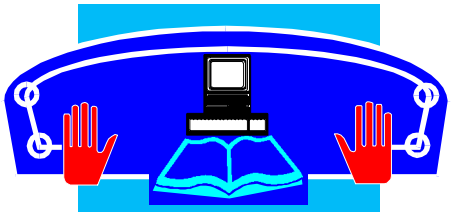

Blackstone Park Tourism Development Plan - Final Report

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BLACKSTONE PARK

TOURISM DEVELOPMENT PLAN

Prepared for

Government of the
Northwest Territories

FINAL REPORT
September 1981

Prepared by

Project Planning Associates Limited
Ferguson, Naylor, Simek Limited
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ACKNOWLEDGEMENTS

The Project Team, listed below, wishes to express its thanks to the people of Fort Liard, Nahanni Butte and Fort Simpson, the staff of Government of the Northwest Territories, staff of Parks Canada and all who helped develop the ideas and information presented in this report.

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1. INTRODUCTION AND SUMMARY

1.1 OBJECTIVES

The Government of the Northwest Territories (G.N.W.T.) through its Department of Economic Development and Tourism, and its Department of Public Works, wishes to construct a Territorial Park on the Liard Highway near the confluence of the Liard and Blackstone Rivers. The park is intended to be, to some extent, a new venture in Territorial P Its attractiveness to visitors must not rest solely on the park's natural qualities, but it is intended that tours of the area and a variety of interpretive programs be initiated which will attract visitors and entice them to remain in the area, possibly for several days. In addition, it is required that the development and operation of the park create substantial positive impacts on the local economy through new employment and concurrent spin-off benefits - all of which is to be achieved with minimum detrimental effects on the environmental quality of the site or the surrounding area. The natural charm of the area must be preserved and man-made intrusions must be carefully blended into the setting.

Because of its proximity to Nahanni National Park, Parks Canada has concurred that Blackstone Park should serve as a gateway to Nahanni. As such, Blackstone Park would contain Parks Canada reception and orientation facilities and services for Nahanni visitors. In addition, Parks Canada is considering relocating certain operational facilities from Nahanni Butte to Blackstone. A final decision on relocation can only be made after general agreement has been reached on park layout, operational considerations and the possible nature and extent of Parks Canada involvement. This planning study must therefore identify locational

and operational factors which might assist in decision making with respect to relocation.

Within these over-riding objectives, a development concept, architectural motif and staging plan is required, based on mapping of the environmental capabilities and construction suitability of the site, market analyses, and inventory of natural, archeological and cultural resources of the study area. Guidelines for the administration of the Park and a Park interpretive program are also to be provided. As a check on the validity of all proposals, the consultant has been asked to provide an evaluation of the probable effects of his recommendations on the natural and cultural resources of the area and the effects of his proposals on the economic and social welfare of the people in the vicinity.

1.2 APPROACH AND METHOD

A multi-disciplinary team of planners and designers undertook the project in early November 1980. The team, consisting of two engineers, two architects, a landscape architect, two planners and a management consultant worked from bases in Yellowknife and Fort Resolution. They examined the site in detail, although their findings were somewhat limited because the ground was snow covered and the river was frozen during the principal period of site investigation.

After meeting with local Parks Canada personnel to determine their requirements, a preliminary Development Concept was prepared and reviewed with Tourism and Park officials, Parks Canada personnel, and with local residents in Fort Liard, Nahanni Butte and Fort Simpson. On the basis of comments received and on-going discussions with Tourism and Parks officials, plans and an Interim

Report were prepared for further study by departments of the Territorial Government, Parks Canada and community groups. This final report has been revised to reflect comments received during this second round. of reviews.

The following sections summarize the main features of the plan and the report.

