the planning / design guidelines and program requirements outlined in Section 7.2 and 7.3. The diagrammatic forms further indicate the direction of future development of the contemporary grounds, and the appearance of the period grounds during the 1850's.

As indicated in Plates 9 and 10, there is a potential for recreational development at the site, and this development is judged to be necessary to generally improve and enhance the site for various visitor groups.

Briefly, in Option A, the expression of the old "river lot" settlement system, as surveyed in 1875, is introduced to the area south of the creek. Further, the development of the period grounds is based on the 1850-1865 plan, as illustrated in Plate 6.

In Option B, the design language used to create spaces and to give form to the contemporary grounds is through reintroduction of pre-settlement vegetation (Deciduous Oak Forest-Appendix 7) south of the creek. The spaces required for different activities is carved from the vegetative cover, giving the landscape the appearance of a "English Romantic" landscape. The restoration of the landscape associated with the period grounds is identical to that of Option A.

Following a close examination of the proposed plan options, Option A has been

chosen for further development, based on its usefulness in contributing to the achievement of the overall goals for the development of the site, and its compliance with the Canadian Parks Service policies and objectives. Therefore, the following discussion focuses on the details of Option A.

7.4.3 The Conceptual Plan Description and Elements:

Within the development strategy discussed in Section 7.4.1, the individual nodes become interpretive units. Within each node, the associated artifacts and historic cultural events are explored through interpretive panels and/or animation, where applicable. The following descriptions depict the type of development that the individual nodes reflect within the development strategy. The recommendations are specific to each node, and are intended to suggest ways by which each node might best be developed in order to enhance the overall landscape at the Fort:

7.4.3.1 Parking / Entry:

Developments within the approach corridor include a slight modification of the existing parking lot (Plate 11). These modifications are:

1. Designation of a bus drop-off point and parking stalls.
2. Designation of a drop-off point for the disabled and disabled parking stalls.
3. Extension of the tree planting west from the recreation area, based on the river lot pattern. This is extended to create smaller groupings of parking spaces, and provide tree canopies for parked vehicles. It is also the intent to give visitors an appropriate introduction to the period landscape, as well as a sense of orientation.
4. To reference the existence, historically, of the marshland west of the Fort, part of the area north of the parking lot is proposed to be developed as a marshland. This will attract wildlife, as well as facilitate the retention of water run off west of the site. The proposed screen planting surrounding this area will provide a trap for winter snow within the marsh itself. It is proposed that by additional pumping of river water to the marsh and its gradual release to the creek, the functional aspect of the creek as outlined in Section 7.2.3.2 will be enhanced. Furthermore, this will facilitate the irrigation of the field crops proposed west of the site.
5. Mass planting of native plant species to visually screen the highway.
6. Establishment of a vegetable garden and agricultural plots with plants

appropriate to the period.

7. Modification of the service road for the purpose of interpreting the period-related Selkirk Road by down grading and narrowing the road.
8. Replacement of the existing parking lot asphalt surfacing with turfstone surfacing.

7.4.3.2 Visitor Reception Centre / Recreation:

The concept for the landscape south of the creek is generated by various ideas and events, including historic and period-related recreational activities and symbolism. The expression of these ideas is intended in this component of the proposal. It is important to note that the essence of the recreational area is: 1) to create an open space for informal recreational activities, 2) to accommodate festivals and special events, 3) to provide a setting which relates to and enhances the overall period landscape. This is achieved with the use of traditional forms, geometries, materials and methods of ordering.

The recreation area contains several sub-nodes, including important visitor facilities, a restaurant, a child play area, a formal picnic area and amphitheaters or gathering places. In addition, the site's river bottom forest provides an opportunity for hiking, native vegetation interpretation and wildlife observation (Figure 6).

The concept has evolved in several stages. Stage one was the determination of the most appropriate site, based on the criteria 7.1.1 and 7.1.10. In step two, it was decided that the organization of various plan elements proposed for the southern area of the site should be inspired by the quadrant composition of the Fort itself (Figure 6 and 7). To create a spatial effect and to give meaning to the built forms, the "river lot" pattern was reintroduced to the site at stage three. The fourth stage was the geometric organization of spaces, design elaboration, orientation, and ordering of the programmatic elements within the confines of the traditional river lot system. These are based on the "land use patterns" within the river lot system, which follow the order of spatial hierarchy and movement through spaces (Figure 6). Fence lines and pathways are aligned so that the river lot patterns will be reinforced and strengthened, while establishing strong connections with the different spaces. The river lot system provides an appropriate reference to the past, reflecting the general pattern of settlement at the time the Fort was established.

Architecturally, to create unity and relatedness, it is suggested that the design language of the site's historic features be adopted in the design of such facilities as the structures, the restaurant, the gathering places, and the formal picnic area.

Historically, a number of very important activities took place within the area south of the creek. One of these activities, a camp site for natives, is recognized and recreationally developed. An important aspect of the recreational activities proposed for the site is thus the idea of a "gathering place". This idea was introduced to provide a logical relationship between the period grounds and the contemporary area south of the Fort. The site for the gathering place is conceived as a setting for the celebration of activities related to the fur trade, special ceremonies and winter festivals, and activities. Since the gathering place will be the center of cultural activity, the expression of centrality is important in its location and its relationship to the Visitor Reception Centre, the restaurant, the picnic area, and the play area.

7.4.3.3 York Boat Area:

A post and wire fence is suggested to define the area within the node which includes Ross Cottage, a boat building shed and the boat yard. It is proposed the original York boat inside the Fort be relocated to this node, as indicated in Plate 6. The boat building shed facilitates the interpretive programs. Some of the reproduction boats will be displayed south-east of the fenced area, where visitor groups may assemble for informal orientation and introduction to the site by the Canadian Parks Service staff. As part of the agricultural activities at this site, the existing vegetable garden will remain active west of the cottage, and include the plant species from those listed in Appendix 5.

7.4.3.4 Native Encampment :

It is proposed to relocate the current native encampment to a more historically accurate location south of the Fort, at the junction of the two paths. The camp, accommodating both Metis and Cree, includes fire pits, drying racks, canoes, etc.

7.4.3.5 The Fort Grounds:

The proposal recommends a complete restoration of the Fort grounds, based on

the 1850-1865 plan (Plate 6) and the restoration plan provided in 1985 (7). However, a kitchen garden rather than a flower garden should be established south-west of the Big House, as documented by Thomas (6).

7.4.3.6 Agricultural Complex:

The purpose of this component of the proposal is to recapture and communicate to the visitor the essence of agricultural activities on this much-reduced site, while addressing contemporary issues. An historically accurate restoration of the agricultural complex is not possible, due to the lack of archaeological data and space requirements. For interpretive purposes, however, it is proposed to enhance the complex using appropriate frames-"Ghost Houses". With an accurate layout of framing of the structures and barns, the historic location and suggestion of the activities is depicted, and a good sense of both the spaces and volumes can be communicated. The concept of "Ghost House", as it is used in the interpretation of the Franklin House in Philadelphia, and the Scott House along the River Road at St. Andrews (Figure 8) is seen be appropriate for the Lower Fort Garry landscape. However, under the circumstances, the following options may be considered for the development of this complex:

1. Enhancement of the complex by delineating its area, using fencelines for the yards and posts and rope for the structures and interpretive panels.
2. Enhancement and animation of the complex. This will include options one and the "Ghost House" concept as outlined above, with the addition of farm animals.

7.4.3.7 Industrial Complex:

Treatment of the industrial complex is proposed to be similar in expression to that of the agricultural complex, including the interpretation of the complex at the present location.

7.4.3.8 Access and Circulation:

In contrast to the present situation, where the main access to the site is by car, and visitors are unable to appreciate the historically strong connection between the river and the Fort, this proposal provides better opportunities for both highway and river access. From the parking lot, the visitor walks through the wooded area south of the creek and enters the period grounds at the river's

edge, where the inherent and significant aspect of the river and its relationship to the Fort is experienced first.

A new bridge connects the contemporary grounds south of the creek and the area near the south boat landing. To maximize public access from the river, docking facilities are suggested. It is proposed that the north and south landing sites at the river's edge be restored to their period form and appearance according to the historic records. However, these landing sites may not be adequate to accommodate power boats or river tour boats. For this reason, and to protect the integrity of the period landscape, new landing facility is proposed south of the creek, in the vicinity of the proposed restaurant as indicated in Plate 11. This contemporary dock, immediately to the east of the restaurant, will serve as a counterpoint to the entry from the highway.

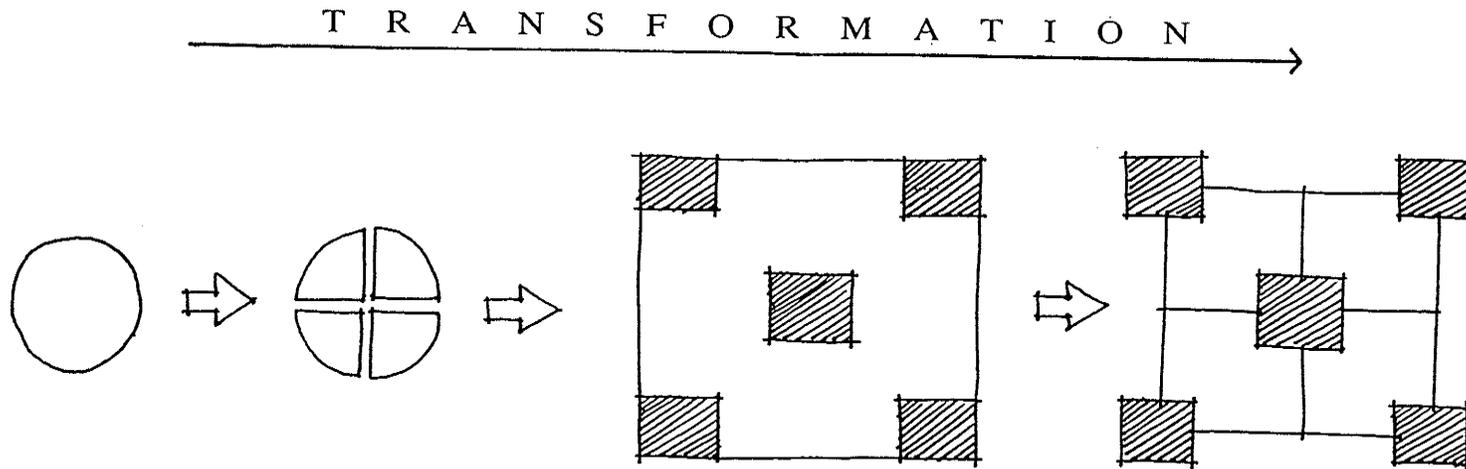


Fig. 6. Conceptual Development Process. A: Quadrant Composition of Landscape Elements Within the Recreational Area- Adopted From the Structural Composition Within the Fort.

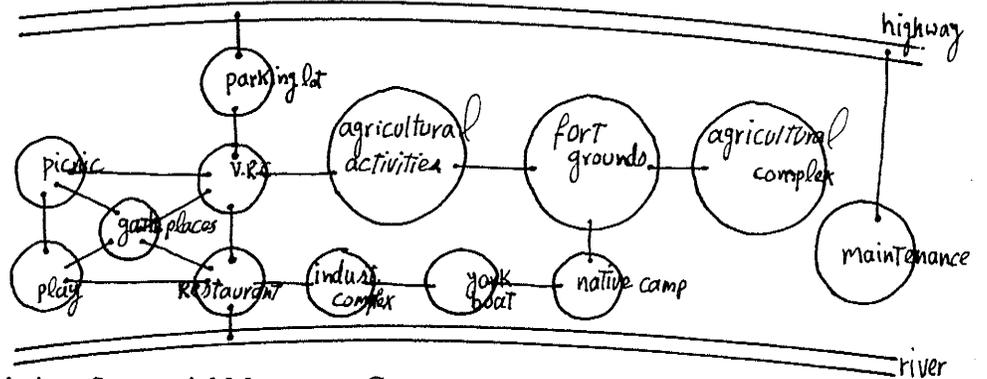
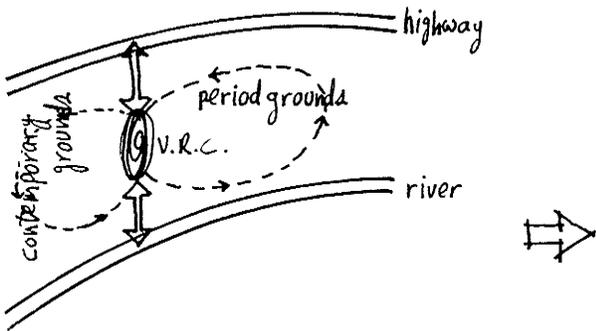
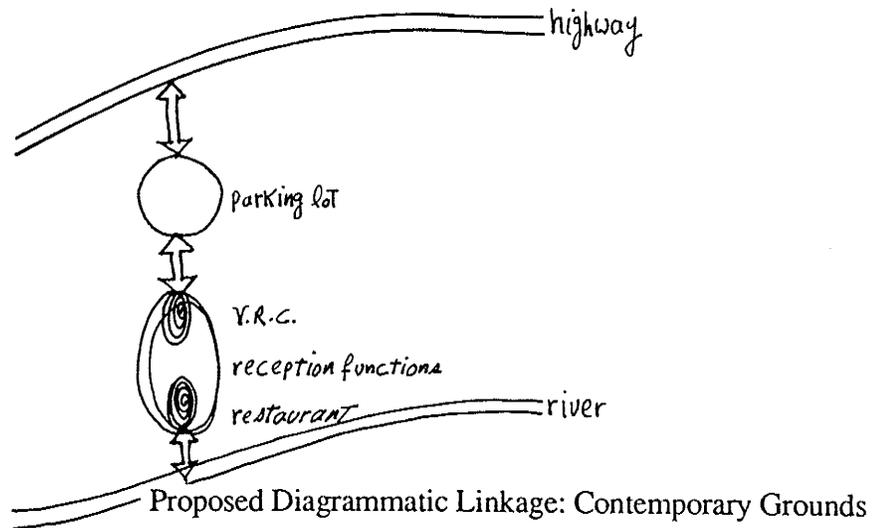
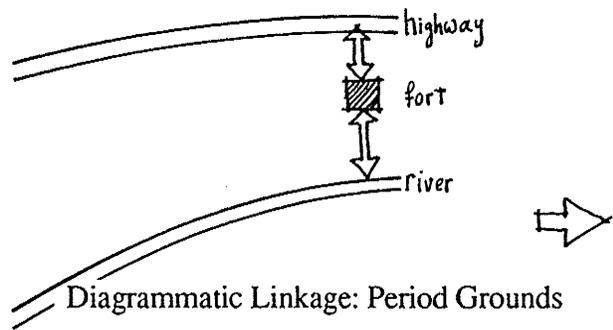
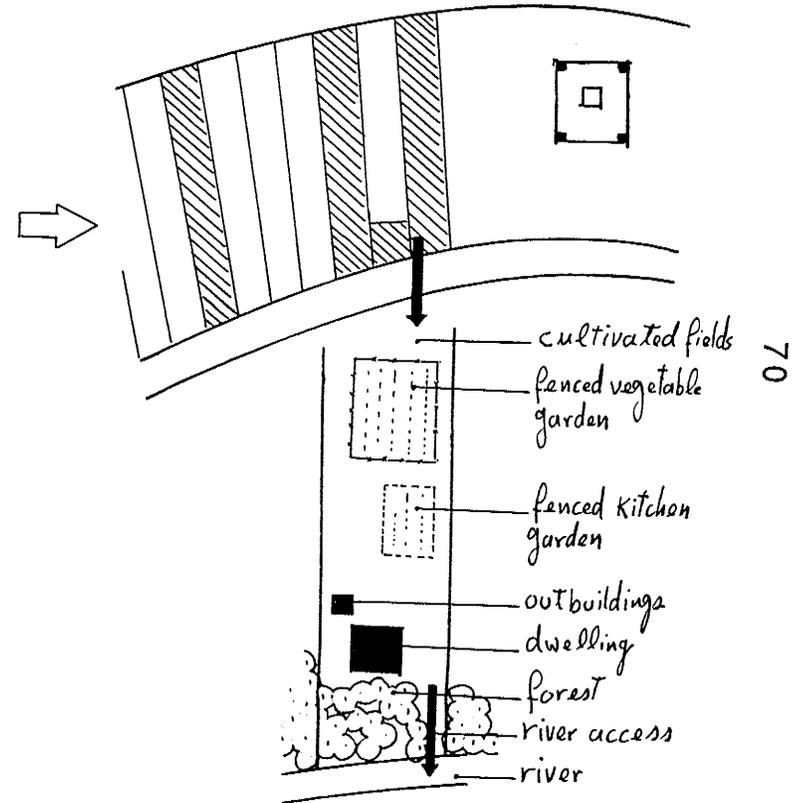
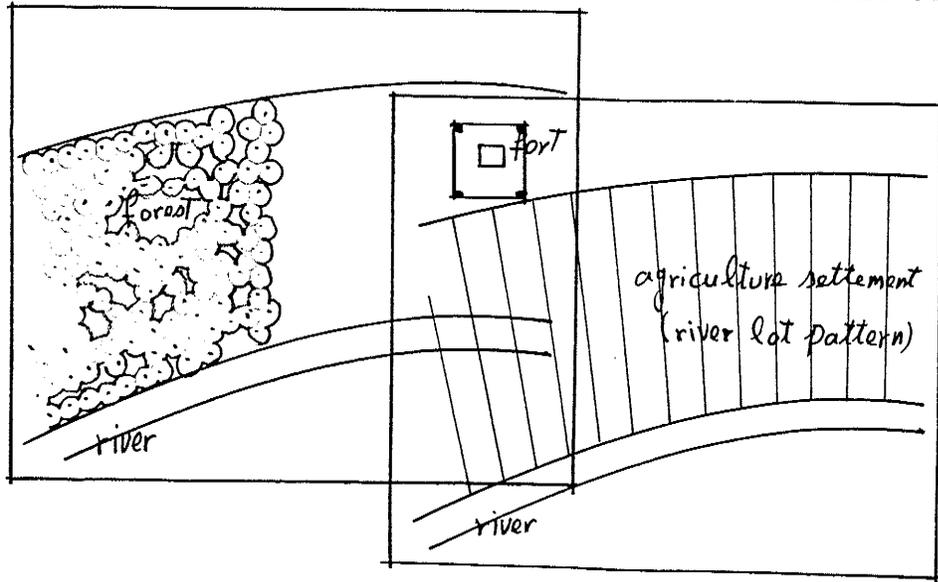


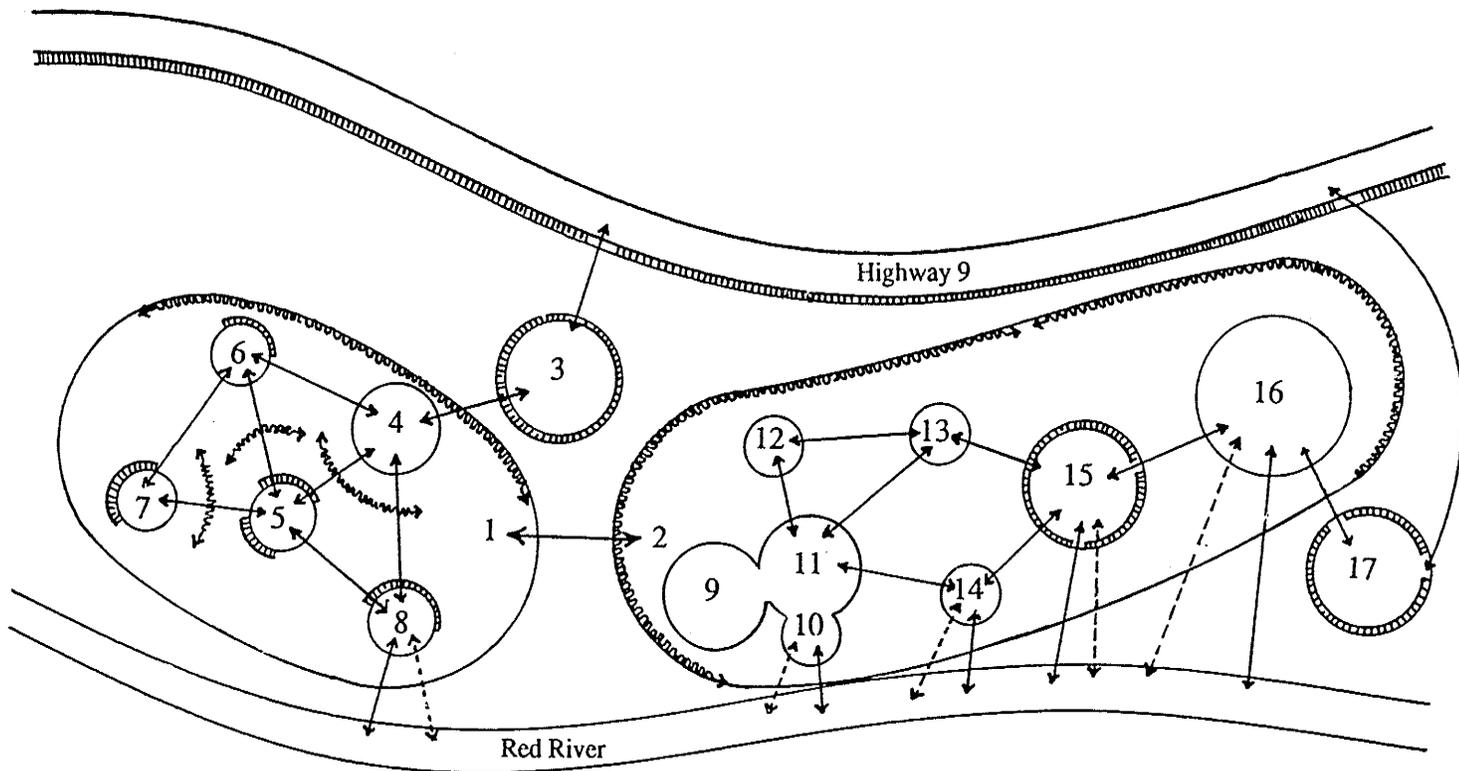
Fig. 6. B: Linkage and Circulation.

Man+ Nature $\xrightarrow[\text{Transformation}]{\text{Interaction}}$ Cultural Landscape



Typical River lot Organization

Fig. 6. C: Transformation into River Lot Settlement Pattern.



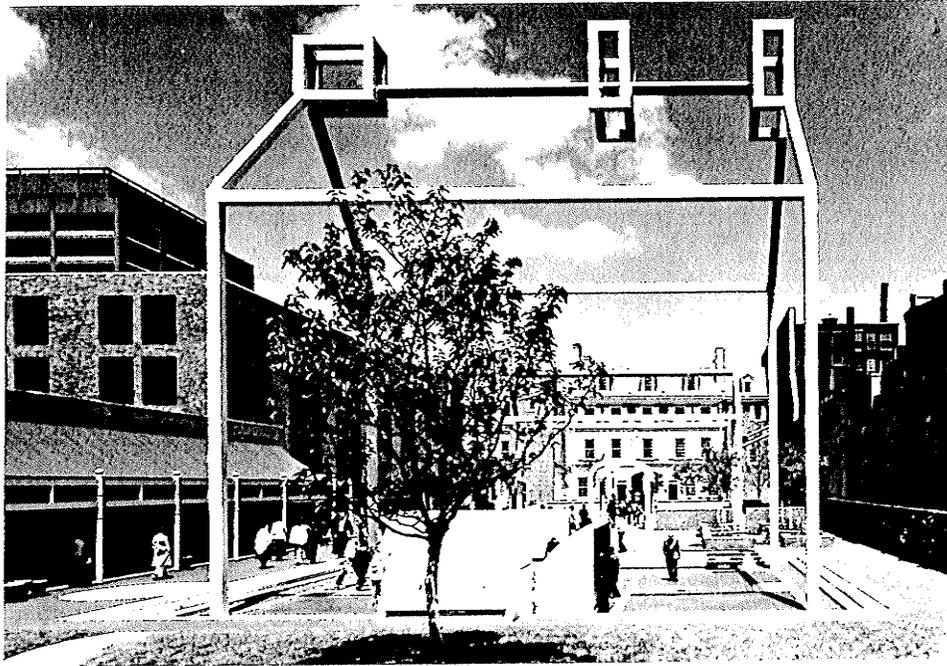
Program Elements

- | | | | |
|-------------------------|-----------------------|-----------------------------|--------------------------|
| 1- Contemporary Grounds | 6- Picnic Area | 11- Agricultural Activities | 16- Agricultural Complex |
| 2- Period Grounds | 7- Child Play Area | 12- Field Crop Plots | 17- Maintenance Grounds |
| 3- Parking Lot | 8- Restaurant | 13- Vegetable Gardens | |
| 4- VRC | 9- Industrial Complex | 14- Native Encampment | |
| 5- Gathering Places | 10- York Boat Yard | 15- Fort Grounds | |

Legend

- Audio/ Wind Screen
- Visual Screen
- Visual Access
- Physical Access

Fig. 7. Composite Functional Relationship Diagram.



A



B

Fig. 8. Franklin House in Philadelphia (A) and Scott House Near Winnipeg(B) Utilizing the "Ghost House" Concept.

Connecting the nodal developments is a network of pedestrian pathways, two meters in width, and generated by overlaying the period path system and the existing paths. The circulation system thus proposed provides the opportunity for visitor circulation from the point of entry to the period grounds and back to the Visitor Reception Centre in such a manner that visitors experience the historic site features in an appropriate order and sequence.

The present service road, to the west of the interpretive site, which relates to the period is considered part of the new circulation system, directing the visitors from the Fort to the parking lot. Therefore, it will be necessary to downgrade this road to its original form, which includes width reduction to about three meters, and adjustment to both shoulder treatment, and surfacing. It is proposed service and emergency vehicles access the contemporary grounds using Highway 9.

A period-related transportation system, using ox driven wagons, is suggested to transport the visitors between the parking lot and the period grounds.

7.4.3.9 Riverbank:

The 1850-1865 period plan necessitates restoration of the pathway south of the Fort, which connects the south boat landing and the Fort. To preserve the existing vegetation, a path with a width of 120 cm is suggested. It is suggested interpretive signs and access points to the river's edge be installed along this path. Further, it is proposed riverbottom vegetation be reintroduced for the length of the riverbank.

7.4.3.10 Visitor Flow: A Tour of the Lower Fort Garry Site

From the highway, the tall grass prairie planted in the highway right-of-way, and major plantings of deciduous forest trees as an extension of the river lot patterns are distinctive, and should capture the attention of motorists. The sign placed in a space carved from the forest, before the intersection of the highway and the access road to the site, invites passers-by to visit the site (Plate 11).

Upon arrival at the parking lot, a sense of relief and change from the contemporary landscape is experienced. The depth of the parking lot, and its enclosure by indigenous tree species and their canopies shield the parking lot from the highway. From here, the entrance kiosk is visible to the visitors, and directs them toward the site through a narrow and

shaded path. The path environment provides a sense of intimacy, and enclosure. The visitor is directed through the forest of deciduous trees, passes the historic lime kiln, and enters the period grounds at the intersection of the creek and the river. The sudden exposure to the panoramic view of the river, and the monumentality of the Fort provides the visitor with a unique experience.

At the point of entry to the period grounds, the first event to be interpreted is the York boat node. The visitor is drawn down the bridge through the pass to this component of the site. Once down the bridge a scene unfolds before the visitor; one which could have been viewed on this very spot more than 150 years ago.

Prior to beginning their tour, visitors coming from the parking lot or from the boat dock at the river's edge are taken to the assembly area inside the fence at the York boat node for a brief interpretive program. At this area, a viewing point invites them to pause for a moment and observe the view down the river. Here, the York boat construction operation is animated and a period York boat is revealed in detail. The proximity of the York boat area to the adjacent industrial complex enables visitors to observe the remains of this complex from the assembly area south-east of the fenced area.

From the York boat area, a continuation of events on the period grounds will attract the visitors. Thus, the site as the medium, the buildings as the framework, and the pedestrian circulation system as the catalyst reveals the story of Lower Fort Garry, and its role as a "trans-shipment depot and agriculture supply centre for the Rupert's land fur trade".

The tour continues with visitors walking toward the Fort, the main focal point at the site, via the historic pathway along the river. Here, the walk down to the river's edge becomes symbolic of going back to the beginning. The riverbank, also provides interpretation of the existing native vegetation.

Visitors with limited abilities may choose to walk toward the Fort via an alternative historic pathway. Here, at the junction of the two paths, the native encampment is interpreted. From this point, the ox-driven wagons take visitors to the Fort and return them to either the parking lot and the Visitor Reception Centre. Several stops are provided along this route, so that the visitors have an opportunity to get off and visit different interpretive programs, including the agricultural complex, the Fort grounds and the vegetable gardens. It is proposed three wagons provide this service for the visitors.

Standing at the south-east corner of the York boat area, and in front of the east gate to the Fort, visitors can enjoy spectacular views down to the river. The scene unfolding down the river is panoramic, defined by forest along the edges. If no power boats are in sight, and if the housing to the east of the river is visually screened from view, and with a few

York boats anchored at the south landing site one can believe it is the 1850's.

After touring the Fort and the agricultural complex, visitors exit the Fort at west gate and walk through the existing contemporary pathway toward the blacksmith's shop and farm manager's cottage where the tour ends. The interpretive activities south of the Fort include the Fraser house and his family life, the blacksmith's shop and his role in life at the Fort, and the haying operations. At this point, visitors may wish to return to the Visitor Reception Centre and the parking lot via the former west bridge, or they may choose to return to the contemporary grounds via the east bridge for further enjoyment of the recreational facilities available there.

Within this recreational area, the forest opens out into a large clearing of native grass, with three pavilions at the centre.

A small restaurant and outdoor dining terrace associated with the restaurant offer foods appropriate to the period of interpretation. It is from the outdoor terrace north east of the restaurant that the river can be viewed. Visual access to the gathering place (pavilions) is provided from inside the restaurant.

Associated with the restaurant, and the picnic and play areas are small herb / vegetable gardens, with post and rail fencing. The garden adjacent to the play area functions as a demonstration farm for the children, who can participate in the cultivation, planting, and harvesting of the plants. A trail connects both the play area and the restaurant with the river's edge.

**CHAPTER 8:
SUMMARY**

CHAPTER 8: SUMMARY

Lower Fort Garry is the only stone fort of the early fur-trader period to be found intact anywhere in North America. It represents one of the largest concentrations of fur trade structures remaining in Canada. These structures are unique both architecturally and in construction techniques, and are restored and open to the public.

Lower Fort Garry as a cultural landscape has a special place in the development of Western Canada. It is a part of our heritage and a link to our past. The Fort site tells us a story of its makers, of the time when it was established, of the lifestyle of the people connected with it, and their attitudes and values. Canada is fortunate indeed to have Lower Fort Garry as a part of its heritage resources. As both a national treasure and a favorite heritage park, and as part of our national system of parks, it should be presenting its entirety, as an example or a physical expression of the fur trade era in western Canada.

Clearly, both historic structures and the landscape contribute to our appreciation of cultural history. The existing landscape at Lower Fort Garry, however, does not adequately support the historic structures / events nor does it provide an appropriate setting for an interpretation program. This may be explained in part by the fact that the practice of historic landscape/ garden preservation in North America is a relatively new discipline, and only recently has the preservation of historically important landscapes and gardens received appropriate attention.

This study has attempted to provide a vision for a landscape which will strengthen the relationship between the historic structures and their immediate context, and support the other aspects of a comprehensive interpretation program at Lower Fort Garry. For this purpose, the existing landscape resources at Lower Fort Garry have been identified. Criteria for planning and development have been established and used to evaluate potential areas for development. Based on the site observations and analysis, and historic records, guidelines have been developed to give direction to the general overall planning and design of both period and contemporary landscapes. The followings are some general conclusions relating to the proposal :

1. The proposal accommodates the needs of contemporary users without diminishing the intended experience associated with the historic landscape. It further presents a sympathetic approach to the development of the recreational area with respect to historical aspect of the Lower Fort Garry landscape.

2. The visitor is introduced to the life at Lower Fort Garry in an historically accurate manner, by being introduced sequentially to the river, to the boat construction activities as important parts of the Fort's role in the fur trade and as a trans-shipment depot.
3. Intrinsic to this plan is the opportunity provided for the visitors to access the Fort from the historic route developed along the lower bank.
4. Historic landscapes must, by necessity function within contemporary environments, and as such can never be completely accurate. To address this aspect of the landscape at Lower Fort Garry, the proposal explores the site's potential for recreational development as an essential aspect of the program, and it proposes developing the area south of the creek for contemporary uses. The recreational facilities proposed within these contemporary grounds establishes continuity with the period grounds and symbolizes the man/nature interaction. Furthermore, opportunities for environmental education are provided by extending the circulation system to include the riverbottom plant communities.
5. The proposal sets forth a minimum level of intervention for the period grounds, thus maintaining the integrity of that landscape according to generally accepted national and international guidelines and standards for the treatment of the historic landscapes.

In conclusion, the proposal recommended will, hopefully, contribute to the understanding of heritage values associated with Lower Fort Garry. It is further hoped that the proposal will recapture and relate to the visitor the essence of the fur trade era and related agricultural activities. Finally, it will have served its purpose if it is of value to the Canadian Parks Service in addressing and interpreting Lower Fort Garry as a heritage landscape.

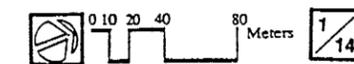
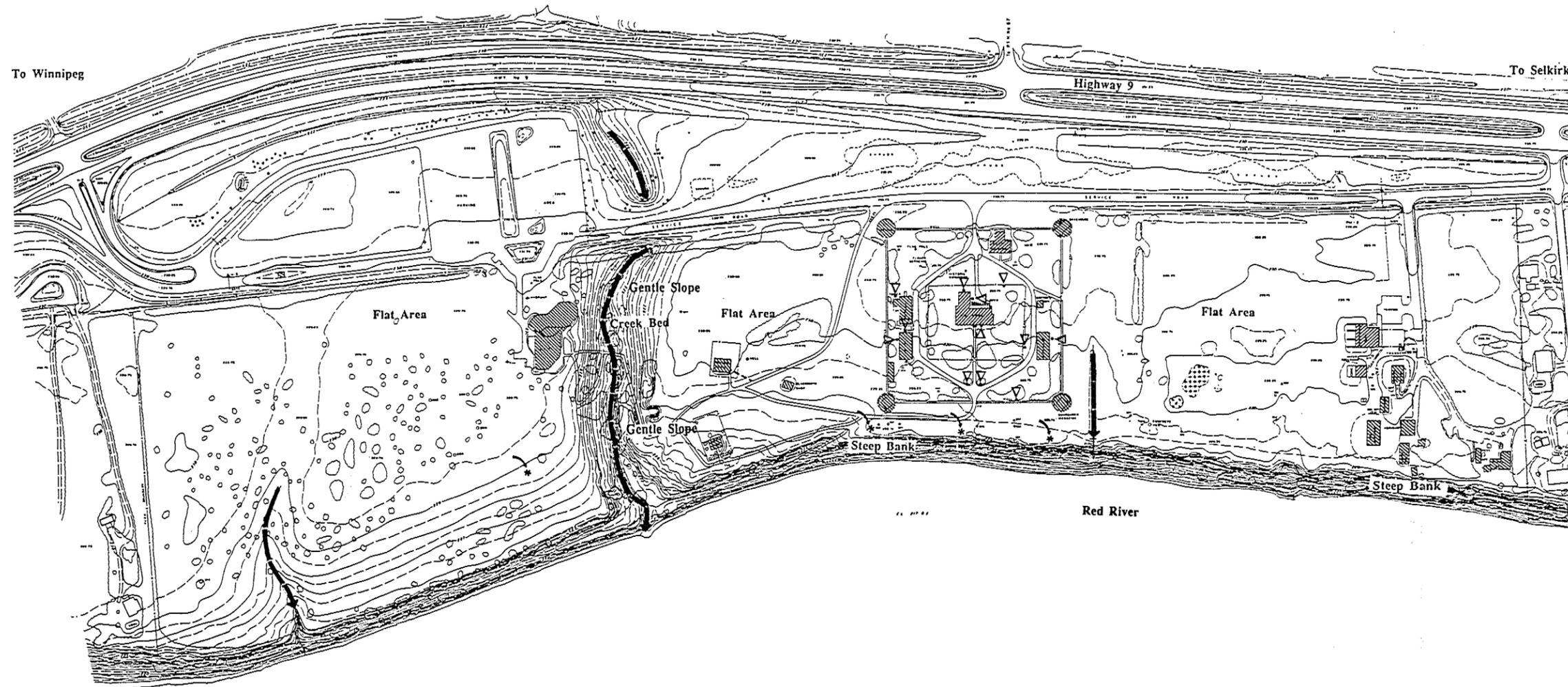
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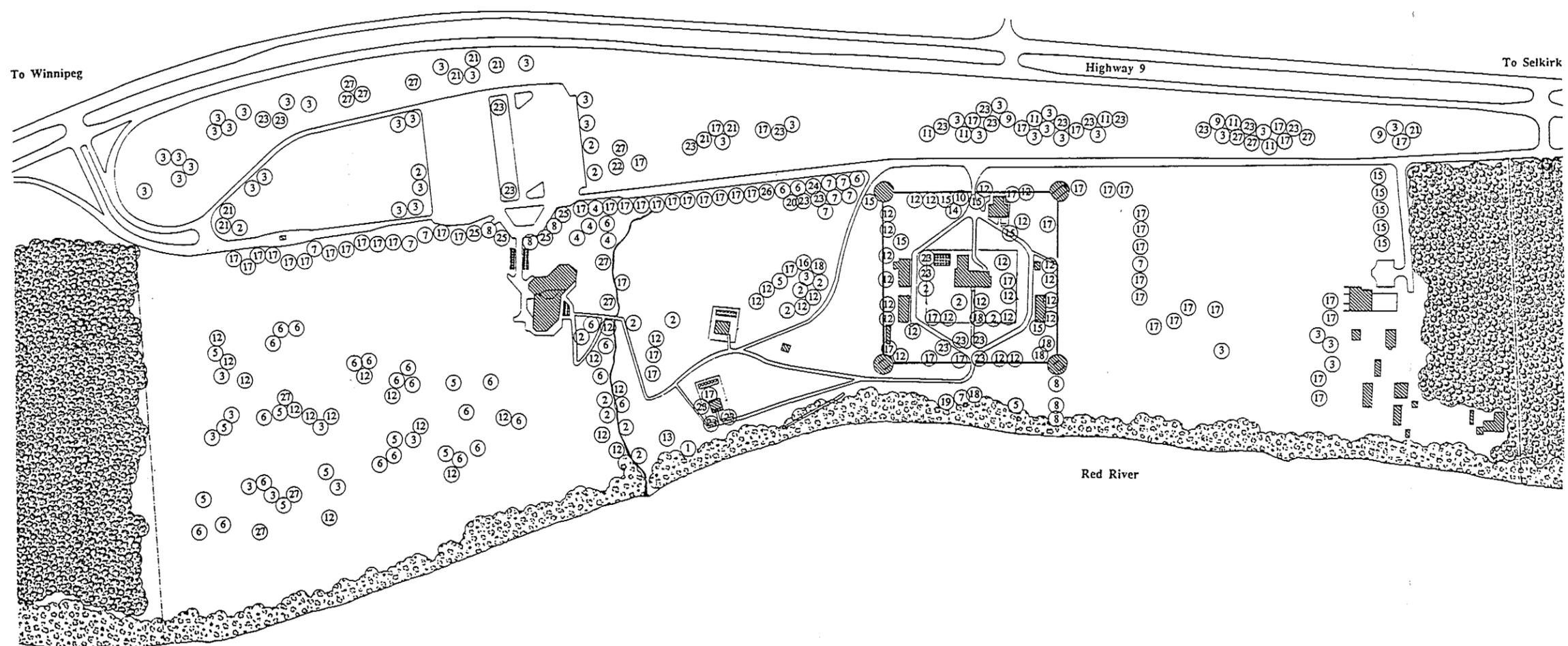
-  Existing Buildings
-  Existing Trees & Shrubs
-  Earth Mounds
-  High Point(13 m to the water Level)
-  Low Spot(Water Ponding)
-  Well Defined Positive Drainage(Swale)

Source: Canadian Parks Service

Average Biannual Flood Level: 216 m
 50 Year Flood Level: 219 m
 100 Year Flood Level: 220 m

Source: Manitoba Water Resource Branch

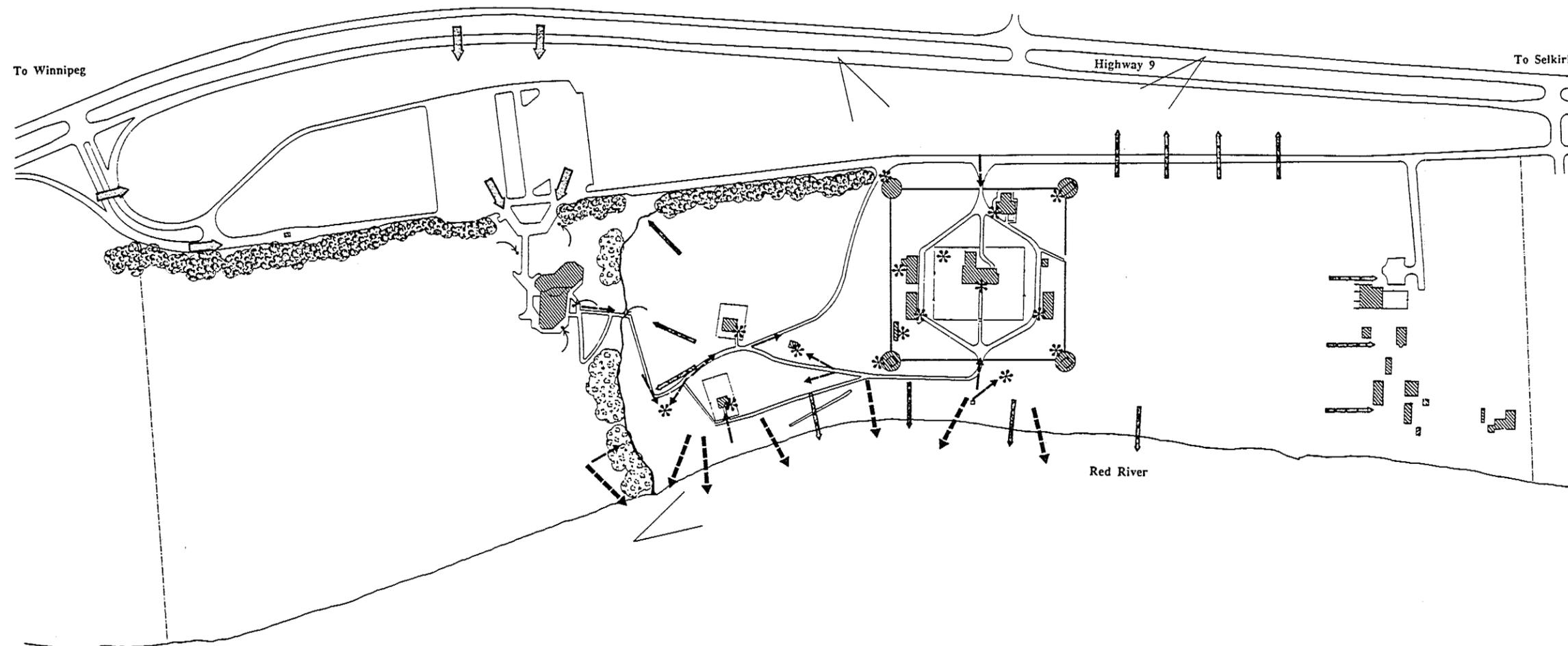




- LEGEND**
- ① Alder:
Alnus sp.
 - ② Ash:
Fraxinus nigra
F. pennsylvanica
 - ③ Aspen
Populus tremuloides
 - ④ Basswood
Tilia americana
 - ⑤ Birch
Betula papyrifera
B. populifolia
 - ⑥ Bur Oak
Quercus macrocarpa
 - ⑦ Choke Cherry
Prunus virginiana
 - ⑧ Cotonéaster
Cotonéaster lucidus
 - ⑨ Cottonwood
Populus deltoides
 - ⑩ Crab Apple
Malus sp.
 - ⑪ Dogwood
Cornus stolonifera
C. alba
 - ⑫ Elm
Ulmus americana
 - ⑬ Hawthorn
Crataegus sp.
 - ⑭ Honeysuckle
Lonicera tatarica
 - ⑮ Lilac
Syringa amurensis
S. hybrida
S. vulgaris
 - ⑯ Linden Tree
Tilia cordata
 - ⑰ Maple
Acer negundo
A. ginnala
 - ⑱ Mountain Ash
Sorbus americana
 - ⑲ Pea Shrub
Caragana arborescens
 - ⑳ Pea Tree
C. pygmaea
 - ㉑ Poplar
Populus balsamifera
P. hybrida
 - ㉒ Potentilla
Potentilla fruticosa
 - ㉓ Spruce
Picea glauca
P. pungens
 - ㉔ Snowberry
Symphoricarpus albus
 - ㉕ Wild Plum
Prunus americana
 - ㉖ Wild Rose
Rosa sp.
 - ㉗ Willow
Salix amygdaloides
S. lucida
S. interior
 - ⊗ Ornamental Flower Beds
 - ⊗ Vegetable Gardens
 - ⊗ Deciduous Forest
 - ⊗ Riverbottom Vegetation
 - ⊗ Existing Buildings

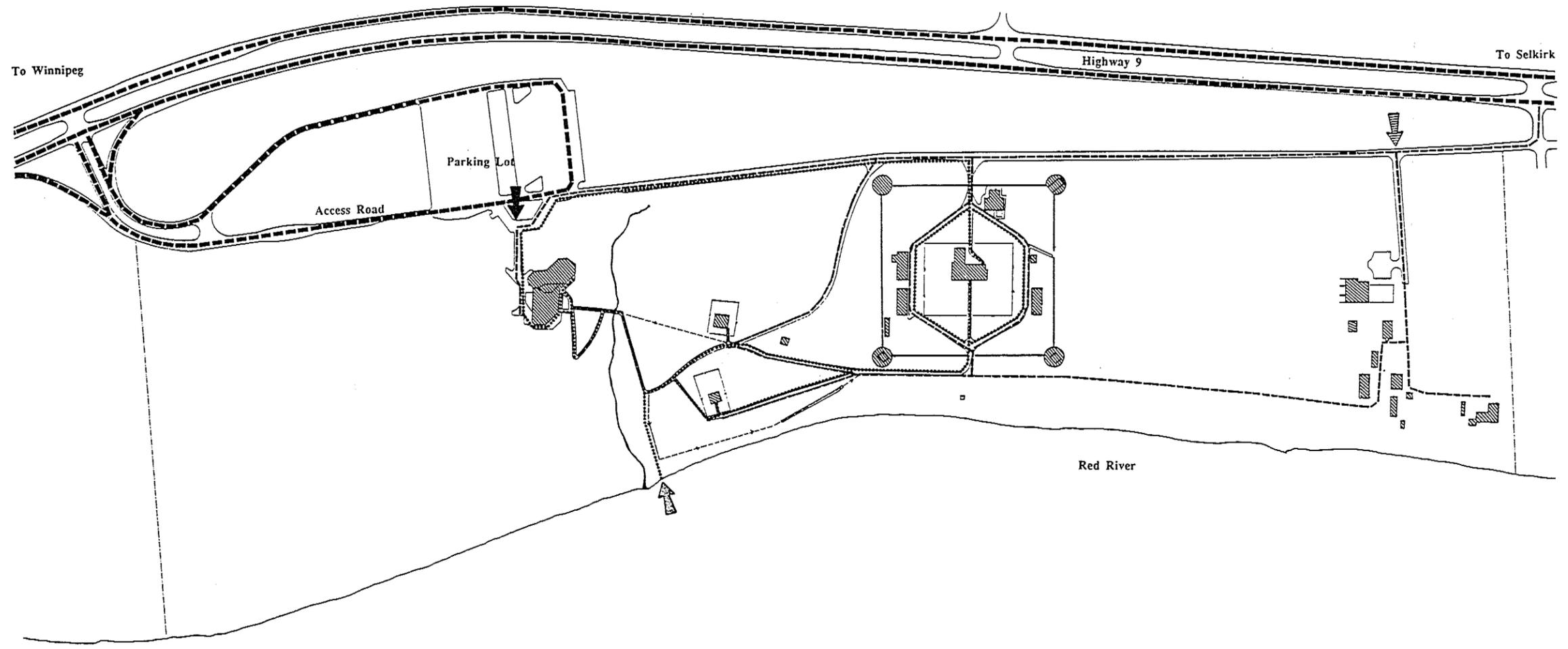
LEGEND

- Positive Views
- ⇨ Negative Views
- ⇨ Off-Site Views and Vistas
- ∠ Positive Approach Views
- * Visually Important Features
- ↪ Visually Inappropriate Elements
- ⇨ Visual Intrusions into the Period Grounds
- ⊙ Visually Effective Buffer Planting
- ⊙ Partially Effective Buffer Planting