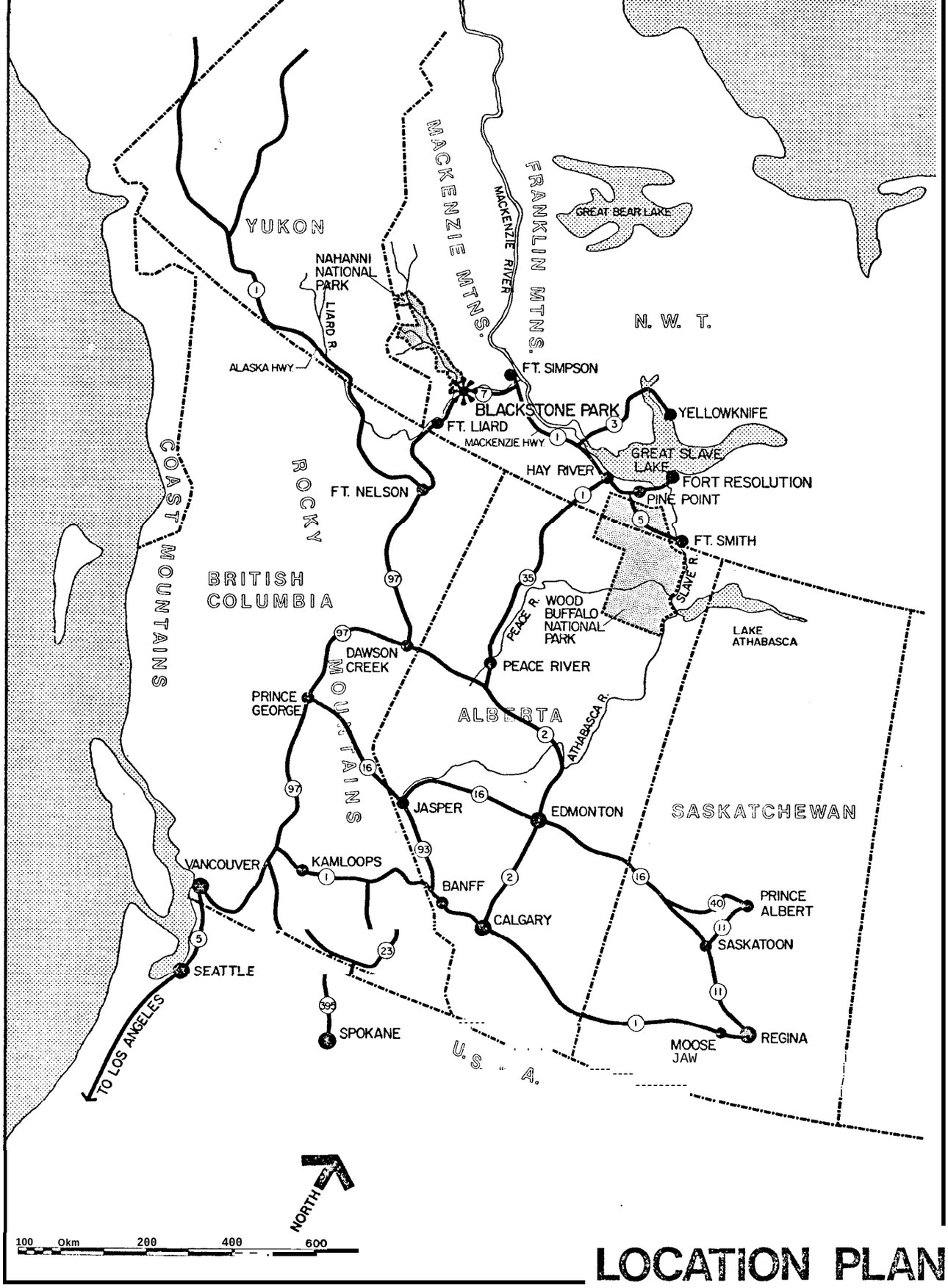
1.3 SUMMARY

1.3.1 Market Factors

The opening of the Liard Highway in 1983 will establish the first circle-tour route in the Northwest Territories. It will provide visitors with an alternative to remaining on the Alaska Highway and will provide more direct access from British Columbia and the Yukon. Blackstone Park will, for some time, be the only road-accessible camp ground on the Liard Highway and should capture a very high proportion of tourists using this route. The scenic appeal of the Liard River with the Nahanni Range, and Nahanni Butte in the background, plus proximity to Nahanni National Park, will provide added dimensions to the attractiveness of the site.