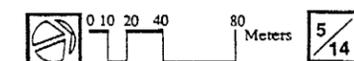
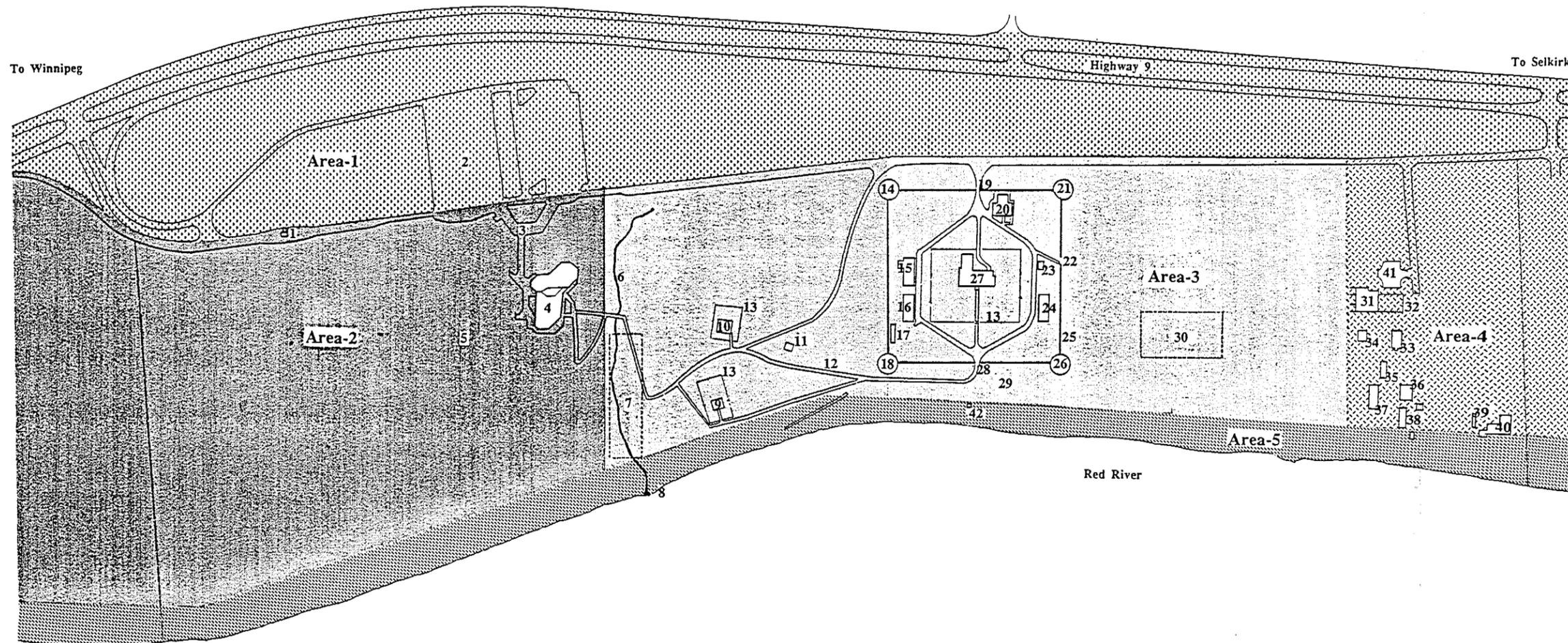
LEGEND

- Access:**
- ➔ Primary Access
 - River Access
 - Maintenance Access
- Circulation:**
- Vehicular Circulation: Public
 - - - Vehicular Circulation: Service & Emergency
 - ⋯ Pedestrian Circulation: Primary
 - Pedestrian Circulation: Occasional



LEGEND

- Area-1: Approach Corridor
 1-Entrance Kiosk
 2-Parking Lot
- Area-2: Contemporary Grounds
 3-Entrance
 4-Visitor Reception Centre
 5-Picnic Facilities
- Area-3: Period Grounds
 6-Creek
 7-Archaeological Ruins: Industrial Complex
 8-Boat Landing Site
 9-Ross Cottage
 10-Fraser House
 11-Blacksmith's Shop
 12-Foot Paths
 13-Fence
 14-South-West Bastion
 15-Museum
 16-Saleshop/Fur Loft
 17-Period York Boat
 18-Washrooms
 19-West Gate
 20-Men's House
 21-Bake House
 22-North Gate
 23-Doctor's Office
 24-Warehouse
 25-Stone Wall
 26-Powder Magazine
 27-Big House
 28-East Gate
 29-Native Encampment
 30-Archaeological Ruins: Agricultural Complex
- Area-4: Maintenance Grounds
 31-Maintenance Building
 32-Fence
 33-Sewage Treatment Plant
 34-Water Reservoir
 35-Storage
 36-Workshops
 37-Restoration Workshop
 38-Lumber Shed
 39-Restoration Office
 40-Park Maintenance Office
 41-Parking Lot
- Area-5: Riverbank
 42-Pump House



LEGEND

South of the Creek:

- 1-Property Line
- 2-Miller's House
- 3-Picket Fence
- 4-Lime Kiln

North of the Creek:

- 5-Creek
- 6-Root House
- 7-Grain Flailing Barn
- 8-Retaining Wall
- 9-Beer Cellar
- 10-Store House
- 11-Malt Kiln
- 12-Malt Barn/Crist Mill/ Saw Mill/Lathe
- 13-Distillery/Brewery/Store House
- 14-York Boat landing Area
- 15-Selkirk Road
- 16-Hay Fields
- 17-Rail Fence
- 18-Original Farm Manager's House
- 19-Fraser House
- 20-Gate
- 21-York Boat Yard
- 22-Boat Sheds
- 23-Boat Building Area/Shed
- 24-Engineer's Cottage(Ross Cottage)
- 25-Post & Wire Fence
- 26-Shrubs
- 27-Circulation System
- 28-Blacksmith's Shop
- 29-Lumber/Barrel Piles

The Fort Grounds:

- 30-South-West Bastion(Storage)
- 31-Former Bake Oven(Removed)
- 32-Thin Aspen Tree Cover
- 33-Stone Wall
- 34-Former Meat House(Removed)
- 35-Latrine
- 36-Saleshop/Fur Loft
- 37-Ice House
- 38-Kitchen Garden
- 39-Sun Dial
- 40-Spruce Tree
- 41-Flower Beds
- 42-Hanging Plants
- 43-Crushed Limestone Surfacing
- 44-West Gate
- 45-Men's House
- 46-Wood Pile
- 47-Uncut Logs
- 48-Big House
- 49-Apple Trees
- 50-Elm Trees
- 51-Board & Picket Fence
- 52-Bake House
- 53-Carpenter's Shop/Store
- 54-Warehouse
- 55-Powder Magazine
- 56-East Gate

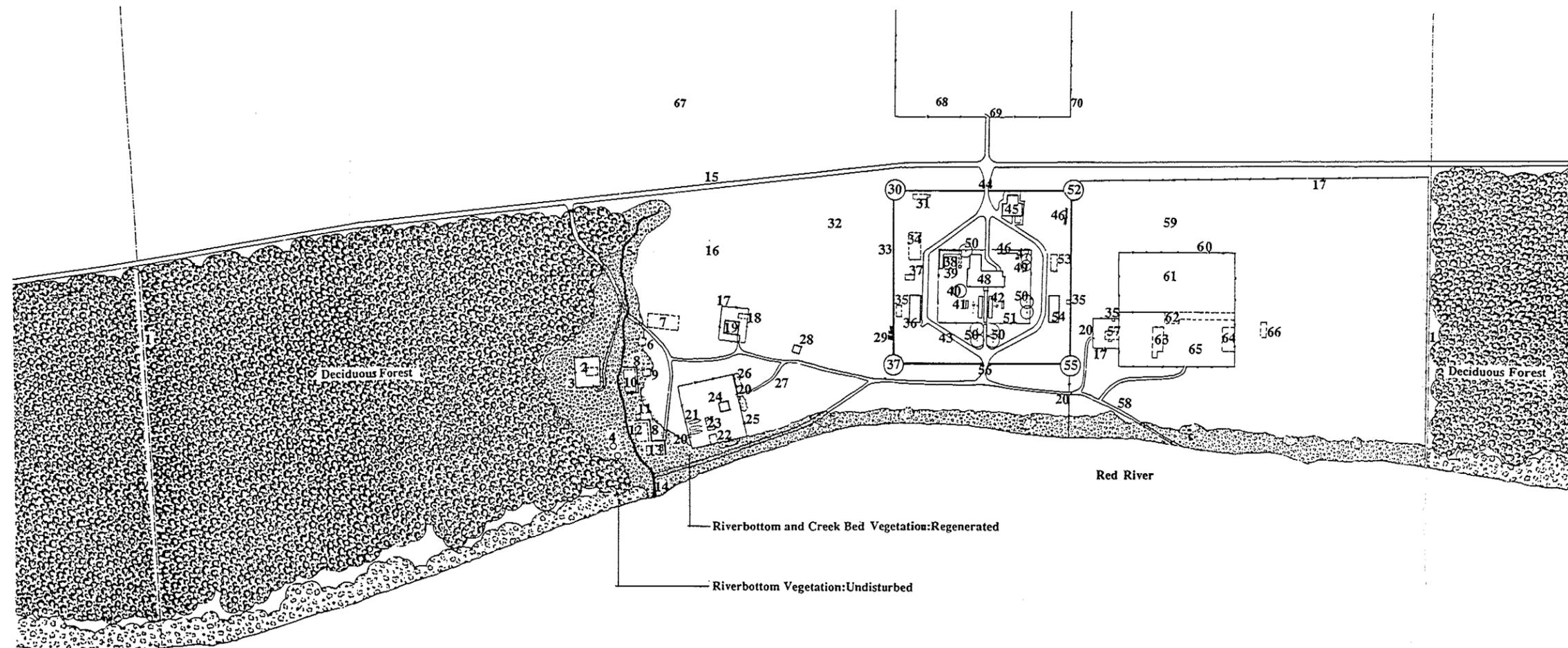
North of the Fort:

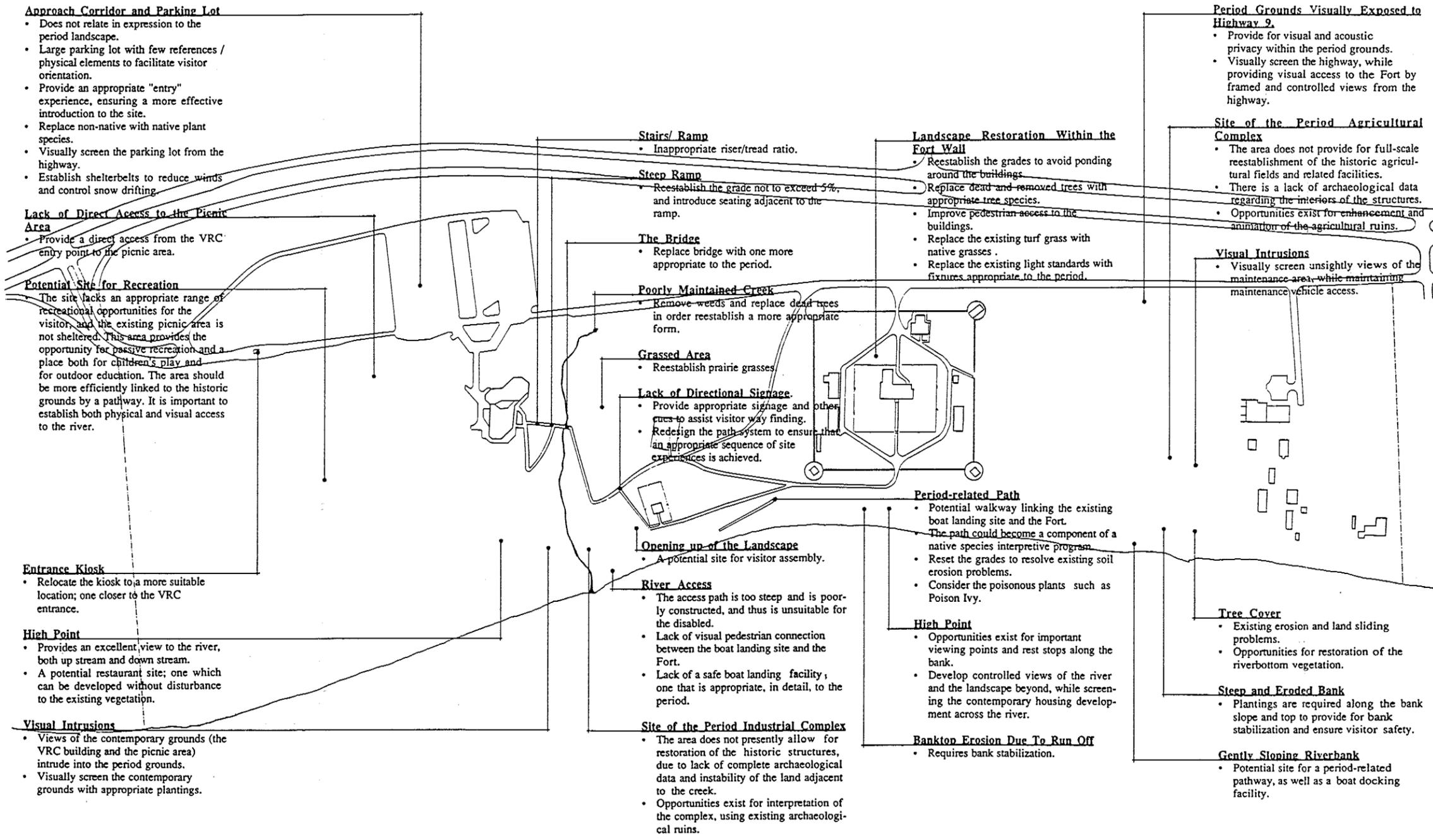
- 57-Stable Man's House: Speculation
- 58-Pathway Leading Down to the River For Watering Cattle
- 59-Pasture
- 60-Paling Fence
- 61-Hay Yard
- 62-Cow Stable
- 63-Horse Stable
- 64-Ox Stable
- 65-Barn Yard
- 66-Lime House

West of the Fort:

- 67-Agricultural Fields
- 68-Vegetable Garden
- 69-Gate
- 70-Rail Fence

Source: Thomas, G. 1979



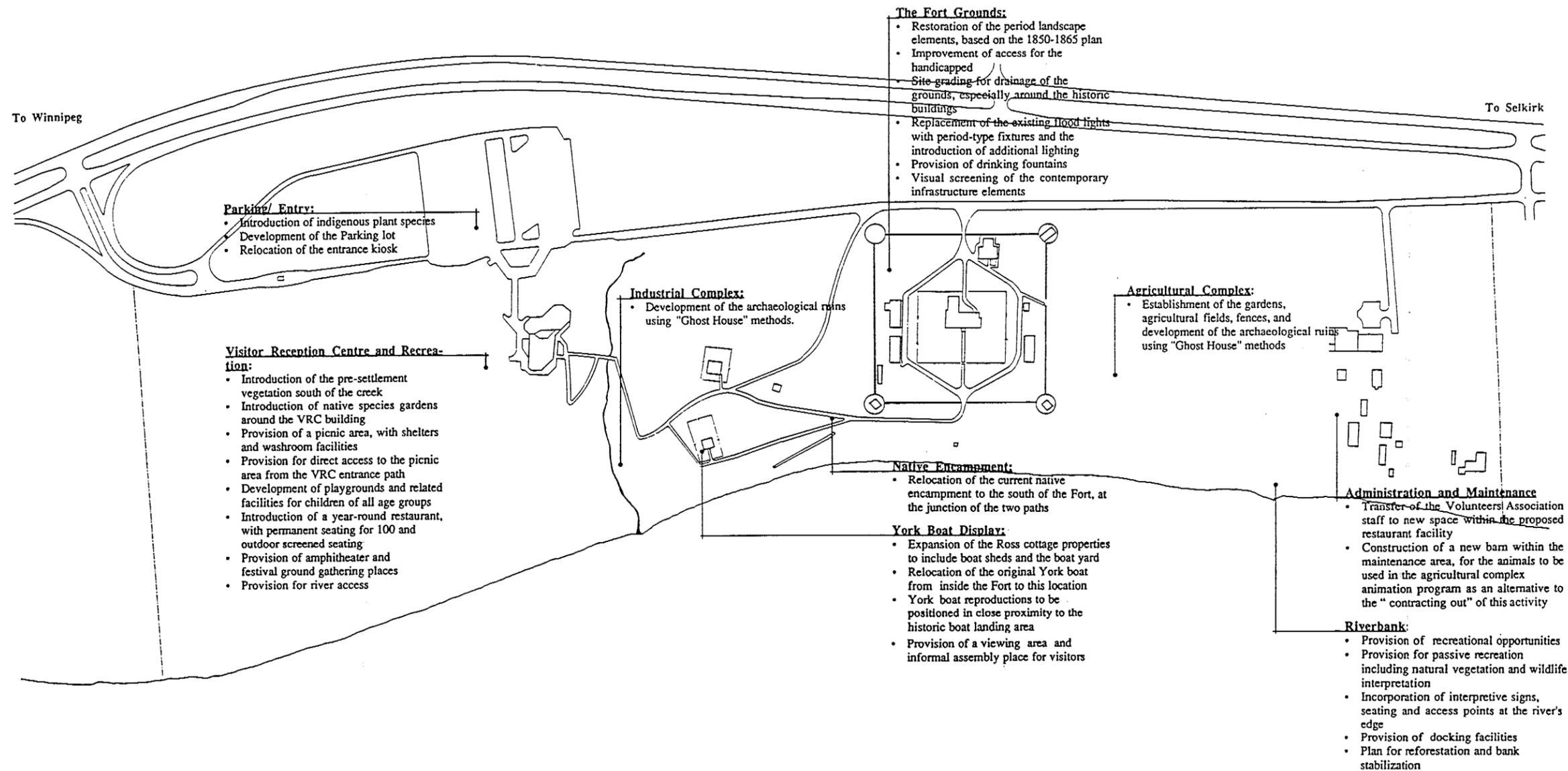


GENERAL:

- Lower Fort Garry lacks a developed landscape which has attractions to visitors; encouraging them to prolong their site visits.
- Due to the steepness of the riverbank, physical access to the river's edge presently has limitations for visitors.
- Different historic "layers" (contemporary vs. period grounds) are presently not distinguishable. These "layers" require clarification.
- The cross river borrowed landscape presently does not reinforce the interpretive objectives of the site, due to riverfront residential lot development.
- The pedestrian path system should be reviewed, taking into account distances, focal points, and sequential movements. A disabled "circuit" should be established and, where possible, paths should be accessible to the disabled.
- There is a lack of site lighting within the contemporary and the period grounds. Lighting should be introduced for safety, visual effect and visitor way finding.
- Infrastructure elements including fire hydrants, manholes, catch basins, etc. should be selected and located to minimize visual impact.

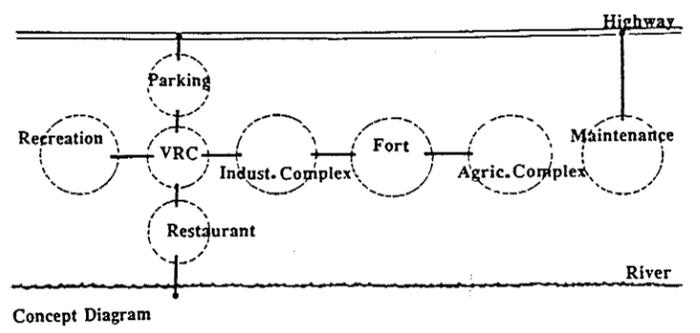
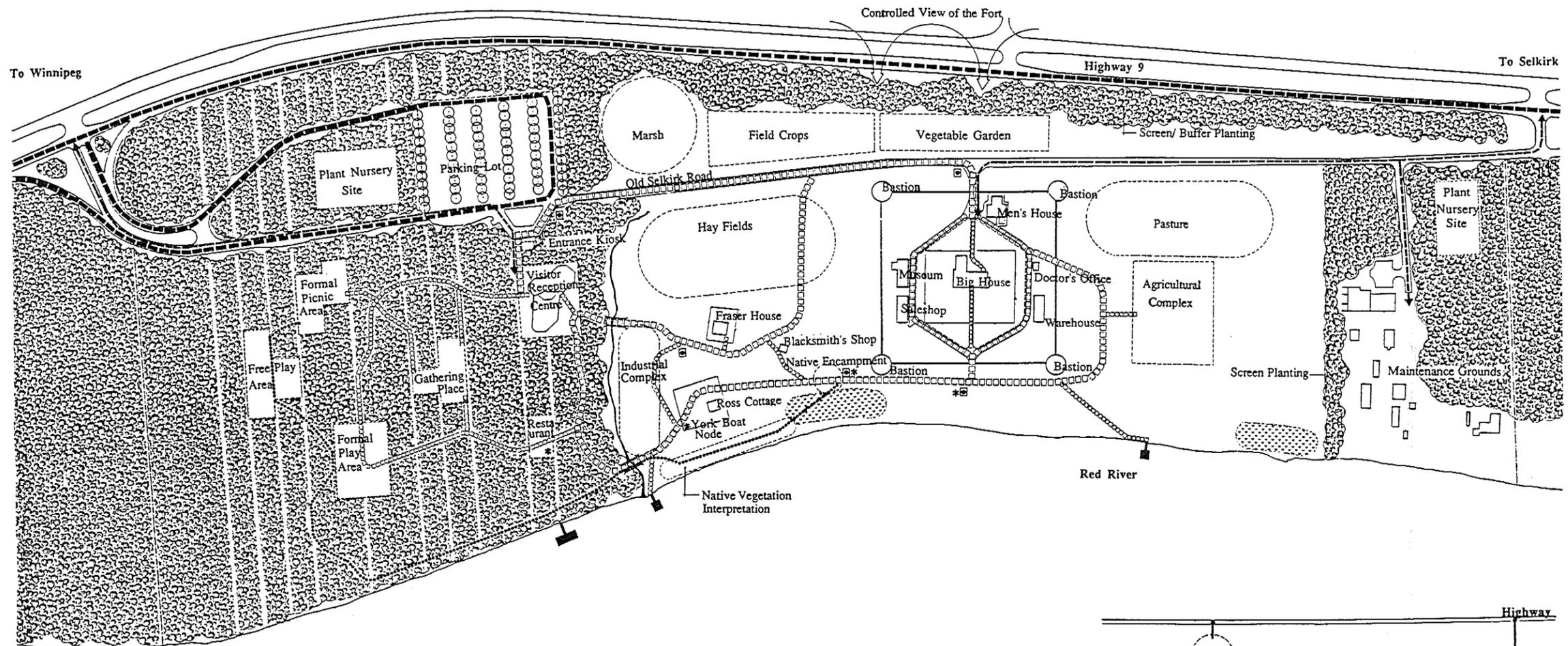
GENERAL :

- Specify site furnishing elements (signs, seats, trash receptacles, lighting, etc.) sympathetic in form, material, and details with the period landscape
- Introduce native grass in the period grounds, covering the areas both north and south of the Fort, and at the Fort itself
- Introduce trees and shrubs along the north, south and west edges of the site to visually screen the contemporary grounds and Highway 9
- Redesign the pedestrian path system to be consistent with the 1850-1865 plan, and provide for disabled access
- Provide period transportation for efficient visitor movement
- Provide viewing points at locations along the river's edge
- Operate the restaurant on a year-round basis
- Accommodate special events, including
 - Spring Festivals:** Spring opening celebration, canoe races and canoe loading /unloading demonstrations, York boat demonstrations and rides, historic spring games and sporting events
 - Summer Festivals:** celebration of signing of Treaty Number One, celebration of Canada Day, etc.
 - Fall Festivals:** the Red River Rendezvous, including historic baking competitions, Red River jig and fiddle competitions, demonstrations of hunting skills, displays and costume competitions relating to "Buffalo Days", celebration of Labor Day, and celebration of the crop harvest
 - Winter Festivals:** celebration of Christmas night at the site, and winter games including dog sledding/horse sleighing, snow-shoeing, tobogganing, ice skating, and dog team racing

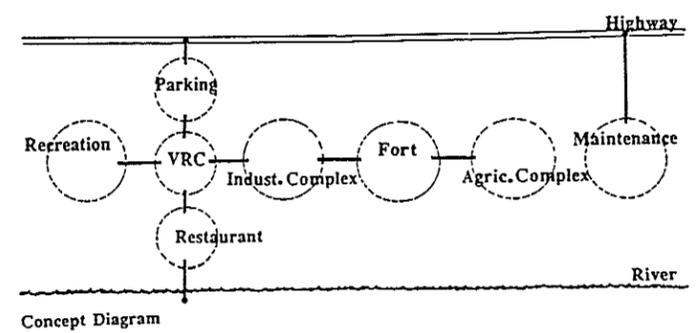
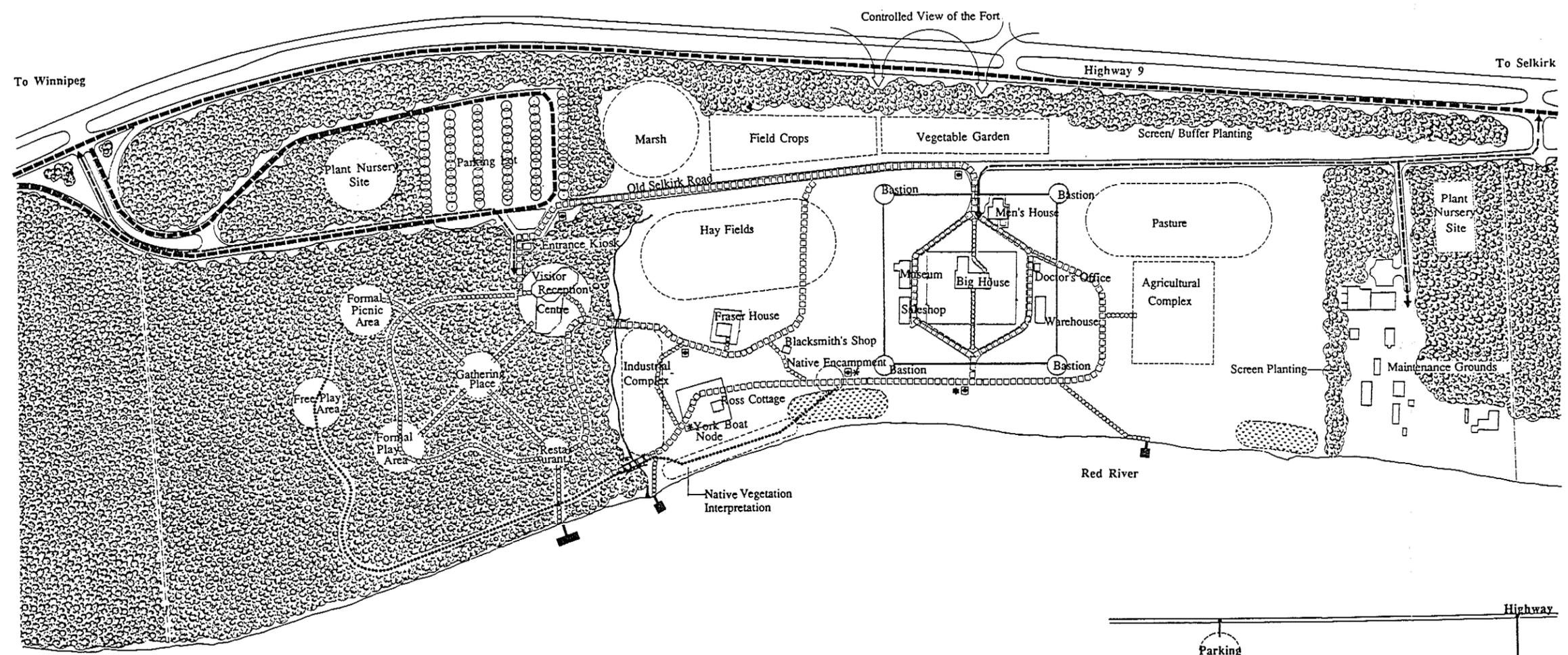


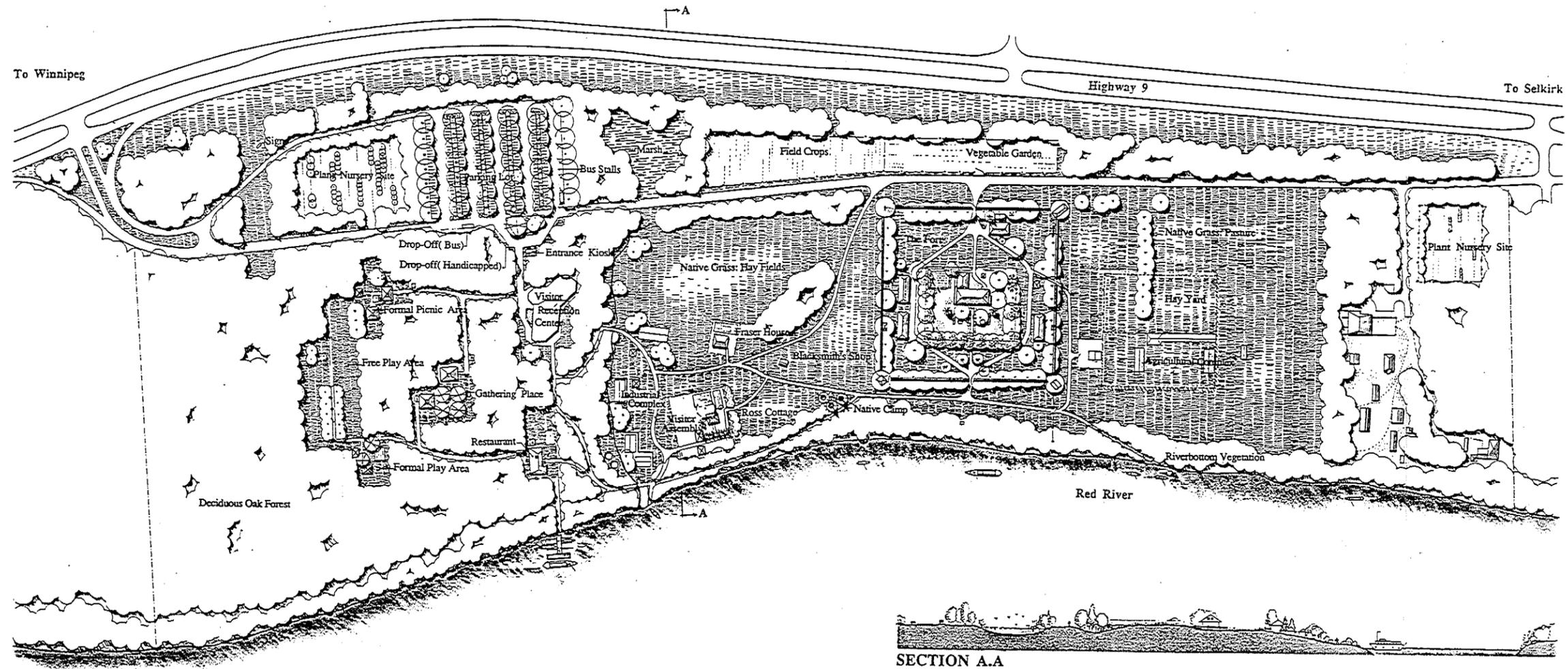
LEGEND

-  Landing: Contemporary
-  Landing: Period
-  Vehicular Circulation: Public
-  Vehicular Circulation: Service & Emergency
-  Pedestrian Circulation: Primary
-  Paths
-  Trails
-  Bridge
-  Wagon Stops
-  Viewing Points
-  Deciduous Oak Forest
-  Reforestation/ Bank Stabilization



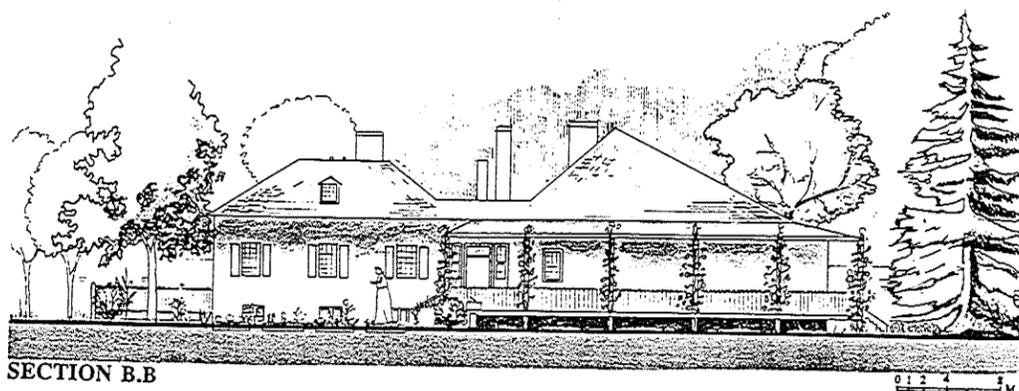
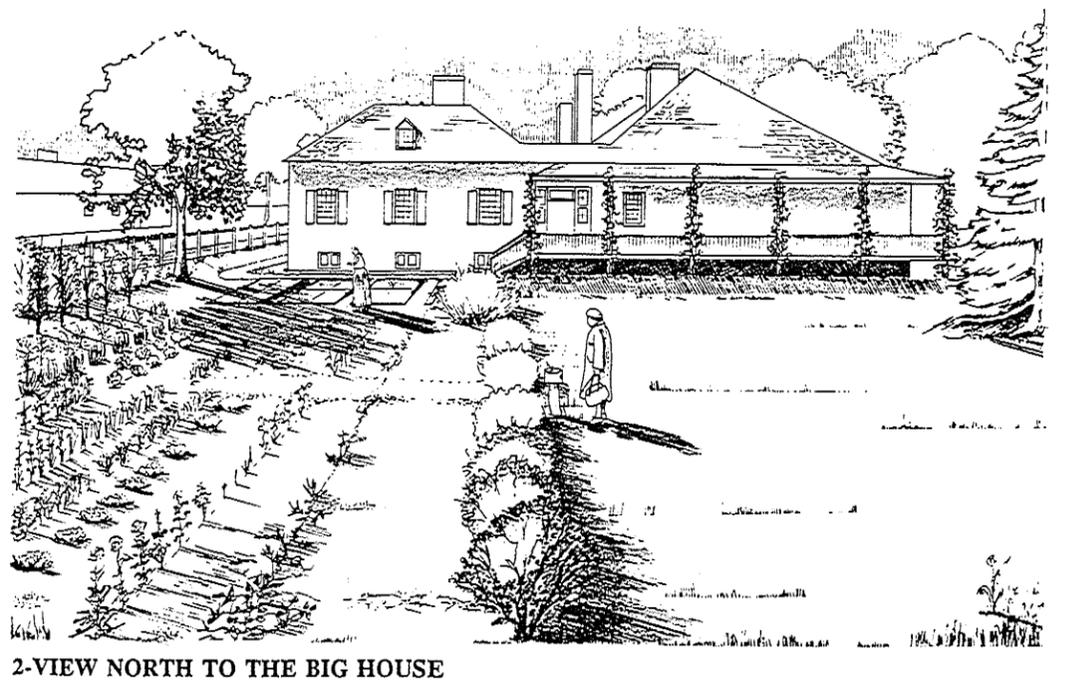
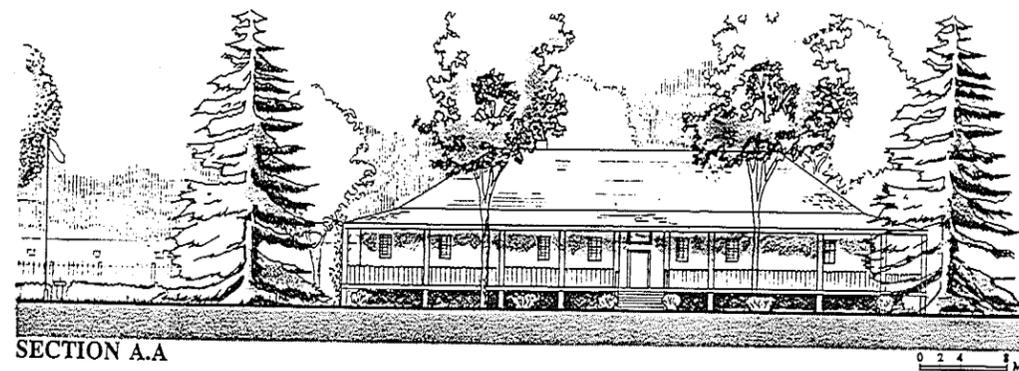
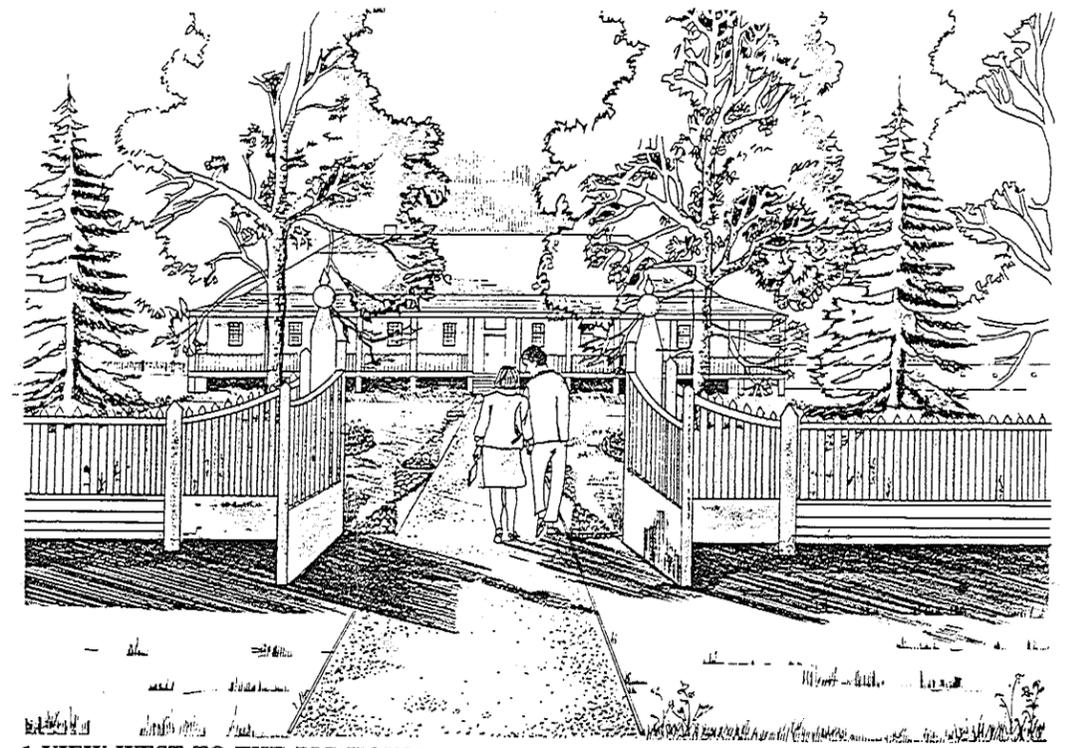
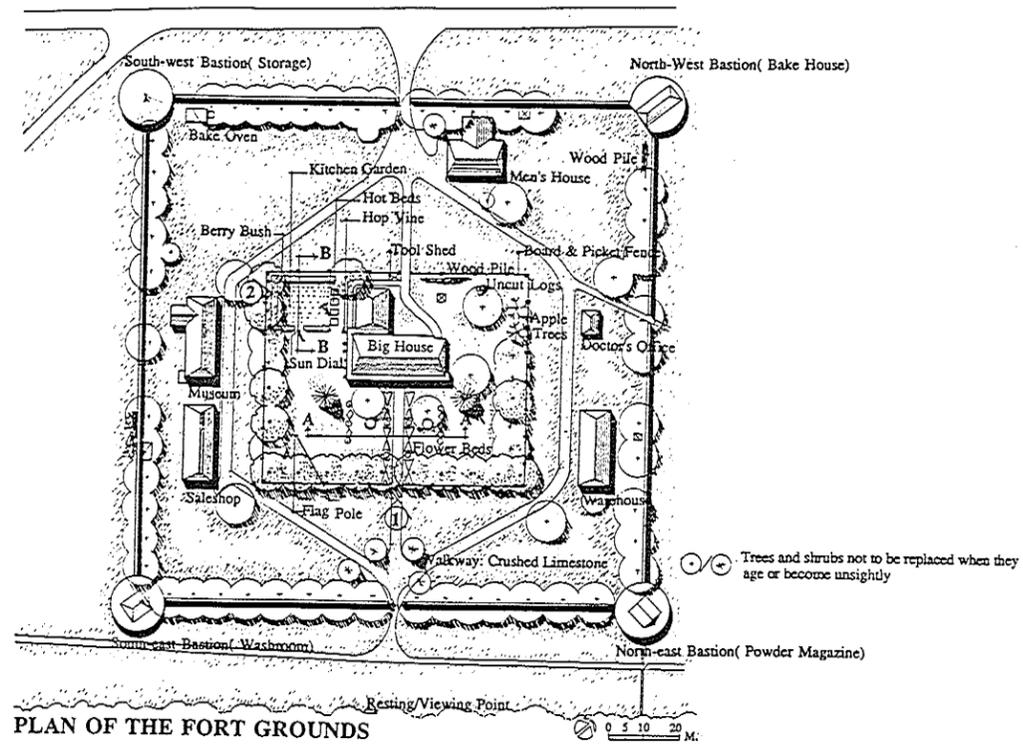
- LEGEND**
-  Landing: Contemporary
 -  Landing: Period
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 -  Trails
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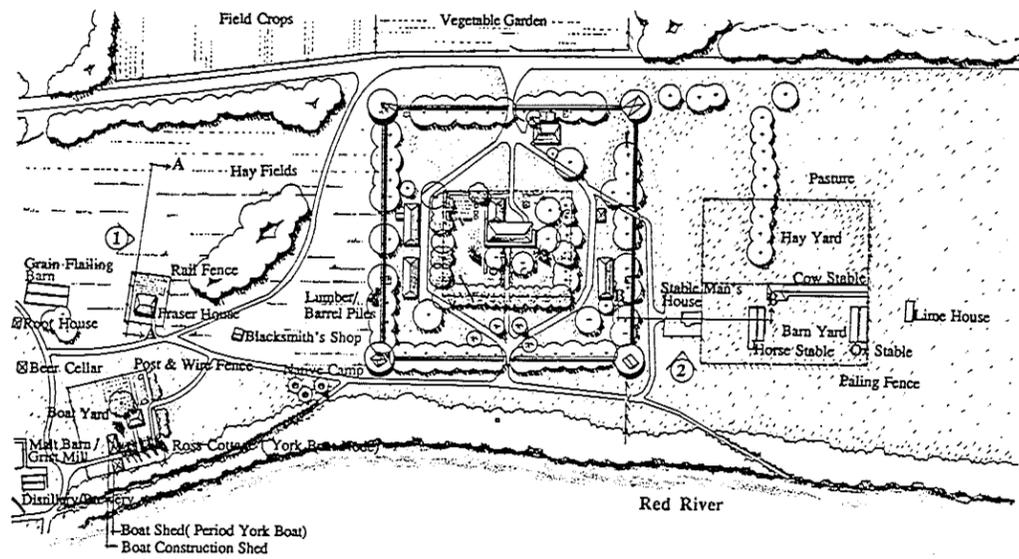




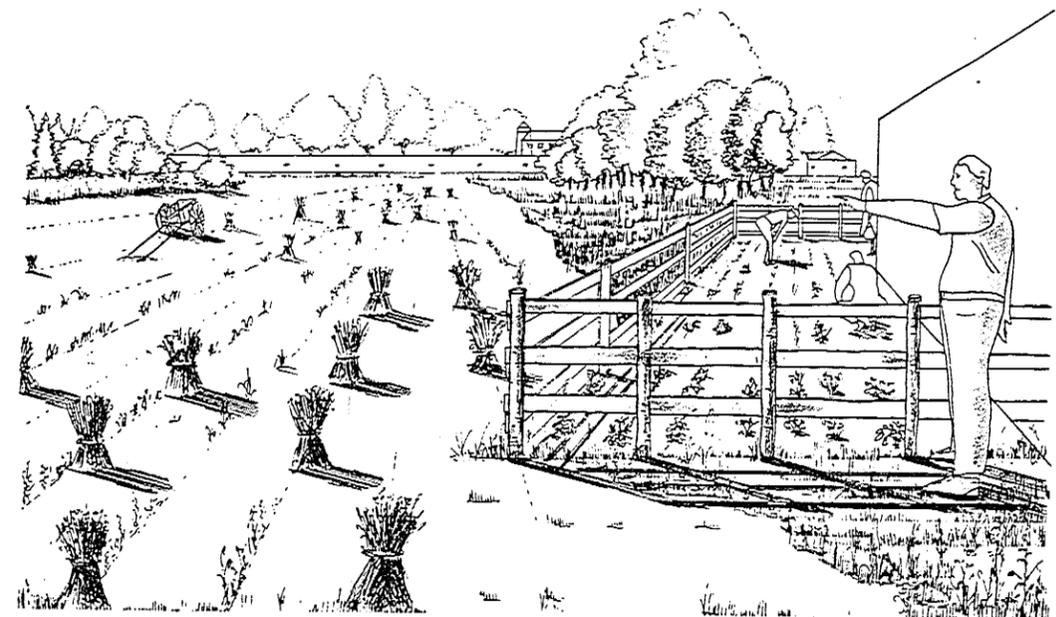
SECTION A.A



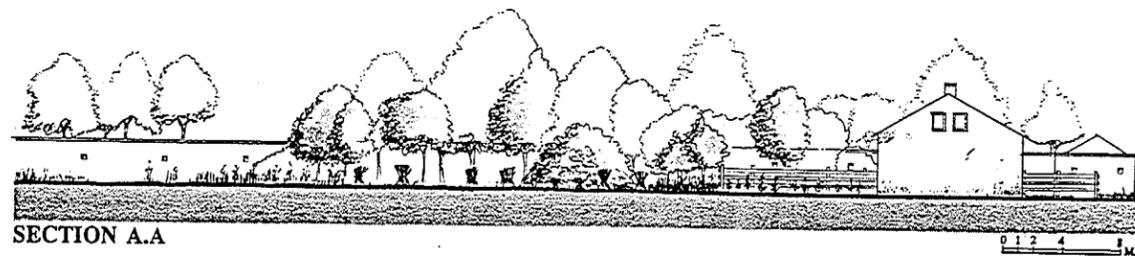




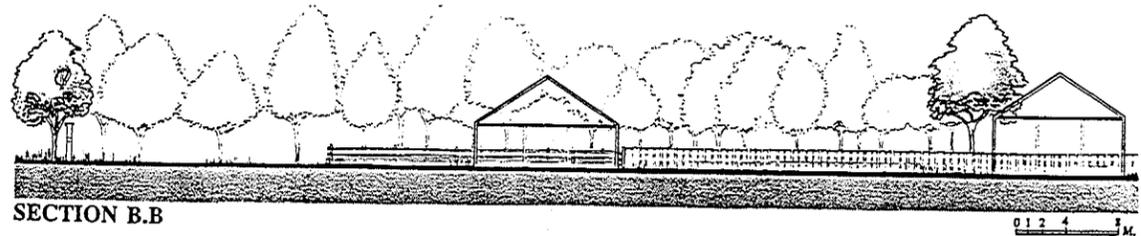
PLAN OF THE PERIOD GROUNDS 0 10 20 40 M.