Furthermore, the international reputation of Nahanni as a World Heritage Site will provide Blackstone with an immediate profile which, through conventional advertising and promotion techniques would take years to build.

Over the three–month operating season, from June through August, the estimated number of visitors who will use the park is about 3,000 in 1983 and about 4,800 in 1987. These will include overnight visitors,



LOCATION PLAN

day-visitors from the nearby communities, day-visitors on bus tours through the area and about 250 Nahanni trippers who will use the Park as a starting and finishing point for visits to Nahanni National Park.

The principal market area for visitors to Blackstone is expected to include the Northwest Territories, Alberta, British Columbia, Ontario, the Yukon and north-western United States. However, as a principal gateway to the internationally famous Nahanni National Park, Blackstone is expected to attract some visitors from as far away as northern Europe.

Based on our analysis of markets and estimated user requirements, it is recommended that Park facilities, by 1987, include 33 serviced campsites, one group campsite for 4 to 10 tents, 5 primitive campsites and 10 cabins.

1.3.2 Characteristics of the Site

Blackstone Park, on the shores of the Liard River, will command impressive views of the mountains and Nahanni Butte. The vast wilderness character of this setting, its proximity to Nahanni National Park and its accessibility via the new Liard Highway will provide the Park with a sound basis for the successful development of tourism in the area. The site will be within two hours travel time, by the new highway, from Fort Liard, Check Point and Fort Simpson, where travelers will be able to purchase gasoline and camping supplies. Furthermore, there is an interesting economic and cultural background upon which tours and interpretive programs can be based. The story of the area ranges over thousands of years and includes the glaciers, the Slavey Indians, white trappers, gold mining, the river highway, the new Liard highway and the communities of Fort Liard, Fort Simpson and Nahanni Butte.

The site itself is covered with spruce mixed occasionally with poplar and birch. The locations most appropriate for tourist facilities are along the shore of Liard River and slope gently towards a low river bank from which visitors will be able to enjoy panoramic views of the river and the mountains,about 20 kilometers to the west.

Hunting, trapping and fishing continue to be important activities in the local economy. Fish are said to be abundant in the Liard tributaries and hunters' trap-lines surround the park on all sides.

1.3.3 Development Concept

The principal components of the development will be sited on the shore of the Liard River facing westerly towards Nahanni Butte. A loop road will connect to the Liard Highway at two points about 1,500 meters apart and campsites and cabins will be located near this road where it passes along the river edge. Visitors will check-in at the Registration/Information Centre at the west end of the River Road near the Park Supervisor's house.

From the waterfront, just west of the Registration Centre, visitors will be able to embark on boat tours and hiking trips assisted by guides operating from an Outfitters' Centre equipped with a dock for boats and float planes. Maintenance areas for the park and the outfitters will be nearby, as will a staff bunk-house and parking areas for vehicles left for long periods by Nahanni trippers.

Between the Registration/Information Centre and the river, a staff kitchen and an Interpretive Centre will be provided until a decision is reached on Parks Canada's relocation. Space has also been reserved in this vicinity for a possible permanent Interpretive Centre, although, at this time it has been agreed that this facility should be placed, permanently, near the Operations Centre at the north end of the Park.

Parks Canada facilities will be concentrated near the junction of River Road and North Road. This will be a relatively large installation for offices, Interpretive Centre, maintenance yard, dock, helicopter pad and housing, all of which are required to carry out management, control, maintenance and rescue operations with respect to Nahanni National Park. North Road will generally be reserved for Parks Canada access and for emergency purposes.