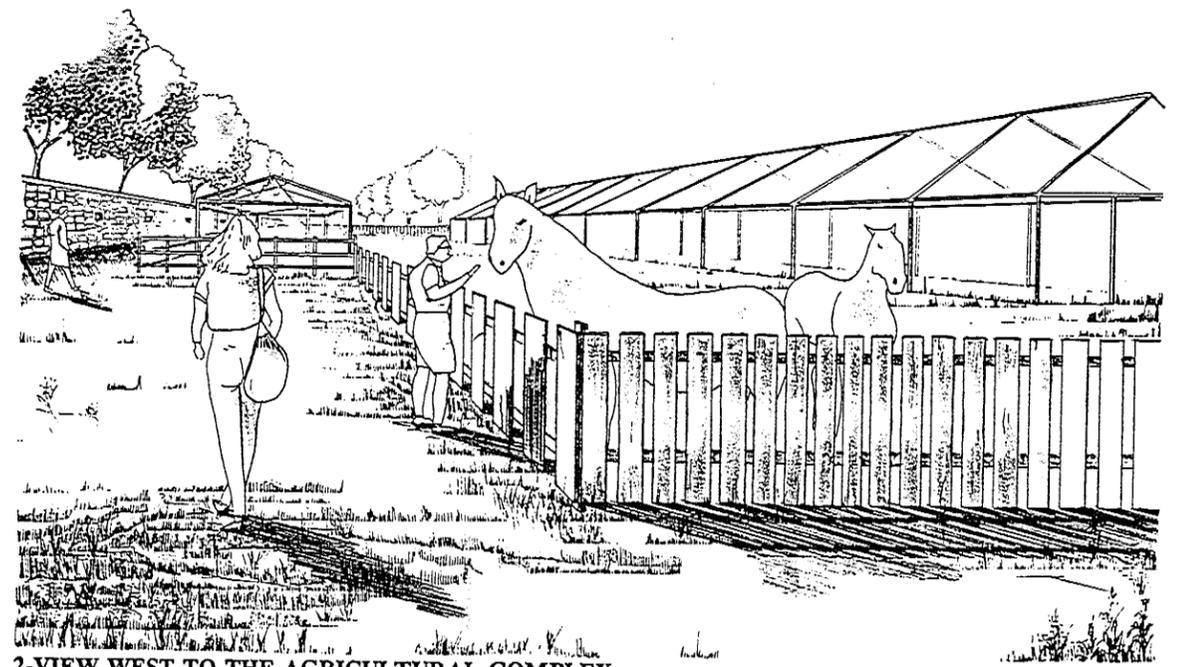
1-VIEW NORTH TO THE HAY FIELDS



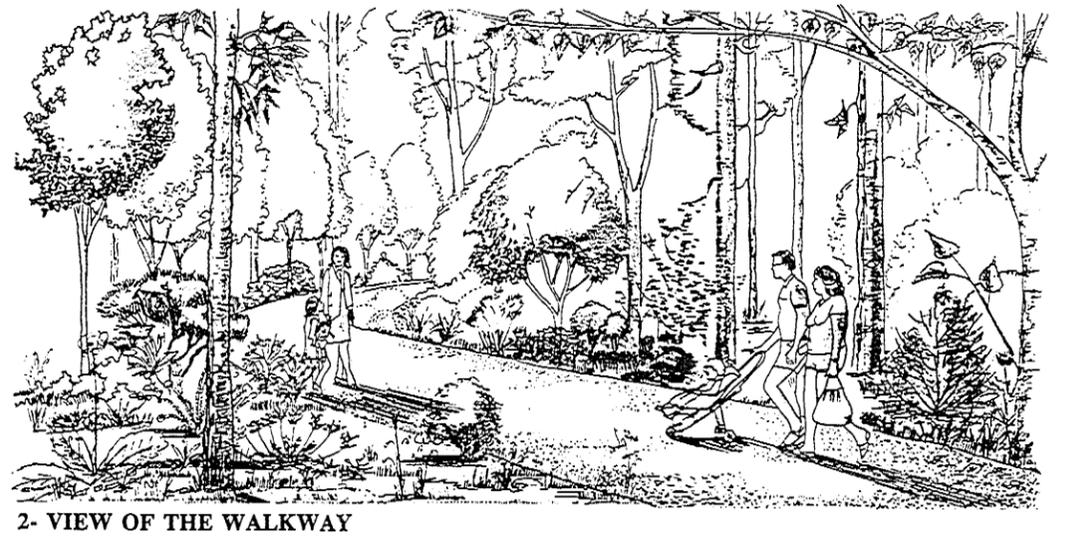
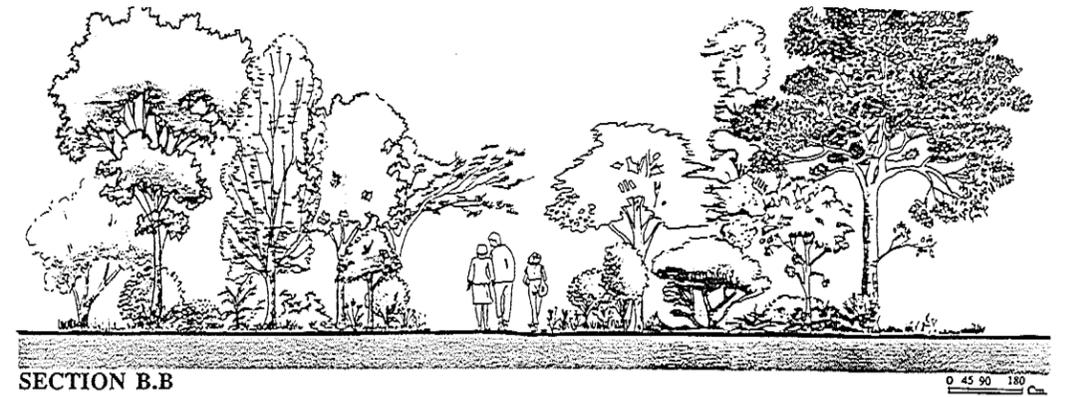
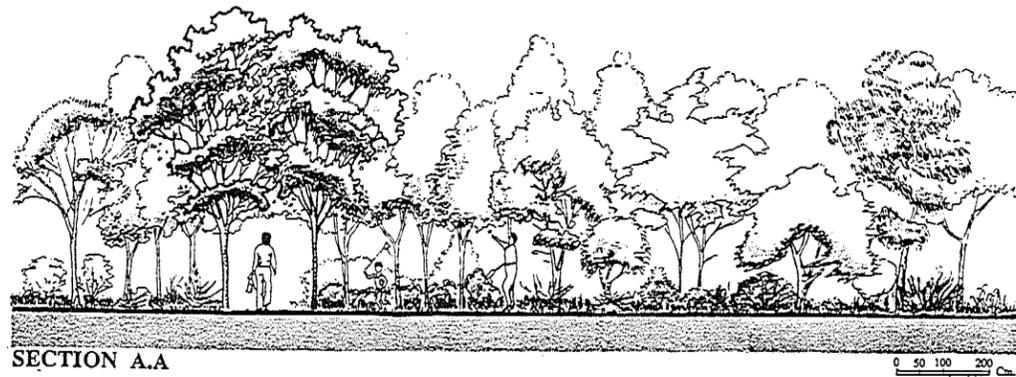
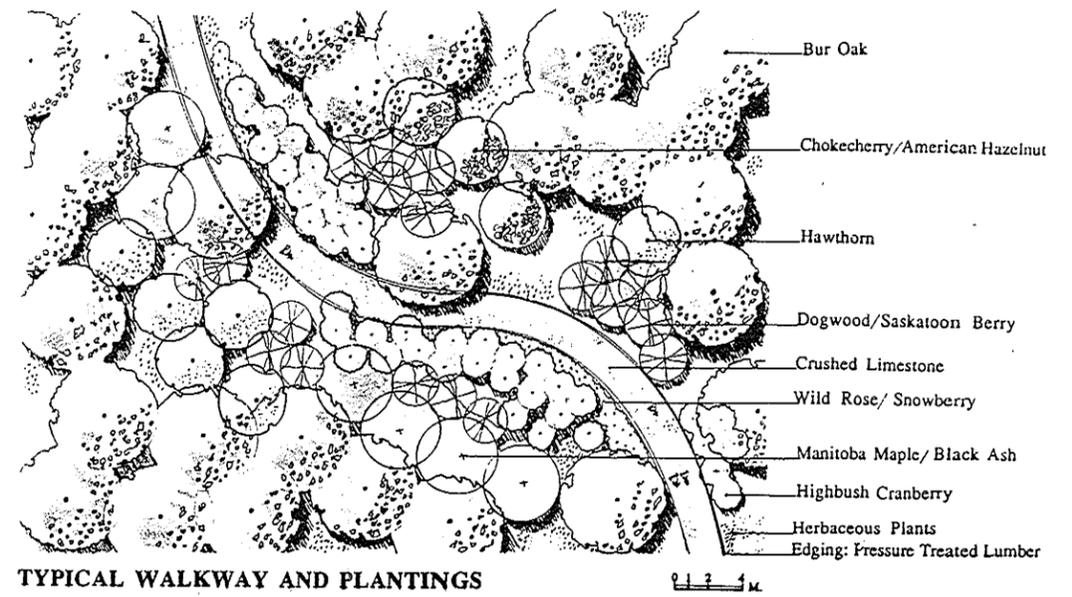
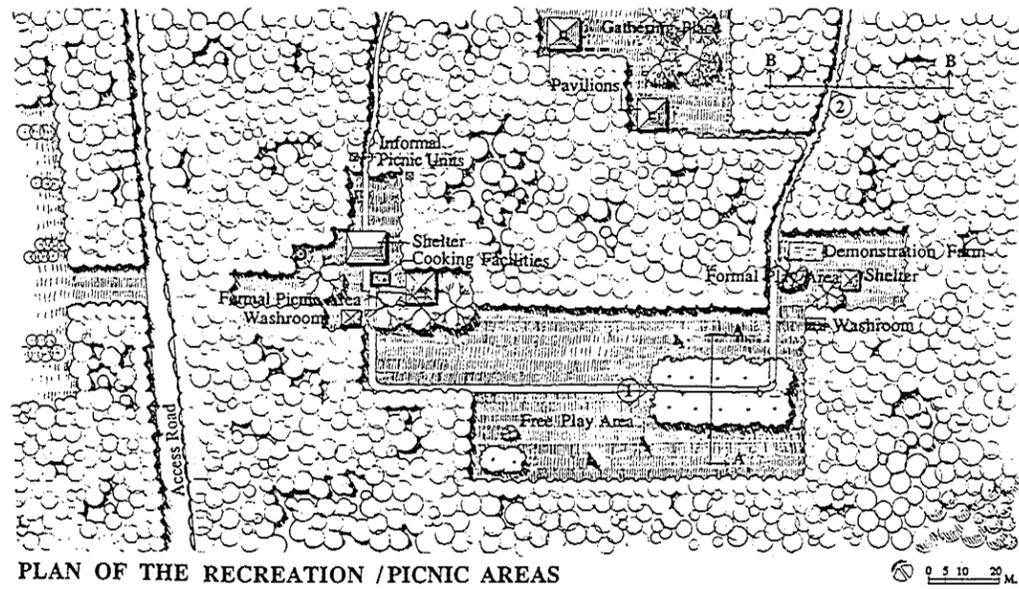
SECTION A.A.



SECTION B.B.



2-VIEW WEST TO THE AGRICULTURAL COMPLEX



APPENDICES

APPENDIX 1

GUIDELINES AND STANDARDS FOR CONSERVATION/RESTORATION OF HISTORIC LANDSCAPES:

Conservation in general is part of a responsible and well prepared management plan with the basic aim of protecting, maintaining and enhancing cultural resources so that they can continue to be positive elements of our cultural heritage. Conservation is a combination of art and science, which requires a balance maintained between different forces and factors acting upon the landscape in order to achieve satisfactory results (1).

Several internationally accepted Charters deal with the restoration of historic landscapes which include Venice (1966), Florence (1982) and Burra (1981) Charters produced by ICOMOS. Restoration of historic gardens / landscapes as a monument must be carried out according to the principles outlined in the Venice Charter (1). However, since a historic garden / landscape is a live monument, its preservation must be governed by specific rules outlined in 1982 Florence Charter. The Florence Charter as an addendum to the Venice Charter covers the specific principles related to the preservation of the Historic gardens (3).

Following are some basic guidelines/standards relevant to the planning and design of a period landscape plan for Lower Fort Garry National Historic Site. These principles / guidelines are derived from the Florence Charter-ICOMOS (1982), draft document prepared by P.H. Goodchild in the United Kingdom (1990), National Historic Sites Policy established by the Canadian Parks Service (1990), and a draft document prepared by the United States National Park Services (1992):

Florence Charter-ICOMOS 1982 (3):

Article 3: As a monument, a historic garden must be preserved in accordance with the spirit of the Venice Charter. However, since it is a **Live Monument**, its preservation must be governed by specific rules which are the subject of the present Charter.

Article 8: A historic landscape is a specific landscape which, for example, is associated with a memorable happening, a major historical event, a well-known myth or an epic combat, or is the subject of a famous picture.

Article 9: If a historic landscape is to be preserved it demands care such as maintenance, conservation and restoration. When actual reconstruction is recommended, the **Authenticity** of a historic landscape is as much a matter of the design and proportions of its various parts as of its decorative features or of the choice of plan materials adopted for each part of it.

Article 10: In any work of maintenance, conservation, restoration or reconstruction of a historic landscape, or of any part of it, all the elements composing it must be dealt with simultaneously. To isolate the various operations would be to damage the unity of the whole.

Article 11: Maintenance in the case of historic gardens / landscapes is an operation of paramount importance which must necessarily be continuous. Since the principal material consists of the plants, the preservation of the garden in an unchanged condition will involve both individual replacements whenever required and a long-term program of periodic renewal.

Article 15: No restoration and reconstruction work on a historic garden shall be undertaken without thorough prior research which will ensure that such work is scientifically performed and which will involve everything from excavation to the assembling of records relating to the garden in question and to the similar gardens.

Article 17 : Where a garden has completely disappeared or there exists no more than conjectural evidence of its successive aspects, there can be no question of seeking to reconstruct anything in the nature of a historic garden. A work inspired by traditional forms, laid out in such circumstances on the site of a former garden, or a site where none had existed, would belong to the realm of reminiscence or of original creation and could in no case be classed as a historic garden.

Article 20: Though gardens may be suitably able to accommodate quiet games as a daily occurrence, separate areas should also be laid out side by side with historic gardens in which active and lively games and sports may be practiced, so that the needs of the public may be satisfied in this respect without prejudice to the conservation of the gardens and landscape.

Article 24: An historic garden is one of the features of the heritage whose survival, by reason of its nature, requires the greatest amount of continuous attention on the part of qualified persons. Suitable educational provisions should therefore be available for the training of such persons whether historians, architects, landscape architects, gardeners or botanists care should also be taken to ensure that there is regular production of the plant varieties called for each case.

Summary of Principles for the Conservation of Historic Landscapes By P.H. Goodchild (1):

1. The conservation of Historic landscapes is concerned with the responsible long and short term management of a valuable and often limited resource. Its main objective is to safeguard sites from deterioration and unnecessary change. Reconstruction of the site, or parts of it, is not a primary aim nor is archaeological excavation although both may be included amongst the forms of action that may be required.
2. Where they can be justified, authentic reconstruction must be supported by sufficient resources to enable the procurement of adequate research, authentic materials and plants, properly skilled personnel and adequate long term maintenance.
3. Public access must not degrade a site.
4. Plants and vegetation are essential ingredients of landscapes. The nature of the plants necessitates a continual and sometimes rapid growth or change which means that to maintain a landscape in an agreed state or in an agreed equilibrium it is therefore likely to require more labour. In the case of trees and shrubs the idea of what is as acceptable state may have to be revised from time to time to accommodate their continuing development. The alternative is to exercise a policy of pruning or to clear and replant at given intervals.
5. In principle all phases in the development of a site are valid to a historian. For the purpose of conservation, it is presumed that the last significant phase in the development of an historic landscape should be respected and kept unless there is an overriding case for altering it. Such a case must be fully

- justified and properly formulated to be acceptable. Alterations should be kept to the minimum that is necessary.
6. Particular care must be taken to prevent personal aesthetic preferences from devaluing historic features which do not conform with these preferences.
 7. Informed and regular upkeep and maintenance is an extremely important aspect of historic landscape conservation.
 8. In connection with plants and planting schemes, the replacement should be the same as the original feature. This may not always be possible with ornamental planting schemes, in which case the replacement should be consistent with the historic character of the site.
 9. Redesign of part or parts of the site to suit current uses and circumstances should be carried out in a manner that fully understands the historic character of the site and especially the character of the areas that adjoin the parts that are being redesigned.
 10. New additions to the site to meet current uses and circumstances should be made in a manner that fully understands the historic character of the site and especially the character of the areas that are adjacent to it. An addition might be a legitimate occasion on which to develop the character of the site.
 11. Clearance or removal of selected features, for example recent additions which seriously impair the historic character of the site.
 12. Public access may be necessary for the financial viability of the site or because it is part of the management policy. Public access must not jeopardize the conservation of a site.

Canadian Parks Service Policy (4):

Section 3.4.1.2: In undertaking conservation activities Canadian Parks Service is especially cognizant of the principles of respect for the existing form and material that constitute the historic character of a cultural resource. Conservation activities will therefore involve the least possible intervention to achieve objectives.

Section 3.4.4.4: In the case of sites and structures, modification may include the activities of period restoration, and of rehabilitation for purposes of safety, property protection and access.

- Period restoration is the accurate recovery of an earlier form, fabric and detailing of a site or structure based on evidence from recording, research and analysis, through the removal of later additions and the replacement of missing or deteriorated elements of the earlier period.

Section 3.5.2.8: In exceptional circumstances, the period reconstruction or replication of whole structures or complexes may be considered as the best possible means of achieving public understanding of a significant aspect of the past. Period reconstruction may not be undertaken unless:

- a) reconstruction of the vanished resource would make a significant contribution to historical, scientific or technical knowledge; and
- b) the cost of reconstruction, including its maintenance and operation, can be justified in relation to the historic significance and interpretative potential of the work.

If these considerations are met, reconstruction may only be considered if:

- a) there are no significant preservable remains that would be threatened by reconstruction; and
- b) there is sufficient research information to support an accurate reconstruction.

Section 3.5.3.1: Regarding special programs and events, Canadian Parks Service will encourage those activities that are consistent with the principles of cultural resource management, are appropriate to the specific national park, national historic site or historic canal and are acceptable to Canadian Parks Service.

Section 3.5.3.3: Special events and uses will be encouraged where they contribute directly to public appreciation of the historic themes, resources and opportunities of a national park, national historic site or historic canal.

Section 3.5.3.4: Special events and uses will respect cultural resources and their historic character and will not impair the safety, experience and enjoyment of visitors.

Guidelines for restoration of historic landscapes established by the United States National Park Service (5):

1. Retaining and maintaining vegetation that existed during the restoration period through a program of cyclical, pruning, mowing, feeding, weed removal, and pest control.
2. Removing later vegetation and other features that is overgrown and has significantly changed from the design intent or appearance during the restoration period.
3. Removing trees, shrubs, vines and herbaceous plant material including weed growth through mechanical removal, pruning, careful use of pesticides, and other techniques that did not exist during the restoration period.
4. Restoring a missing vegetation feature in kind, matching the original design intent and appearance during the historic period.
5. Replacing the missing vegetation based on the historic records rather than speculation which creates a false historic appearance.
6. Removing plant and animals that have invaded the historic landscape since the restoration period, which pose a threat to the character and health of the historic landscape and its features. For example, removing volunteer trees which obscure a historic view.
7. Retaining and maintaining circulation features and their historic alignment, materials, and associated features that existed during the restoration period. This may include removing a new road surface and replacing it with an historic surface or widening/ narrowing an existing road or path to recreate the appearance during the restoration period.
8. Reestablishing views that existed during the restoration period by clearing vegetation or removing structures constructed at later period which blocks the view.
9. Demolishing site structures or later additions that were constructed after the restoration period.
10. Replacing an entire circulation feature and its historic alignment, grade, surface material, and associated features based on historical, pictorial or documentary evidence.

APPENDIX 2

CHRONOLOGICAL HISTORY OF LANDSCAPE EVOLUTION AT LOWER FORT GARRY (9):

- 1822 - George Simpson was appointed governor of the Hudson Bay Company's Northern Department. This fur-trade district included York and Churchill Factories, the entire Northwest and the Pacific Slope.
- Upper Fort Garry was built at the confluence of the Red and Assiniboine Rivers, and was the centre of the Red River Settlement.
- 1826 - Upper Fort Garry, now the city of Winnipeg, having been built on a flood plain, was subject to flooding. After the flood of 1826, which caused severe damage to the Upper Fort (the main trading post of the Hudson's Bay Company in the West), Sir George Simpson decided to build a new fort on the Red River, to replace the Upper Fort Garry, to be protected from the floods, and to be the site of the head of navigations. The new fort was to be established at the present Lower Fort Garry, owing to the fact that it was north of the Rapids and had a good harbor near the mouth of a large creek. Following Lord Selkirk's idea, Simpson hoped to encourage agriculture in the district and to develop agriculture to provide provisions for the fur trade posts.
- 1830 - On June 11, Simpson located the site for the new fort, 32 kilometers north of the Forks, and 13 m above the riverbank. Both Lower and Upper Fort Garry were named in tribute to Nicholas Garry, a Director of the Hudson's Bay Company, who served on the advisory Board at the time of the union of the Hudson's Bay Company and the North West Company in 1821.
- 1831 - Construction of the Big House as well as the saleshop/fur loft was begun by Pierre Leblanc.
- 1832 - The first stone quarry was situated immediately in front of the Fort on the river side.
- Governor Simpson and his wife moved to Lower Fort Garry and took up residency in the Big House.
- 1834 - Alexander Christie became a chief factor for the Red River District. He readopted the Forks as the administrative centre for the Company's operation and he moved back to the Forks. These changes in the administration brought about delay in the development of Lower Fort Garry. However, the Fort continued to function as a trans-shipment location

for the Company and the retail store / fur loft remained open for the benefit of the local settlers.

- 1835 - Upper Fort Garry was rebuilt and conducted a progressive trade in and trade. In the fur trade, the Lower Fort Garry was one of the landing places for the boat brigades commuting between Red River and northern posts with their cargos of furs and provisions.
- 1838 - Construction of the Fort walls began.
- 1839 - Establishment of the "hay yard" at Lower Fort Garry. It foreshadowed the development of the agricultural complex at the site. Simpson had always considered Lower Fort Garry to be an ideal site for a company farm. Simpson assumed about the Lower Fort's agricultural potential as follows:
- "..I think that [the lower fort] will in due time become the Principal Farming Establishment as the pasture is more rich and abundant in that Neighborhood than anywhere else with dry ridges that may with little labour be cleared of the willows & underwood, so as to become peculiarly well adapted for sheep walks"(9).
- 1840s - Construction of the south-west & north-east bastions began in the early 1840's and was completed by the members of the Sixth Regiment of Foot.
- Construction of the original farm manager's cottage.
 - Construction of Ross cottage south of the Fort.
- 1840 - An Annex was added to the west side of the Big House.
- 1844 - Completion of the stone warehouse north side the Fort compound.
- 1845 - The construction of the distillery and malt barn started on the north side of the creek and ended in 1846.
- Arrival of the Sixth Regiment of Foot at Lower Fort Garry.
 - The Engineer's cottage was erected at the mouth of the creek.
 - The warehouse (built in late 1830's) was used as temporary barracks for the troops.
- 1846 - North-west bastion / powder magazine was finished by the members of Sixth Regiment.
- The south west bastion and adjoining structures were completed.

- 1847 - The store house was constructed near the distillery complex.
- 1848 - Completion of the wall construction.
 - North-west bastion / bake house was constructed during the occupancy of the Sixth Regiment.
 - Sixth Regiment of Foot left Lower Fort Garry for York Factory and England.
 - The Hudson's Bay Company began moving back and reestablishing within the Fort and resuming its role as a trans-shipment depot and retail centre.
- 1849 - Eden Colvile, son of a deputy governor of the Hudson's Bay Company, was appointed as assistant Governor of the Rupert's Land.
 - Alterations to the Big House: The alteration included blocking off of the house from the wing while retaining the annex for the use of the Company. This alteration created two distinct houses with separate entrances which altered the landscape of the Fort.
- 1850's - Simpson decided to exploit the agricultural potential of the Lower Fort Garry land reserve. It was during early 1850's that the industrial base at the creek was expanded and these changes certainly had great impacts on the landscape of the Lower Fort Garry.
 - Development of a flower garden and lawn at Lower Fort Garry (within the Fort walls).
 - Men's house was built in early 1850's.
- 1850 - Eden Colvile arrived at Lower Fort Garry and settled in the Big House, and Fort Garry again became the residence of a governor.
- 1852 - Although Lower Fort Garry was located above the flood waters, the Red River break up caused flood damage. Part of the distillery wall was crushed by ice and grainery next to it was flooded.
- 1857-58 - Hudson's Bay Company decided to establish a major farm at Lower Fort Garry. Simpson's decision was to exploit the agriculture potential at Lower Fort Garry. Thus, Alexander Lillie was appointed to the position of farm manager.
- 1860's - The major modifications at Lower Fort Garry was inclusion of a lumber and grist mill in the malt barn south of the Fort wall and renovation of the sheds for the maintenance of steamboat which replaced the York boats.
- 1865 - Steam mill was built at the industrial complex in the renovated malt barn (built in 1845).
 - Lower Fort Garry became the construction site for the Schooner Polly.
- 1867 - The Northern Department warehouse was built.

- 1868 - The third warehouse was erected inside the Fort walls, situated against the east wall, north of the east gate.
- 1869 - Lower Fort Garry served as a rallying point for the "loyalists" who were opposed to the provisional government of Louis Riel and his Metis.
- To suppress the Metis resistance, Quebec Rifles arrived at Lower Fort Garry.
- 1870 - The transfer of control over Rupert's Land from the Hudson's Bay Company to the Canadian Government.
- 1871 - Dual occupancy of Lower Fort Garry. Leasing of north side of the Fort (the stone warehouse and all the land and smaller buildings enclosed in a stockade) to the government for the purpose of a penitentiary .
- Fraser house (built in 1835 by James Fraser) was moved to Lower Fort Garry to replace the former farm manager's cottage.
- Departure of the Quebec Rifles from Lower Fort Garry.
- On August 23, the first Indian Treaty in the west was signed at Lower Fort Garry, between the Canadian Government and two tribes, the Chippewans and the Swampy Crees.
- 1871-72 - The construction of the steam boat Chief Commissioner.
- 1873-74 - A fence was constructed, enclosing the engineer's cottage.
- Installation of a bell on a wooden frame behind the location of the saleshop.
- The occupation of Lower Fort Garry by the first contingent of North West Mounted Police.
- The flagpole was placed inside the Big House fence at the south-east corner.
- 1874 - Again, the Fort became as a summer retreat for the Hudson's Bay Company officers, a local saleshop and a minor administrative centre for smaller outposts on Lake Winnipeg.
- 1879 - Establishment of dwellings along the eastern bank of the Red River.
- 1880 - Major renovations to the Big House took place.
- 1882 - Removal of the agricultural and industrial buildings from Lower Fort Garry to Colville landing. This included the grist mill, saw mill, malt kiln, the brewery at the mouth of the creek and the Miller's cottage on the south side of the creek.
- 1884 - Lease of the Fort interior including: men's house, the old carpenter's shop/ warehouse to

the Provincial Government for the purpose of a lunatic asylum.

- 1885 - Doctor's office, adjacent to the warehouse (penitentiary/ asylum) was built as a dispensary for Dr. Young, the medical officer in charge of the asylum at Lower Fort Garry.

- 1887 - Removal of the cattle and cow stables from the area north of the Fort.

- 1910 - Hudson's Bay Company closed the saleshop at Lower Fort Garry.

- 1911 - The bell was removed to the tree in front of the Big House.
- South of the Fort, the barn was torn down.
- Clarence Campbell Chipman, the Hudson's Bay Company land commissioner retired and by closing the saleshop at Lower Fort Garry, eighty years of trade at Lower Fort Garry was ended.
- Lower Fort was purchased by the Federal Government as National Reserve which covered an area of 10 hectares including Lower Fort Garry.

- 1913 - Lease of Lower Fort Garry by the Winnipeg Automobile Association (Motor Country Club) and its official opening. The Big House became a club. House; the old stone house/ warehouse / penitentiary converted to a shower and locker room; the men's house became a stable.

- 1920's - A formal garden was introduced along the east fence of the Big House. Perennials and annuals were planted with shrubs and Manitoba Maples. Flowers were also planted along the graveled walkway. Circular stone-lined garden beds were introduced by the motor country club inside the east gate on both sides of the road by the Big House itself and by the south-east corner of the Big House lawn directly in front of the saleshop / fur loft. A similar stone-bordered flower bed was also established on the north side of the walkway leading to the Big House rear.

- 1951 - Lower Fort Garry became a National Historic Site.

- 1963 - The Department of Indian Affairs and Northern Development initiated the restoration of the Fort to interpret the fur trade period.

APPENDIX 3

LIST OF THE EXISTING PLANT SPECIES AT THE LOWER FORT GARRY SITE:

Table 1. List of cultivated flowers and vegetables.

Latin Name	Common Name	Location**			
		V.R.C.	B.H.	R.C	F.H.
Flowers:					
<i>Adonis aestivalis</i> L.	Summer Adonis		*		
<i>Ageratum houstonianum</i> Mill.	Ageratum	*			
<i>Antirrhinum majus</i> L.	Snapdragons	*			
<i>Callistephus chinensis</i> Ness.	China Aster		*		
<i>Centaurea cineraria</i> L.	Dusty Miller		*		
<i>Dahlia pinnata</i> L.	Garden Dahlia		*		
<i>Delphinium ajacis</i> L.	Larkspur	*			
<i>Dianthus barbatus</i> L.	Sweet William				*
<i>Eschscholzia californica</i> Cham.	Calif. Poppy		*		
<i>Geranium</i> sp. L.	Geraniums		*		
<i>Heliopsis helianthoides</i> (L.) Sweet.	Ox Eye		*		
<i>Iberis amara</i> L.	Candytuft	*	*		
<i>Impatiens balsamina</i> L.	Balsam		*		
<i>Iris</i> sp. L.	Iris				*
<i>Lupinus</i> sp. L.	Lupines		*		
<i>Mathiola incana</i> R. Br.	Stock		*		
<i>Mirabilis jalapa</i> L.	Marvel of Peru		*		
<i>Monarda fistulosa</i> L.	Bergamot		*		
<i>Nigella damascena</i> L.	Love-in-a-mist		*		
<i>Papaver rhoeas</i> L.	Poppy		*		
<i>Parthenocissus quinquefolia</i> Planch	Virginia Creeper				*
<i>Paeonia suffruticosa</i> Haw.	Peony			*	
<i>Petunia hybrida</i> Vilm.	Petunia	*	*		
<i>Reseda odorata</i> L.	Common Mignonette		*		
<i>Ricinus communis</i> L.	Castor Bean plant		*		
<i>Rosa</i> sp. L.	Rose			*	*
<i>Salvia</i> sp.L.	Sage		*		

<i>Tagetes patula</i> L.	French Marigold	*	*	
<i>T. erecta</i> L.	African Marigold	*	*	
<i>Tropaeolum majus</i> L.	Garden Nasturtium		*	*
<i>Zinnia elegans</i> Jacq.	Zinnia	*		
Vegetables:				
<i>Allium cepa</i> L.	Onion			*
<i>Anethum graveolens</i> L.	Dill			*
<i>Beta vulgaris</i> L.	Beets		*	*
<i>Brassica oleracea</i> var. <i>capitata</i> L.	Cabbage			*
<i>Brassica oleracea</i> Var. <i>botrytis</i> L.	Cauliflower		*	
<i>Capsicum annum</i> L.	Pepper			*
<i>Cucurbita pepo</i> var. <i>medullosa</i> Alef.	Zucchini		*	*
<i>Daucus carota</i> L.	Carrot		*	*
<i>Heracleum maximum</i> Bartram	Parsnip			*
<i>Lycopersicon esculentum</i> Mill.	Tomato		*	*
<i>Phaseolus vulgaris</i> L.	Kidney Bean		*	
<i>Pisum sativum</i> L.	Pea		*	
<i>Rheum rhaponticum</i> L.	Rhubarb		*	
<i>Satureja hortensis</i> L.	Savory		*	*
<i>Solanum tuberosum</i> L.	Potato			*
<i>Spinacia oleracea</i> L.	Spinach		*	
<i>Zea mays</i> L.	Corn		*	

Table 2. List of major non-cultivated species existing on the site (including trees, shrubs, herbs, grasses, and weeds):

Latin Name	Common Name	Origin		
		Native	Non-native	Weed
Trees				
<i>Acer negundo</i> L.	Manitoba Maple	*		
<i>A. ginnala</i> Maxim.	Amur Maple		*	
<i>Betula papyrifera</i> Marsh.	Paper Birch	*		
<i>B. populifolia</i> Marsh.	Grey Birch		*	
<i>Cotoneaster</i> sp. Medic.	Cotoneaster		*	
<i>Caragana arborescens</i> Lam.	Pea tree		*	
<i>Crataegus chrysoarpa</i> Ashe.	Hawthorn	*		
<i>Fraxinus nigra</i> Marsh.	Black Ash	*		
<i>F. pennsylvanica</i> var. <i>subintegerrima</i> (Vahl) Fern.	Red Ash	*		
<i>Malus</i> sp. Mill.	Rosy Bloom Crab		*	

<i>Picea glauca</i> (Moench)Voss.	White Spruce	*	
<i>P. pungens</i> Engelm.	Colorado Spruce		*
<i>Populus deltoides</i> Marsh.	Cottonwood	*	
<i>P. balsamifera</i> L.	Balsam Poplar	*	
<i>P. hybrida</i>	Hybrid Poplar		*
<i>P. tremuloides</i> Michx.	Trembling Aspen	*	
<i>Prunus virginiana</i> L.	Chokecherry	*	
<i>P. americana</i> Marsh	Wild Plum	*	
<i>Quercus macrocarpa</i> Michx.	Bur oak	*	
<i>Rosa</i> sp. cv.Dr. Merkeley	Rose		*
<i>Salix amygdaloides</i> Anderss.	Peach leaved Willow	*	
<i>S. lucida</i> Muhl.	Shining Willow	*	
<i>S. purpurea</i> cv. <i>gracilis</i>	Blue Arctic Willow		*
<i>Sorbus americana</i> Marsh.	American Mountain Ash	*	
<i>S. aucuparia</i> L.	European Mountain Ash		*
<i>Syringa japonica</i> Decne.	Japanese Tree Lilac		*
<i>S. hybrida</i>	Hybrid Lilac		*
<i>S. vulgaris</i> L.	Common Lilac		*
<i>Tilia americana</i> L.	Basswood	*	
<i>T. cordata</i> Mill.	Little Leaf Linden		*
<i>Ulmus americana</i> L.	American Elm	*	
Shrubs			
<i>Caragana pygmaea</i> DC.	Pygmy Caragana		*
<i>Clematis virginiana</i> L.	Clematis	*	
<i>Cornus stolonifera</i> Michx.	Red -Osier Dogwood	*	
<i>Lonicera tatarica</i> L.	Tatarian Honeysuckle		*
<i>Potentilla fruticosa</i> L.	Shrubby Cinquefoil	*	
<i>Rosa</i> sp.L.	Wild rose	*	
<i>Salix interior</i> Rowlee	Sandbar Willow	*	
<i>Symphoricarpos albus</i> (L)Blake	Snowberry	*	
Grasses and herbs			
<i>Achillea millefolium</i> L.	Common Yarrow	*	*
<i>Agropyron repens</i> (L.) Beauy.	Couch Grass		*Δ
<i>Allium stellatum</i> Fraser	Wild Onion	*	
<i>Alopecurus aequalis</i> Sobol.		*	
<i>Anemone canadensis</i> L.	Anemone	*	
<i>Arctium minus</i> (Hill) Bernh.	Common Burdock		*
<i>Artemisia absinthium</i> L.	Wormwood		*Δ
<i>A. caudata</i> Michx.		*	

<i>Aster ciliolatus</i> Lindl.		*	
<i>Astragalus</i> sp.		*	
<i>Bromus inermis</i> Leyss.	Brome Grass		*Δ
<i>Campanula rotundifolia</i> L.	Harebell	*	*
<i>Chenopodium album</i> L.	Pigweed	*	*
<i>Cirsium arvense</i> L.	Canada Thistle	*	*Δ
<i>Echinocystis lobata</i> (Michx)T&G	Wild Cucumber	*	
<i>Galium septentrionale</i> R.&S.	Northern Bedstraw	*	
<i>Glycyrrhiza lepidota</i> (Nut.)Pursh.	Wild Licorice	*	
<i>Heliopsis helianthoides</i> (L)Sweet	Ox Eye	*	*
<i>Hordeum jubatum</i> L.	Foxtail Barley	*	*
<i>Lactuca scariola</i> L.	Prickly Lettuce	*	*
<i>Lychnis alba</i> Mill.	White Cockle	*	*Δ
<i>Lythrum salicaria</i> L.	Spiked loosestrife	*	*Δ
<i>Melilotus alba</i> Desr.	White Melilot	*	
<i>M. officinalis</i> (L.) Lam.	Yellow Melilot	*	
<i>Pastinaca sativa</i> L.	Wild Parsnip	*	
<i>Phalaris arundinacea</i> L.	Reed-Canary Grass	*	*Δ
<i>Poa pratensis</i> L.	Kentucky Blue Grass	*	*Δ
<i>Polygonum</i> sp.L.	Smart Weed	*	*Δ
<i>Rumex acetosa</i> L.	Garden-Sorrel	*	*Δ
<i>Smilax herbacea</i> L.	Carrion Flower	*	
<i>Solidago rigida</i> L.	Golden Rod	*	
<i>S. canadensis</i> L.	Golden Rod	*	
<i>Sonchus arvensis</i> L.	Field sow-thistle	*	*
<i>Tanacetum vulgare</i> L.	Common Tansy	*	*
<i>Thalictrum venulosum</i> Trel.	Meadow Rue	*	
<i>Thlasi arvense</i> L.	Stinkweed	*	*
<i>Tragopogan dubius</i> Scop.	Goat's Beard	*	*Δ
<i>Trifolium pratense</i> L.	Red Clover	*	
<i>Urtica dioica</i> L.	Nettle	*	*
<i>Vicia americana</i> Muhl.	Vetch	*	
<i>Vicia cracca</i> L.	Canada Pea	*	

Δ- Indicates noxious weeds. Designation of the above species as noxious weeds is based on the Noxious Weed Act Regulation N 110-R1 in Manitoba (1970)(31). However, some of these native species may not be considered serious weeds in non-agricultural areas.

**VRC=Visitor Reception Centre; B.H.=Big House; R.C.=Ross Cottage; F.H.=Fraser House

APPENDIX 4

HISTORIC STRUCTURES AT LOWER FORT GARRY:

1. The Big House:

Constructed of limestone between 1831- 1832, the Big House is a simple rectangular structure, one and one quarter storey building, with a hipped roof. The House is surrounded by a wide veranda on north, east and south sides (Figure 9). The House was restored to its period appearance and function (circa 1850) in late 1960's. The historic significance of the Big House is related to its dual role as the living accommodation and administration center for the senior Hudson's Bay Company officers to Lower Fort Garry.

2. Saleshop/ Fur Loft:

The saleshop/ fur loft is a two and one half storey limestone structure rectangular in shape with a medium pitched hipped roof (Figure 10). It was constructed in 1831. The first floor was used as saleshop providing goods and produce for the local community, while goods in bulk were stored on the second floor. The third floor was used as fur loft. The building was restored to its period appearance and function (circa 1850) during 1969-1972 period. The saleshop /fur loft is used to interpret Theme One (7).

3. Warehouse:

The warehouse was built of limestone in late 1830's. A two and one-half storey structure with shingled hipped roof was constructed for the purpose of functioning as trans-shipment center and storage area for the agricultural complex. The warehouse was restored to its period function (circa 1850) in mid 1970's. The warehouse is used to present Theme One.

4. Men's House:

The men's house is a one and one-half storey structure, T-shaped and in the "colombage pierrote" style. The house is sided with stucco (Figure 11). Construction of the men's house dates back to the early 1850's. Historically, it served as the living space for the Post's servants. The house was restored to its period appearance in 1970's and period furnishings were introduced accordingly. The present interpretive program uses the men's house for presenting Theme Two (7).

5. Doctor's Office:

Built in 1885, the small wood frame structure was used as a dispensary for the doctor in charge of the penitentiary. The building does not have a heritage value (7) and presently is not being used in any interpretive program.

6. The Museum:

As an exterior replica of the Hudson's Bay Company retail store, which was located at the same location during 1873-1924 period, the museum was built between 1963 and 1965. The facade of the building is period while the shell is built of concrete and steel. At the present, the building functions as a museum housing the Hudson's Bay Company Collection (7).

7. North-East Bastion/ Powder Magazine:

The bastion is a plain limestone structure 15 meters in diameter with no roof. The construction of the northeast bastion began after 1841 and was completed in 1846. It contained the Fort's powder magazine. The magazine itself is also made of limestone with a semicircular arch and was bombproof. The roof supports and the floor, the foundation, and its walls were restored in the 1950's, 1968 and 1990 respectively (7).

8. North-West Bastion/ Bakehouse:

The north west bastion was built in 1848. A later addition was a bakehouse, which remained functional until it was demolished in 1911. The bakeovens were rebuilt in the mid 1980's and today provides bread for the period restaurant. The bakehouse is used in interpreting Theme One (7).

9. South-East Bastion:

The exact date of construction for this bastion is uncertain. However, it was completed in 1846 by the Sixth Regiment. Originally, the south east Bastion was used as ice house. In 1956 a public washroom was constructed inside it and in 1989/1990 the Bastion itself was reconstructed. The South East Bastion does not have any "heritage value"(7).

10. South-West Bastion:

The construction of the south west bastion began in the early 1840's and was completed in 1846. The south west bastion was used both as a cook house(by the Sixth Regiment) and storage (by the Company). The bastion was restored to its period appearance (circa 1850) in 1968 (Figure 12). The south west bastion can be used in interpreting Theme Three.

11. The Fort Walls:

The construction of the walls began in 1838 and ended between 1946 and 1948. The walls were built for the purpose of providing for a "defensible fort". Constructed of limestone, walls were 2.5- 3.5 meter high, one meter thick and extending two meters below the ground. The area within the walls is 2.0 hectare and three gates at the east, west and the north provide entry points to the Fort. The walls and bastions have been restored in several stages since 1987 (Figure 13).



Fig. 9. The Big House, 1972 (Source: Lower Fort Garry Archives).

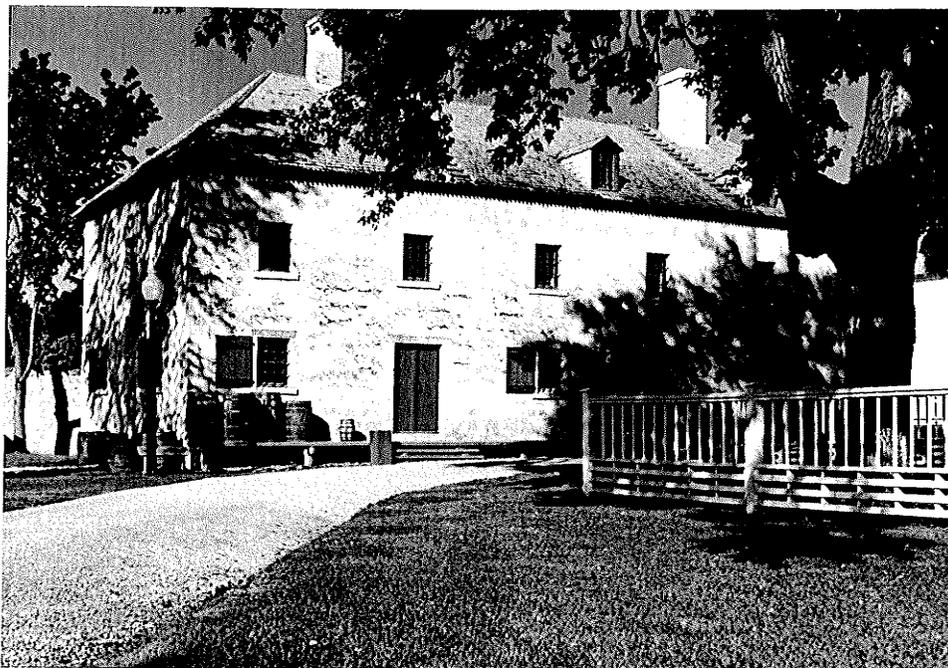


Fig. 10. Saleshop/Fur Loft, 1972 (Source: Lower Fort Garry Archives).

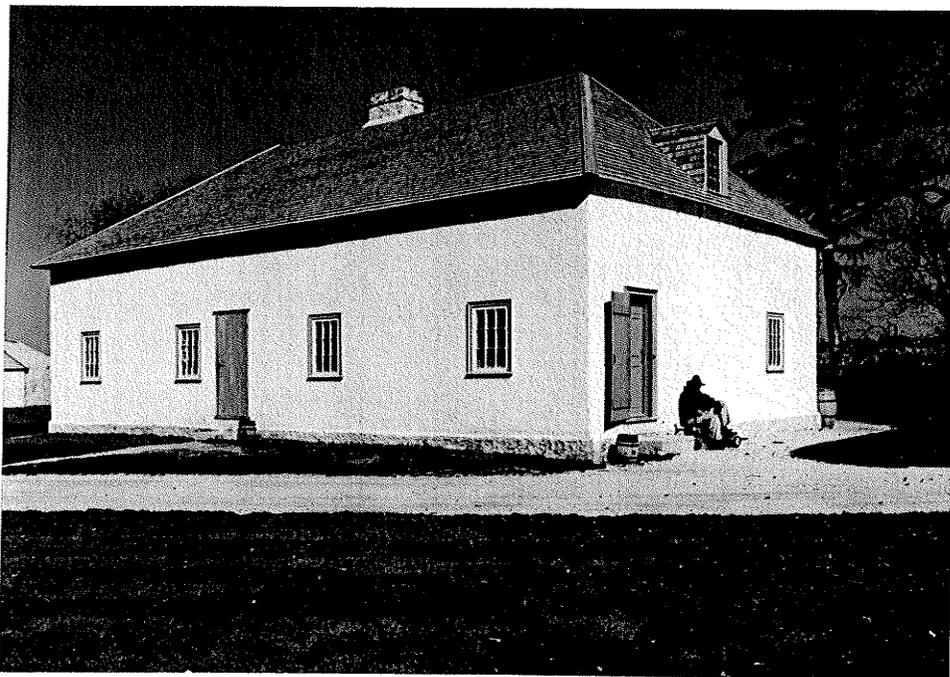


Fig. 11. Men's House, 1980 (Source: Lower Fort Garry Archives).