In addition to the principal Park components, the following additional facilities have been included in the development concept:

- a group of five roadside picnic sites on the Upper Blackstone River, adjacent to the highway;
- a lookout on the highway about 3 kilometers from the Blackstone River, from which visitors can see the mountains and Nahanni Butte;
- five primitive campsites, about one-and-a-half kilometers south-west of the main campground, for visitors who wish to experience a more isolated form of camping.

1.3.4 Engineering Services

It is proposed that the Operations Centre, Parks Canada housing, serviced campsites, Registration\

Information Centre, Park Supervisor's house, Outfitters ' Centre, G.N.W.T. maintenance facilities, interim kitchen and Interim Interpretive Centre be supplied with electricity from a 40 kilowatt generator located in the Operations Centre.

Liquid waste will be collected in holding tanks and disposed of in a lagoon near the junction of North Road and the Liard Highway.

Solid waste will probably be disposed of in a sanitary landfill site near the lagoon or in an incinerator at this location.
Each serviced campsite and cabin will be placed within about 90 meters of a wash-house equipped with drinking water, toilets, washbasins and showers.
Water will be taken from the Blackstone River or from wells, depending on the results of soil and water tests.

1.3.5 Design Motif

Logs are recommended as the ideal building material for Park facilities at Blackstone because logs are plentiful in the region. Construction in this medium will take maximum advantage of the skills of local builders and craftsmen, and, this medium, enhanced by glass and stone will allow designers to respond readily to visitors' images of rustic camping experiences in a frontier setting.

Simple, buildings which blend with the landscape and which are comprised of low horizontal panels are proposed, and it is recommended that modular approaches be included to allow for expansion. All

tables, benches, litterbins and signs will be designed in a harmonious and consistent style in order to unify all built elements.

Because of the sloping terrain, terracing will be required in the developed areas. Sites for campsites and buildings will thus have special potentials which should be carefully exploited by architects, landscape architects and engineers in order to take advantage of, the majestic views which are available.

1.3.6 Interpretive Program

Five themes have been identified as the basis for tours, displays and special programs designed to capture visitor interest, to persuade tourists to prolong their stay, and to encourage people to promote the area among their friends at home. The recommended themes for presentation in the Interpretive Centre, in brochures and tours include:

Physiography and Geology of the Region;✓
Wildlife and Vegetation;✓
Climate, Astronomy and the Seasons;
Human History;
Economic Development, and
the Northwest Frontier./

The Interpretive Centre with its displays, projection room and reading room will play a key role in revealing these aspects of the north to visitors. Guides and outfitters should be selected and trained to explain and discuss this very broad range of subjects as they lead visitors on the various land and water trips through the area. People with special knowledge and experience should be invited, from time to time, to

further stimulate visitors through discussion and *storytelling. Actual demonstrations and partici-pation in operating scows, panning for gold, preparing a pelt, building a canoe, etc. should be included in the program to bring it alive for people of all ages.

1.3.7 Capital Costs and Staging

The estimated cost, in 1980 constant dollars, to develop the Park, as described in the Development Concept, is about $1.2 million. It is recommended that plans be made to open the Park in June 1983 when the Liard Highway is scheduled to open, and that expenditures be made as follows in order to be ready for the opening (Figures are in 1980 constant dollars):

REQUESTED CAPITAL Estimates

1981:	$ 402,300.
1982:	398,000.
1983:	306,700.
1984:	64,900.
Total	$1,171,900.

1.3.8 Operational Guidelines

A small seasonal staff of five people will be required to operate the G.N.W.T. facilities at the Park. To ensure that the operation is closely controlled and managed in strict conformance with G.N.W.T. park policies, it is recommended that this staff be employees of the Department of Economic Development and Tourism, hired on a seasonal contract basis. It is proposed that the group be headed by a Park Supervisor* who will reside at the Park for five to six months of the year, and who will report to the Office of Tourism and Parks in Fort Simpson.