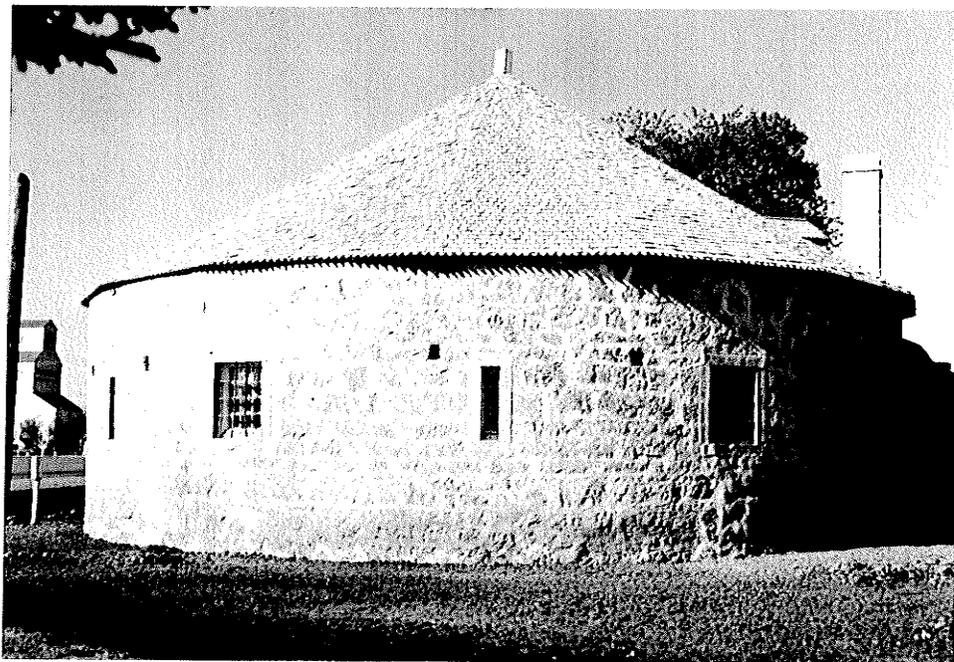


Fig. 12. South-West Bastion, 1969 (Source: Lower Fort Garry Archives).

12. Fraser House:

Fraser house was originally built outside of Lower Fort Garry on a lot in Kildonan Parish, in 1835. The Fraser house was then relocated to Lower Fort Garry in 1971 to replace the original farm manager's cottage, which was built in the 1840's (Figure 14). The animation and the furnishings at the house reflect the lifestyle and role of the Lillie family (the manager of the agriculture complex) during the 1850's. Architecturally, the cottage is a one and one-half storey, gable roofed structure with wooden Red River frame and shingled roof. Fraser house does not have a "heritage value"(7).

13. Ross Cottage:

Ross cottage was built in the 1840's. The cottage is a four room, single storey house constructed of irregular limestone on a stone foundation. The roof is shingled and hipped (Figure 15). It seems that the Ross cottage was built in connection with the establishment of the industrial complex near the creek. The cottage served as residence for John Black, the clerk (1846-1848), Chief Factor Alexander Christie and his wife (1848) and Chief Factor at Norway House Donald Ross and his wife (1851). The cottage was restored to its period appearance and function in 1973. At the present, the Ross cottage as a company residence is used in interpreting Theme Two(7).

14. Blacksmith's Shop:

The blacksmith's shop is a 1971 reconstructed structure one storey, gable roofed with a shingled roof and single chimney (Figure 16). Inside the shop, a large room contains the forge and bellows, a work bench and some tools. The original blacksmith's shop (the forge) was built in 1840's. It was replaced by a larger facility between 1857 and 1865 which was then destroyed in an explosion and fire in 1877. The blacksmith's shop is used to interpret Theme One.



Fig. 13. The Fort Walls and Bastions, 1980. (Source: Lower Fort Garry Archives).

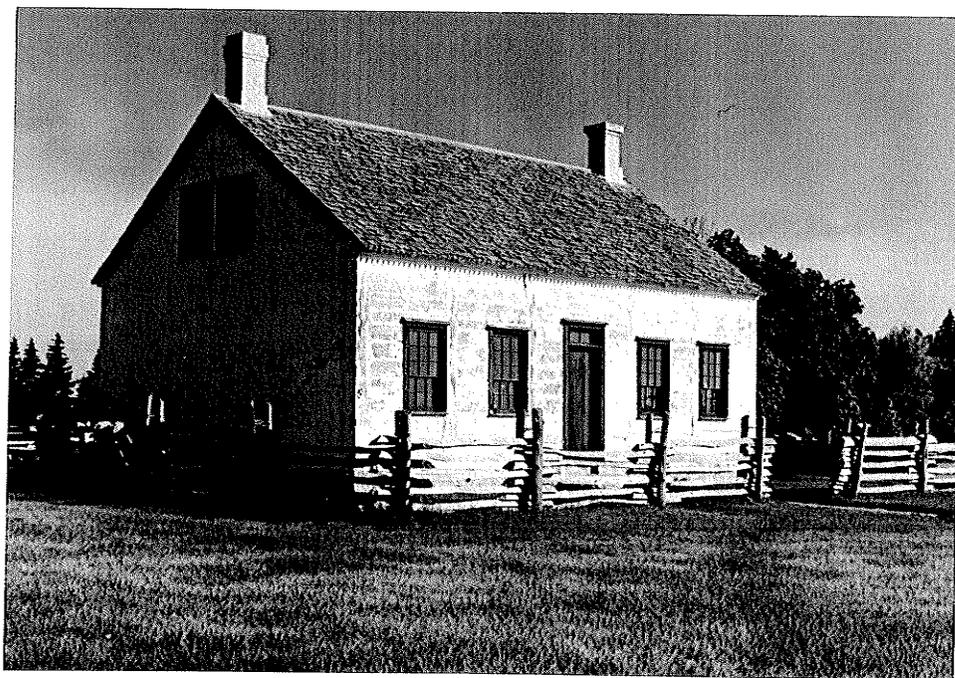


Fig. 14. Fraser House, 1972 (Source: Lower Fort Garry Archives).



Fig. 15. Ross Cottage, 1974 (Source: Lower Fort Garry Archives).



Fig.16. Blacksmith's Shop, 1972 (Source: Lower Fort Garry Archives).

PERIOD PLANT MATERIALS:

Table 3. List of flowers, vegetables, field crops, and fruit trees commonly available in Northern United States and Canada during the 1850-1865 period. Species and cultivars known for cultivation at Red River region are indicated in bold letters.

Common Name / Cultivar	Latin Name	Source [†]							
		1	2	3	4	5	6	7	8
Flowers:									
Adonis [†]	<i>Adonis aestivalis</i> L.	*						*	
Autumn A.	<i>A. autumnalis</i> L.						*		
African Marigold	<i>Tagetes erecta</i> L.	*			*		*		
Balsam (Impatiens)	<i>Impatiens holstii</i> L.	*					*		
	<i>I. balsamina</i> L.								
Bergamot [†]	<i>Monarda didyma</i> L.	*			*				
	<i>M. fistulosa</i> L.	*			*				
Bird's eye Gilia [†]	<i>Gilia tricolor</i> Benth.	*					*	*	
	<i>G. capitata</i> Dougl.						*		
California Poppy [†]	<i>Eschscholzia californica</i> Cham.	*					*	*	
Calliopsis [†]	<i>Coreopsis tinctoria</i> Nutt.								
	var. <i>atropurpurea</i> Hook	*			*	*	*	*	
Canary-Bird-Flower [†]	<i>Tropaeolum peregrinum</i> L.	*							
Candytuft [†]	<i>Iberis sempervirens</i> L.	*					*	*	

	<i>I. amara</i> L.		*		
	<i>I. umbellata</i> L.			*	
Castor Bean	<i>Ricinus communis</i> L.			*	
China Aster	<i>Callistephus chinensis</i> Ness.	*		*	*
Clarkia [†]	<i>Clarkia pulchella</i> Pursh.	*		*	*
	<i>C. elegans</i> Dugl.			*	*
Convolvulus	<i>Convolvulus major</i> Hort.			*	
(Morning glory)	<i>C. minor</i> Hort.	*		*	*
	<i>C. mauritanicus</i> Boiss.				
Corn Flower [†]	<i>Centaurea cyanus</i> L.	*	*	*	*
Double Poppy [†]	<i>Papaver rhoeas</i> L.	*	*	*	
Eternal Flower [†]	<i>Xeranthemum annuum</i> L.	*		*	
French Marigold	<i>Tagetes patula</i> L.	*	*	*	
French Pink(Pinks) [†]	<i>Dianthus caryophyllus</i> L.	*			*
	<i>Dianthus atrorubens</i> All.	*		*	
	<i>D. plumarius</i> L.		*	*	
Heart's Ease(Pansy)	<i>Viola tricolor</i> L.	*		*	*
Indian Pink	<i>Dianthus chinensis</i> L.	*			
Jacaranda [†] (Green Ebony)	<i>Jacaranda</i> sp. Juss.	*			
Larkspur	<i>Delphinium ajacis</i> L.	*	*	*	*
Lavatera [†]	<i>Lavatera arborea</i> L.	*		*	*
London Pride [†]	<i>Saxifraga umbrosa</i> L.				
	var. <i>primuloides</i> Hort.	*			
Love-in-a-mist	<i>Nigella damascena</i> L.	*	*	*	
Lupineh	<i>Lupinus</i> spp. L.	*		*	
Malope [†]	<i>Malope trifida</i> Cav.				
	var. <i>grandiflora</i> Paxt.	*		*	

Mallow†	<i>Malva zebrina</i> L.				*
	<i>M. sylvestris</i> L.	*	*		
Malva-Hollyhock†	<i>Althaea rosea</i> Cav.	*	*	*	*
Marsh Mallow†	<i>A. officinalis</i> L.	*		*	
Marvel of Peru†	<i>Mirabilis jalapa</i> L.	*	*		*
Mignonette†	<i>Reseda odorata</i> L.	*	*		*
Nasturtium	<i>Tropaeolum majus</i> L.	*		*	*
Petunia	<i>Petunia violacea</i> Lindl.	*			
	<i>P. nyctaginiflora</i> Juss.	*			
	<i>P. axillaris</i> BSP.	*			
Pot Marigold†	<i>Calendula officinalis</i> L.	*	*		*
Purslane	<i>Portulaca grandiflora</i> Hook	*			
Saffron†	<i>Crocus sativus</i> L.	*			
	<i>C. vernus, C. susianus</i>	*			
Scarlet Kotens†	<i>Calceonica</i>	*			
Sweet pea	<i>Lathyrus odoratus</i> L.	*	*	*	*
Sweet William	<i>Dianthus barbatus</i> L.	*	*	*	
Virginia Stock†	<i>Malcolmia maritima</i> R.Br.	*			
Stock	<i>Matthiola incana</i> R.Br.	*			*
White Jerusalem Star†	<i>Phlomis fruticosa</i> L.	*			
Zinnia (Youth-And-Old-Age)	<i>Zinnia peruviana</i> L.		*		
	<i>Z. elegans</i> Jacq.		*		
Vegetables:					
Asparagus	<i>Asparagus officinalis</i> L.				
Giant		*			
Large Green Purple Top				*	*
New Giant					*
Large White Dutch					*

Large White Reading				*
Improved Ghent				*
Beans	<i>Phaseolus</i>	<i>vulgaris</i>	L.	
<u>English Beans</u>				
Broad Windsor				* *
Early Mazagon				* * *
Early Long Pod				* *
Green Genoa				* *
German Wax	*			
Machie's Monarch Long-pod	*			* *
Royal Dwarf Cluster				* *
Sword Long Pod				* *
Toker and Broad Windsor	*			* *
<u>Kidney or French beans(Pole/ Running Beans)</u>				
Dun Dwarf				* *
Early White Caseknife		*		* *
French Soisson				* *
Fulmers				* *
London Horticultural				* *
Large Lima				* *
Large White	*			
Mohawk Bush		*		
Painted Lady Runners				* *
Parti Colored Cranberry				* *
Red Cranberry				* *
Scarlet Runner	*	*		* *
Sieva(Saba)/Small Lima				* *
Speckled Dwarf				* *

White Cranberry				*	
White					*
White Dutch Runners			*	*	
White Dutch Case Knife				*	
White Marrow		*			
White Pole		*			
Yellow Cranberry				*	
1001		*			
<u>Dwarf/String Beans</u>					
Dwarf Horticultural			*	*	
Early Mohawk			*	*	
Early Case knife			*	*	
Early China, Black eye			*	*	
Early China, Red eye			*		
Early Valentine			*	*	
Early/German Yellow Six Weeks	*		*	*	
Early Snap Shorts				*	
Early Nonpareil				*	
Early Rachael				*	
Early Half-Moon				*	
Large White Marrowfat			*	*	
Large White Kidney			*		
Refugee/Thousand to One			*	*	
Red Bush Cranberry		*	*	*	
Early Yellow Cranberry				*	
Early Quaker				*	
Royal Dwarf Kidney	*			*	
Turtle Soup			*	*	

White Cranberry Dwarf					*
Beets	<i>Beta vulgaris</i> L.				
Bassano		*	*		
Early Red Bassano				*	*
Early Blood Turnip		*		*	*
Early Deep Red					*
Early Turnip					*
Early Yellow/ Orange					*
Long Blood		*			*
Long Blood Red				*	*
Long Red Mangel Wurzel/Scarcity				*	*
Long Smooth Blood				*	
Red			*		
Swiss Chard				*	
Turnip Bassano		*			
Whytes' Deep Red				*	
White Sugar				*	*
Yellow Globe Mangel Wurtzel					*
Borecole(Kale)	<i>Brassica oleracea</i> L. var. <i>acephala</i> D.C.				*
Couve Tronchuda				*	
Curled			Δ		
Dwarf German				*	*
Green Curled Scotch				*	*
Sea Kale					*
Broccoli	<i>Brassica oleracea</i> var. <i>botrytis</i> L.				
Brimstone					*
Covent Garden					*
Early Purple Cape				*	*

Early Walcheren		*	*	
Early White			*	*
Early White Cape		*	*	
Hammond's New White Cape				*
London White			*	
Snow's Fine				*
Somer's Superb White			*	
Brussels sprout	<i>Brassica oleracea</i> var. <i>gemmifera</i> Zenker.			*
Cabbage	<i>Brassica oleracea</i> var. <i>capitata</i> L.			
Blood Red				*
Drumhead Savoy		*		*
Dwarf	*		*	
Early Adams		*		
Early Battersea		*	*	*
Early Drumhead		*		
Early Dutch		*		
Early Harvest			*	
Early Large York	*	*		
Early Low Dutch			*	
Early Premium Dutch			*	
Early Oxheart		*	*	
Early Sugarloaf		*	*	
Early York		*	*	*
Early Wakefield			*	
Fine Red Dutch	*	*	*	
Flat Dutch				*
Green Curled Savoy				*
Green Glazed		*	*	
Green Globe Savoy		*	*	

Large Bergen				*		
Large Cabbage Savoy					*	*
Large French Oxheart				*		
Large York						*
Large Scotch					*	
Late Drumhead				*	*	
Late Flat Dutch				*		
Mammoth Drumhead				*		
Marbelhead Mammoth					*	
Mason's extra Fine Drumhead				*	*	
Penton						*
Portugal/ Couve tronchuda					*	
Pomeranian				*	*	
Red		*				
Red Drumhead				*		
Shillings' Early Queen				*	*	
Stones' Early Spotboro						*
Stone Mason's Drumhead					*	
Superfine Early York				*		
Turnip Rootes/ Arabian					*	
Ulm Savoy					*	
Winnigstadt		*		*	*	
Yellow savoy				*		
Caraway [†]	<i>Carum carvi</i> L.	*	*			
Carrots	<i>Daucus carota</i> L. <i>sativa</i> Dc.					
Dutch Early Scarlet			*			
Early Horn		*		*	*	*

Early Short French			*	*	
French Intermediate				*	
Large Altringham			*	*	
Large Orange Belgian			*		
Large White Belgian			*		*
Long Blood				*	
Long Orange	*	*	*	*	
Long Yellow			*		
New Intermediate					*
Orange Belgian				*	
White Belgian				*	
Yellow Belgian					*
Cauliflower	<i>Brassica oleracea</i>	<i>var. botrytis</i> L.			Δ
Early Dutch			*	*	
Early London	*		*	*	
Early Paris	*		*	*	*
Early Walcheren			*	*	
Hovey's Early American			*		
Large Late				*	
Late Paris				*	
Late Walcheren				*	
Snow's Fine					
Waite's Alma				*	*
Celery	<i>Apium graveolens</i> L.	<i>var. dulce</i> Pers.			
Atwood's Pink			*		
Bailey's Superb				*	
Cole's Crystal White			*		*

Cole's Superb Red					*
Giant White					
Large Solid	*	*			
New Dwarf					*
New Silver Giant				*	
Red Solid				*	
Rose Colored Solid Giant					*
Seymour's White Solid				*	*
Shepherd's Giant Red					*
Soup Celery					*
White Solid	*			*	*
Coriander†		<i>Coriandrum sativum</i> L.			
Corn		<i>Zea mays</i> L.	*		
Adams Early					*
Brown(Field)					*
Common Sugar	*				
Darling's Early Sweet				*	
Early Canadian					*
Early Eight-Rowed					*
Early Jefferson					*
Early Sweet Sugar					*
Early White				*	
Evergreen Sweet				*	
Large Tuscarora				*	*
Large 12 Rowed Sweet				*	
Old Colony Sweet				*	
R.I.Premium(Field)				*	
Red Cob Sweet				*	

Southern White(Field)				*	
Stowell's Evergreen			*		*
Sweet/ Sugar Rareripec		*		*	
Cress	<i>Lipidium sativum L.</i>			*	
Fine Curled					* *
Broad-Leaved Garden				*	
Braod-Leaved Winter				*	
Cucumber	<i>Cucumis sativus L.</i>		*		*
Early Cluster				*	*
Early Frame				*	*
Early Short Prickly		*		*	*
Early Russian Prickling		*	*		
Early White Spined				*	*
Gherkins		*		*	*
Kenyon's Favorite		*		*	*
Green		*			
Long Green					*
Long Green Nursery					*
Long Green Prickly					*
Long Green Turkey				*	*
Long White Turkey					*
Long Prickly				*	
Manchester Prize				*	
Sion House				*	*
Synott's Early Frame					*
Walkers' Rambler					*
West India Gherkin					*
Egg Plant	<i>Solanum melongena L.</i>	*			*

	<i>var. esculentum</i> Nees.			
Long Purple			*	*
Large Round Purple			*	
Endive	<i>Cichorium endiva</i> L.			
Broad Leaved			*	
Fine Curled Moss			*	
Green Curled			*	*
White Curled			*	*
Garlic	<i>Allium sativum</i> L.			*
Leek	<i>Allium porrum</i> L.		*	
Large Musselburgh				*
London		*		*
Scotch			*	*
Lettuce	<i>Lactuca sativa</i> L.			
All Year Round		*		
Brown Dutch				*
Drumhead/Malta				*
Early Curled Silesia			*	*
Early Tennis-ball			*	
Early Turkey			*	
Green Cos.		*	*	*
Green Head/Saxony Cabbage				*
Hammersmith		*		
Hovey's Imperial Cape			*	
Imperial Cabbage			*	*
Ice Cos.				*
Ice Drumhead			*	
Large Drumhead				*

Magnum Bonum Cos.					*
Marsielless		*			
Palestine				*	
Paris Cos.				*	
Perry's Price Head	*				
Roman Brown					*
Royal Cape/ Cabbage				*	*
Royal/Grand Admiral					*
Royal White Cabbage					*
Simpson Early Curled		*			
Spotted Cos.					*
Tennis Ball		*			*
Waite's Large White Cos.					*
White Paris Cos.				*	*
White Silesian	*				*
White Cos.					
Muskmelon					
		<i>Cucumis melo L.</i>			
Beechwood				*	
Black Rock					*
Casaba	*				
Christiana				*	*
Few white	*				
Green Citron				*	*
Green Flesh		*			*
Hybrid Persian				*	
Large Musk				*	*
Minorca					*
Nutmeg				*	*
Persian				*	*

Pine Apple				*	*
Pomegranate				*	
Round Yellow cantaloupe				*	
Skillman's Netted				*	*
Victoria				*	
Yellow Cantaloupe					*
Mustard	<i>Brassica campestris</i> L.		*		
Black/Brown					*
Broad Leaved					*
White English		*			*
White London					*
Onion	<i>Allium cepa</i> L.				
Button Onions					*
Deptford			*		
Early Red		*			*
Italian Tripoli					*
L.R. Wethersfield		*			
Large Red					*
Large Yellow					*
Potato Onions					*
Strasburg			Δ		
Welsh			*		
White Lisbon					*
White Portugal		*			*
Yellow/ Silver-skin					*
Yellow Danvers					*
Parsley	<i>Petroselinum crispum</i> Nym.				
Curled		*	*		

Enfield Matchless				*
Mayatt's Garnishing				*
Moss Curled				*
Parsnip	<i>Pastinaca sativa</i> L.			
Hollow-Crowned		*		*
Long Dutch		*		
Peas	<i>Pisum sativum</i> L.			
Early Green		*		
Hogs Peas		*		
Prince Albert			*	
Round White peas		*		
White		*		
<u>English sorts</u>				
Bishop's Long Podded				*
Blue Prussian			*	
British Queen			*	
Burbidge's Eclipse			*	
Carters First Crop		*		
Champion of England		*	*	
Daniel O'Rourke				*
Defiance			*	
Dwarf Champion		*		
Dwarf Mammoth			*	
Dwarf Marrowfat			*	
Dwarf Sugar (edible podded)	<i>P. sativum</i> L. var. <i>macrocarpon</i> Ser.	*		*
Early Prize-taker				*
Eatable Pod Sugar Pea		*	*	
Eugene				*

Fairbearad's Champion of England					*
King of the Marrows					*
Knight's Dwarf Green Marrow					*
Knight's Dwarf White Marrow					*
Knight's Tall Marrow					*
Missouri Marrowfat					*
Thurston's Reliance					*
Tom Thumb			*		
pepper	<i>Capsicum annuum</i> L.				
Bull Nose			*		
Cayenne					*
Cherry					*
Long					*
Squares					*
Squash/Flat					*
Sweet Mountain					*
Sweet Spanish					*
Potato	<i>Solanum tuberosum</i> L.				
Early Rose			*		
Pumpkins	<i>Cucurbita pepo</i> L.				
Cheese					*
Large Connecticut Field			*		
Large Yellow			*		*
Mammoth					*
Nantucket					*
Old Cheese			*		
Yellow Field					*
Radish	<i>Raphanus sativus</i> L.				

Squash

Boston Marrow

Summer Crookneck

True Hubbard

Vegetable Marrow

White Bush Scallop

Winter Crook

Cucurbita pepo var. maxima Duch.

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*
* * *
* *
*

Thyme

Thymus vulgaris L., *T. serpyllum* L.

*

Tomato

Ferry's Imported

General Grant

Keyes Prolific

Large Red

Lycopersicon esculentum Mill

*
*
*
* *

Turnip

Garden Turnips

Early Six-weeks

Early Stone

Flat Dutch

Golden Ball

New Orange-jelly

Red American Stone

Summer Purple Top White Globe

Swedish

White

White Stone

Yellow Aberdeen

Brassica rapa L.

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Yellow Scotch		*		
Yellow Stone		*		
<u>Field Turnips(Stock feed)</u>				
London Swede				*
Marshal's Extra Fine Purple				*
Shamrock Swede				*
Stone/Stubble				*
Top Swede				*
Waite's Eclipse				*
White Globe				*
Yellow cantaloupe	<i>Cucumis melo</i> L. var. <i>cantalupensis</i> Naud.			
Water-cress	<i>Rorippa nasturtium aquaticum</i> Hayek	*		
Watermelon	<i>Citrullus vulgaris</i> Schrad.			
American Citron				*
Apple-seeded				*
Black Spanish				*
Large Round				*
Long Carolina				*
Long Island				*
Mountain Sprout			*	*
Mountain Striped				*
Mountain Sweet		*		
Orange		*		*
Peerless		*		
Fruits:				
Apple	<i>Malus</i> sp.L.	*		
Cherry	<i>Prunus</i> sp.L.	*		
Currant	<i>Ribes</i> sp.L.	*		
Plum	<i>Prunus</i> sp.L.	*		

Field Crops:

Barley	<i>Hordeum vulgare</i> L.	*		
Corn	<i>Zea mays</i> L.	*		
Early Sweet Sugar			*	*
Stowells Evergreen			*	*
Oat	<i>Avena sativa</i> L.	*		
Red / White Clover	<i>Trifolium pratense</i> L.		*	
Rye	<i>Secale cereale</i> L.		Δ	
Timothy	<i>Phleum pratense</i> L.		Δ	
Wheat	<i>Triticum aestivum</i> L.		*	

† No variety / cultivar could have been existed during this period(Prof. L.Lenz, personal communications)(32).

Δ Imported from England (33).

- † 1. List of flowers made up by Margaret J. Anderson on May 1852. These species were available in the Red River Settlement during 1850s(Cited in Thomas,1979)(9).
2. List of some vegetable seeds available in the Red River Settlement after 1850 (based on the seed requisition for William Lane; cited in Thomas, 1979)(9).
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APPENDIX 6

CANADIAN PARKS SERVICE OBJECTIVES FOR RESTORATION OF LOWER FORT GARRY NATIONAL HISTORIC SITE:

The Canadian Parks Service objectives for the development of Lower Fort Garry National Historic Site are described under the following headings (7):

- System objectives
- Regional integration objectives
- Marketing objectives
- Boundary definition objectives
- Historic resource preservation objectives
- Visitor service objectives
- Interpretation objectives
- Park operation objectives

The following are summary of the objectives derived from the above categories in relation to Lower Fort Garry landscape development:

1. To operate and maintain Lower Fort Garry National Historic Site as one of the most important historic sites in the Canadian Parks Services system commemorating the role of the Hudson's Bay Company in the Canadian fur trade during 19th century.
2. To integrate the development and operation of the site to take into account other external influences such as road and river access improvements.
3. To acquire by purchase, long-term lease or other agreement, only those additional lands which are indicated essential to fulfill the park's resource protection and commemoration.
4. To identify, preserve and manage the original historic resources at Lower Fort Garry, emphasizing the structures and archaeological resources related to the major period of commemoration; 1830-1875.
5. To identify and preserve historic landscape features in the park, and to recreate the period landscape(s) or portions thereof, where feasible.
6. To provide a contemporary zone for current park operational purposes, separated by landscape design techniques from the historic areas of the park. It is recognized that the contemporary zone may include archaeological remains that require protection.
7. To provide orientation information which promotes the park's location, services and visitor opportunities (the riverboat loading area requires careful consideration. The current location is having a detrimental impact upon historic resources at the mouth of the creek. Furthermore, it does not provide proper visitor orientation to the park and it offers no access for the mobility-impaired visitor).

8. To ensure that basic day-use requirements such as washrooms, refreshment needs and picnic facilities are provided at the park (perhaps a full scale period restaurant).
9. To provide adequate visitor pedestrian circulation system, including walkway, signs and building accessibility (The challenge with respect to pedestrian circulation is the need to provide an effective link from the orientation area at the visitor reception centre throughout the historic zone without any additional intrusions upon the landscape. The service road leading to the blacksmith shop area also requires careful evaluation with respect to its impact upon the interpretation program and historic landscape).
10. To provide for recreational opportunities which are complementary to the park.
11. To offer an interpretation program within the historic zone focusing specially upon the 1850-1865 period The recapitalization of the park's extant resources and landscape, curatorial furnishings, costume program and general site activities should be guided by this interpretative focus upon the 1850-1865 period.
12. To evaluate the special events and programs currently offered at Lower Fort Garry.

NATIVE VEGETATION IN MANITOBA:

Table 4. A Partial Listing of Aspen Parkland, Riverbottom Vegetation, Deciduous Oak Forest, and Marshland Vegetation in Manitoba: (Key species)*

Aspen Bluffs

1- Tree Stratum:

<i>Acer negundo</i> L.	Manitoba Maple
<i>Crataegus chrysocarpa</i> Ashe	Hawthorn
<i>Populus balsamifera</i> L.	Balsam Poplar
<i>P. tremuloides</i> Michx.	Aspen
<i>P. deltoides</i> Marsh.	Cottonwood
<i>Quercus macrocarpa</i> Michx.	Bur Oak
<i>Salix discolor</i> Muhl.	Pussy Willow

2- Shrub Stratum:

<i>Amelanchier alnifolia</i> Nutt.	Saskatoon Berry
<i>Aralia nudicaulis</i> L.	Sarsaparilla
<i>Carex vesicaria</i> L.	Sedge
<i>Cornus stolonifera</i> Michx.	Red-osier Dogwood
<i>Corylus americana</i> Walt.	American Hazelnut
<i>C. cornuta</i> Marsh.	Beaked Hazelnut
<i>Prunus nigra</i> Ait.	Wild Plum
<i>P. americana</i> Marsh.	Wild Plum
<i>P. virginiana</i> L.	Chokecherry
<i>Rosa blanda</i> Ait.	Wild Rose
<i>Rubus idaeus</i> L.	
var. <i>strigosus</i> (Michx) Maxim.	Wild Red Raspberry
<i>R. pubescens</i> Raf.	Dewberry
<i>Salix interior</i> Rowlee	Sandbar Willow
<i>S. petiolaris</i> Sm.	Willow
<i>Spiraea alba</i> DuRoi	Spiraea
<i>Viburnum trilobum</i> Marsh.	Highbush Cranberry

3- Herb Stratum:

<i>Actaea rubra</i> (Ait.) Wild.	Red Baneberry
<i>Arenaria lateriflora</i> L.	Blunt-leaved Sandwort
<i>Aster ciliolatus</i> Lindl.	
<i>Fragaria virginiana</i> Duchesne	Strawberry

<i>Lathyrus ochroleucus</i> Hook.	Pale Vetchling
<i>Rhus radicans</i> var. <i>rydbergii</i> (Small) Rehd.	
<i>Pyrola asarifolia</i> Michx.	Pink Winter Green
<i>Smilacina stellata</i> (L.)Desf.	False Solomon's-seal
<u>Grassland Species</u>	
<u>Tall Prairie Grass</u>	
<i>Agropyron</i> spp. L.	
<i>Allium stellatum</i> Fraser	Wild Onion
<i>Andropogon gerardi</i> Vitman	Big Bluestem
<i>A. scoparius</i> Michx.	Little Bluestem
<i>Anemone patens</i> L.	Prairie Crocus
<i>A. cylindrica</i> Gray.	Tumble Weed
<i>Artemisia ludoviciana</i> Nutt.	
<i>Aster laevis</i> L.	Smooth Aster
<i>Astragalus</i> spp. L.	Milk Vetch
<i>Elaeagnus commutata</i> Bernh.	Wolf Willow
<i>Galium triflorum</i> Michx.	
<i>Liatris ligulistylis</i> (Nels.)K.Schum.	Blazing Star
<i>Lilium philadelphicum</i> L.	Prairie Lily
<i>Maianthemum canadense</i> Desf. var. <i>interius</i> Fern.	False Lily of the Valley
<i>Petalostemum purpureum</i> (Vent)Rydb.	Prairie Clover
<i>Psoralea escularia</i> Pursh	Breadroot
<i>P. argophylla</i> Pursh	Silver Breadroot
<i>Rhus radicans</i> L.	Poison Ivy
<i>Rosa</i> spp.L.	Wild Rose
<i>Rudbeckia serotina</i> Nutt.	Brown-eyed Susan
<i>Smilacina stellata</i> (L.) Desf.	False Solomon's Seal
<i>Solidago canadensis</i> L.	Goldenrod
<i>S. nemoralis</i> Ait.	
<i>Stipa comata</i> Trin & Rupr.	Spear Grass
<i>Symphoricarpos occidentalis</i> Hook.	Western Snowberry
<u>Mixed Grass</u>	
<i>Agropyron cristatum</i> (L.) Gaertn.	Crested Wheatgrass
<i>Andropogon scoparius</i> Michx.	Little Bluestem
<i>Artemisia frigida</i> Willd.	Prairie Sage
<i>Bouteloua gracilis</i> (HBK) Lag.	Blue Grama
<i>Campanula rotundifolia</i> L.	Blue Bell

<i>Carex pensylvanica</i> Lam.	
<i>Cerastium arvense</i> L.	Field Chickweed
<i>Festuca</i> spp.L.	
<i>Juniperus horizontalis</i> Moench	Creeping Juniper
<i>Koeleria cristata</i> (L.) Pers.	June Grass
<i>Lithospermum canescens</i> (Michx.)Lehm.	Puccoon
<i>Poa pratensis</i> L.	Kentucky Bluegrass
<i>Potentilla anserina</i> L.	Silverweed
<i>Ranunculus cymbalaria</i> Pursh	Seaside Crowfoot
<i>Selaginella rupestris</i> (L.) Spring.	Spike Moss
<i>Sporobolus</i> spp.R.Br.	Dropseed

Riverbottom Vegetation

<i>Acer negundo</i> L.	Manitoba Maple
<i>Ambrosia trifida</i> L.	Buffalo-weed, Ragweed
<i>Amphicarpa bracteata</i> (L.) Fern.	Hog Peanut
<i>Arctium minus</i> (Hill) Bernh.	Burdock
<i>Aralia nudicaulis</i> L.	Wild Sarsaparilla
<i>Aster ciliolatus</i> Lindl.	Smooth Aster
<i>Cirsium arvense</i> L.	Thistle
<i>Cornus totonifera</i> Michx.	Red-osier Dogwood
<i>Echinocystis lobata</i> (Michx.) T & G	Wild Cucumber
<i>Fraxinus pennsylvanica</i> Marsh.	Green Ash
<i>Iva xanthifolia</i> Nutt.	Cocklebur
<i>Laportea canadensis</i> (L.) Wedd.	Wood Nettle
<i>Lappula echinata</i> Gilib.	Beggar's Tick
<i>Menispermum canadense</i> L.	Moonseed
<i>Parthenocissus</i> sp.Planch.	Virginia Creeper
<i>Populus deltoides</i> Marsh.	Cottonwood
<i>Rhus radicans</i> L.	Poison Ivy
<i>Matteuccia struthiopteris</i> (L.)Todaro	Ostrich Fern
<i>Salix amygdaloides</i> Anderss.	Peach-leaved Willow
<i>S. interior</i> Rowlee	Sandbar Willow
<i>Ulmus americana</i> L.	American Elm
<i>Urtica dioica</i> L.	Nettle
<i>Vicia americana</i> Muhl.	Vetch

Deciduous Oak Forests

1-Tree Statum:

<i>Fraxinus pennsylvanica</i> Marsh.	Green Ash
<i>Larix laricina</i> (DuRoi) K.Koch.	Tamarack
<i>Picea glauca</i> (Moench)Voss	White Spruce
<i>P. mariana</i> (Mill) BSP.	Black Spruce
<i>Populus balsamifera</i> L.	Balsam Poplar
<i>P. tremuloides</i> Michx.	Aspen
<i>Quercus macrocarpa</i> Michx.	Bur Oak
<i>Tilia americana</i> L.	Basswood
<i>Ulmus americana</i> L.	American Elm

2-Shrub Stratum:

<i>Amelanchier alnifolia</i> Nutt.	Saskatoon Berry
<i>Cornus stolonifera</i> Michx.	Red-osier Dogwood
<i>Corylus americana</i> Walt.	American Hazelnut
<i>C. cornuta</i> Marsh.	
<i>Prunus virginiana</i> L.	Chokecherry
<i>P. pensylvanica</i> L.f.	Pin-Cherry
<i>Rosa blanda</i> Ait.	Wild Rose
<i>Rubus idaeus</i> L.	
var. <i>strigosus</i> (Michx) Maxim.	Wild Red Raspberry
<i>Salix petiolaris</i> Sm.	Willow
<i>Viburnum trilobum</i> Marsh.	Highbush Cranberry
<i>V. rafinesquianum</i> Schultes	Downy Arrow-wood

Marshlands

<i>Alisma triviale</i> Pursh	Water-plantain
<i>Calamagrostis</i> spp. Adans.	Reed Grass
<i>Carex atherodes</i> Spreng.	Awmed Sedge
<i>Phragmites australis</i>	Common Reed
<i>Scirpus</i> spp.L.	Bulrush
<i>Scolocholoa festucacea</i> (Willd.) Link.	White-top Grass
<i>Sparganium</i> spp. L.	Bur Reed
<i>Typha latifolia</i> L.	Cat-tail

* The species list is adopted from various sources(17, 37, 48, 39, 40, 41) and revised by Dr. J.M. Shay (42).

APPENDIX 8**PRIORITIES AND PHASING OF PLAN IMPLEMENTATION:**

The landscape plan proposed for Lower Fort Garry is based on a number of assumptions, as follows:

1. It is assumed that implementation of the project will be phased over a time period of 10 or more years. Thus, the implementation of the plan can proceed as funding becomes available.
2. It is assumed that through further archaeological research over the next decade or more, additional information will be available for the complete restoration of the agricultural and industrial complexes.
3. It is assumed that with municipal government support, the housing development across the river can be controlled and appropriate measures taken to minimize the visual intrusions of this development into the period grounds.

Based on the above assumptions, the following priorities are addressed for staging the overall site development:

- Stage 1. Development of the recreational area as a complement to the existing historic site
- Stage 2. Development of the York boat area
- Stage 3. Restoration of the Fort grounds to their 1850-1865 expression
- Stage 4. Development of the agricultural complex
- Stage 5. Development of the industrial complex
- Stage 6. Development of the entry / parking lot
- Stage 7. Relocation and enhancement of the native encampment
- Stage 8. Development of the riverbank

For the purpose of implementing the proposed period landscape plan, a detailed schedule is provided in Table 5, considering the priorities outlined above.

-Restoration

- Development of the South Landing
- Re-establishment of the Native Grass
- Clearing & Preparation of the Creek Bed
- Landscape Furnishings

2- North of the Fort

- Historic Research
- Re-establishment of the Native Grass
- Construction of the Fences
- Agricultural Complex -Enhancement

-Animation

-Restoration

- Development of the Pathway
- Design & Construction of the North Landing

AREA 4

- Construction of the Barn
- Administration Centralization/Relocation
- Establishment of the Plant Nursery
- Screen Planting

AREA 5

- Establishment of the Hiking Trail
- Reforestation/ Stabilization of the Riverbank
- Site Furnishings

Landscape Maintenance

- Grassed Area
- Trees / Shrubs



APPENDIX 9

RECOMMENDATIONS FOR VEGETATION ESTABLISHMENT AND LANDSCAPE MAINTENANCE:**General:**

Developing a detailed vegetation establishment and landscape maintenance procedures is beyond the scope of this practicum. However, following is a brief guideline which can be used in establishing and managing the vegetation at the Lower Fort Garry site:

Maintenance of historic landscapes is an importance operation, and by necessity is a continuous process. Landscapes are unique in terms of preservation since they cannot be frozen in time. The nature of the plants as an essential ingredient of the landscape necessitates a continuous and sometimes rapid growth or change which means that, maintaining an historic landscape in an agreed state or in an agreed equilibrium, requires more labour than an ordinary landscape (4, 43). Therefore, since the principal material consists of the plants, the preservation of the landscape in an unchanged condition will involve both individual replacements whenever required and a long-term program of periodic renewal (4). Thus, care should also be taken to ensure that there is regular production of the plant varieties required for the site. In this regard, a plant nursery is proposed for the purpose of regenerating and producing plant species specified for the site. This is considered as an essential part of the plan since the sustained availability of the period plant material will be a critical component of the period landscape and will demand specific production and maintenance schemes. The potential sites for a nursery are indicated in Plates 9 and 10.

One aspect of historic landscape maintenance meriting mention is that, in the case of trees and shrubs, the idea of what is an acceptable state may have to be revised from time to time to accommodate their continuing development. The alternative is to establish a policy of periodic pruning or clearing and replanting at given intervals (1). Therefore, suitable educational provisions should be available for the training of persons such as gardeners or botanists (4).

Native Grass:

Reestablishment of native grass and its management is fundamental to the period landscape restoration, at Lower Fort Garry. The native grass not only brings the period appearance back to the site, but also reduces the maintenance costs such as irrigation, mowing, and fertilization. Native grass further requires lower initial installation costs and with a proper maintenance program, weed and disease control will be minimized. Native grass will also add richness to the site by attracting wildlife and related fauna.

Considering the maintenance issues related to the grassed areas at Lower Fort Gary (outlined in Section 6.3.1.1) and the existence of some noxious weed species at the site, reestablishment of native grass will require a well-studied and an appropriate plan to ensure a successful landscape restoration program. Various techniques can be employed in reestablishing a native grass in a site such as Lower Fort Garry. Following is a summary of different alternatives to deal with the present situation at Lower Fort Garry regarding the grassed areas both north and south of the Fort:

1. Complete removal of the existing grass and other herbaceous species through cultivation and

chemical weed control. Seeding and reestablishment of native grass takes place over the clean and weed-free black soil. In this method, the best results in a short period of time will be obtained. Further maintenance of the grassed area will include patterned burning every 2-3 years (44, 45).

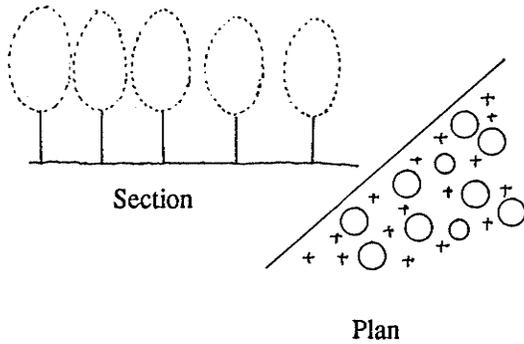
2. Complete burning of the existing grass for a minimum period of 3 years for the purpose of weed control and, drilling the native grass seed in the stubble. In this method regrowth of some noxious weed species is anticipated, and the reestablished grass may not be satisfactory in terms of uniform seed germination and appearance (44).
3. Mechanical control of the weed species such as Canada thistle, by periodic and patchy cutting of the grass to prevent flower stock initiation. This method requires extensive labor and time to control the weeds.
4. Periodic mowing of the entire grassed area to keep the weeds under control. Along the pathways, clumps of native prairie flowers can be transplanted for aesthetic purposes. This method will provide the least satisfactory results in terms of appearance, and the non-native species will not be eliminated totally.

Forested Areas:

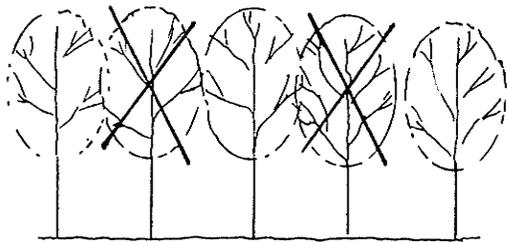
The restoration plan provided in Chapter 6 suggests reintroduction of "deciduous oak forest" south of the creek such as existed at the site prior to the establishment of the Fort. Considering the role of ecological factors such as drainage, flooding, fire, and animals in maintaining plant community structure, the "scientific" restoration of a forest cover (i.e. duplicating a native stand) does not seem possible. However, creating a forest cover to resemble the one that originally existed in the Lower Fort Garry area and capturing the "essence" of a deciduous forest (aesthetic restoration) seems feasible. For the purpose of reforestation, a managed succession approach is recommended (46). Initially, it is necessary to conduct a few "vegetation sampling" experiments in Winnipeg area which represent a typical undisturbed deciduous oak forest. The quantitative data for each species including relative density, dominance, and frequency (Importance Values) gathered from the experimental sites would be then used to determine the "key species", number of species per hectare, and caliper of the trees to be planted at the site. After planting the predetermined species (at random and /or in clumps- Figure 17) and upon canopy closure, further management includes thinning out of some pioneer species while retaining some shade. The procedure is then followed by planting intermediate or climax species in the case of random planting. If planted in clumps, natural plant invasion takes place over time in the open spaces between the clumps.

It is suggested that while the vegetation sampling experiments are being conducted, a plant nursery with a production scheme be set up to include the following major plant species. This will provide plant materials required for the initial reforestation of the site when the plan implementation begins: Basswood, Bur Oak, Chokecherry, Dogwood, Green Ash, Hawthorn, Hazelnut, Highbush Cranberry, Manitoba Maple, and Wild Plum (Appendix 7).

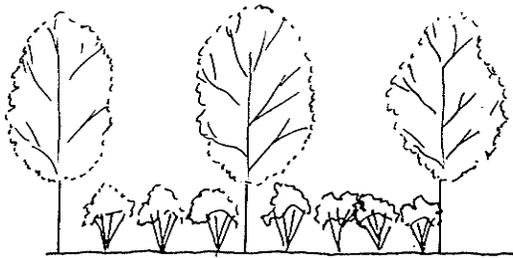
Tree Planting at Random



1-Plant pioneer or "key" species at random

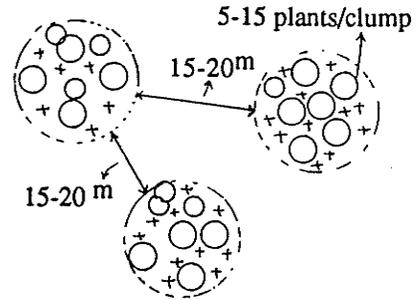


2- Upon canopy closure, thin out some of the pioneer species while retaining some shade.

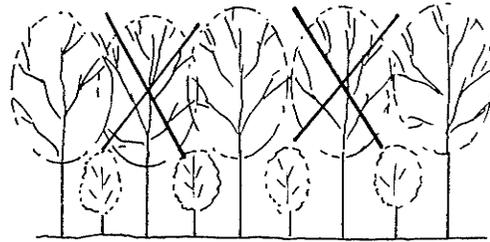


3- Plant intermediate species in between the pioneer species.

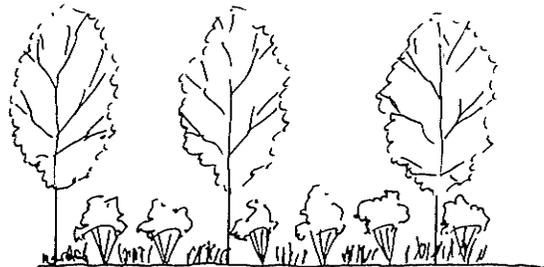
Tree Planting in Clumps



1-Plant pioneer or "key" species in clumps



2- Upon canopy closure, thin out some of the pioneer species while retaining some shade.



3- Natural plant invasion occurs in the open spaces between the clumps.

Fig. 17. Planting Techniques Proposed for Reforestation of the Contemporary Grounds at Lower Fort Garry.

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