*This may have to be full time

It is proposed that three outfitter concessions be awarded, two for Nahanni National Park and one for the Liard River, Nahanni Butte and the environs of Blackstone Park. Space in the Outfitters' Centre would be leased to the outfitters on a seasonal basis.

There would be significant advantages to tourists and Nahanni trippers if Parks Canada were to locate at Blackstone Park. Tourists would be able to enjoy the excitement of Parks Canada shore operations and of trippers departing for, and returning from, Nahanni National Park. Furthermore, with both governments participating in the development, cooperative programs and shared facilities would not only be more cost-efficient, but would produce a very impressive tourism impact. And, from the point of view of Nahanni trippers, the Liard Highway would greatly facilitate access to the Park and to Nahanni outfitters.

The difficulties to be overcome in the proposed joint operation may include reaching agreement on the final location of facilities, cost sharing arrangements, and long-term working together on a day-to-day basis at the site. Well-established -joint policies and carefully selected site staff will be required if harmonious on-site working relationships are to be achieved. Everyone involved in the project will have to be committed. to serving the interests and welfare of tourists and trippers; and to creating an environment that brings out the full potential of the Blackstone/ Nahanni experience.

To ensure that maximum benefits will be derived from planning and development at Blackstone, a definite decision should be reached, at the earliest possible time, on whether any or all of Parks Canada facilities or functions should be relocated from Nahanni Butte to Blackstone. Until these decisions have been reached,

it will be extremely difficult to plan and design the park in an efficient and economical manner.

1.3.9 Economic Impact

User fees taken at the Registration Centre are expected to be insufficient to cover annual operating costs. Although there will be an estimated operating deficit ranging from about **$20,000** in 1983 to about $14,000 in 1987, the development of Blackstone Park and its auxiliary activities is expected to have a substantial positive economic impact on residents in the areas of Fort Simpson, Fort Liard and Nahanni Butte. During the period of construction, about fifty percent of all development costs are expected to accrue directly to the local people. This will amount to about $600,000 over the years 1981 to 1984 if the recommended staging plan is followed. This will represent about 4,500 man-days of local employment per year during the first three years of development.

When the Park opens, between 1,000 and 1,300 additional man-days of work will be required to operate the Park each year. This will include four Park staff (680 to 690 man-days per year), outfitters (205 to 340 man-days per year), and craftsmen in Nahanni Butte to make the arts and crafts items sold in the Butte and at the Park (160 to 260 man-days per year). In addition, some spin-off employment will undoubtedly be generated as a result of this new economic activity in the lower Liard Valley.

1.3.10 Social Impact

The principal social impact attributable to Park development at Blackstone will arise from new income in the area. The greatest effects will occur during 1983 and 1984 when construction and operation, together,

will provide over 5,000 man-days of work per season. That will be the equivalent of about 38 people working five days a week for six months. When construction has been completed, annual employment will be the equivalent of about thirteen people working five-days a week for four months (about 1100 man days).

During construction, a camp will probably have to be established at, or near, the site until Park buildings are sufficiently advanced to be used by construction workers. When construction has been completed, a small staff of five to ten people, including outfitters who will be at the Park between trips only, will reside at the Park during the tourist season.

If Parks Canada establish an operations base at Blackstone, up to five full-time employees could reside at the Park. These would be augmented by about seven seasonal staff who would probably commute to nearby Communities on a weekly or hi-weekly basis.

1.3.11 Environmental Impact

It is anticipated that any tendency for commercial development or settlement to occur in the vicinity of Blackstone Park will be halted by current Territorial Development Policy which will prohibit such development except at Fort Liard and Check Point. Additional protection should be provided along the highway through the park, by establishing a buffer zone on both sides of the highway, in which development or alteration of the landscape could not proceed without approval from GNWT, local communities and Dene bands.

Within the site, considerable clearing of bush will be required for buildings, roads and campsites, and the site will have to be terraced to create level areas. All of this work will be carried out under the direction of landscape architects, architects and engineers who understand the importance of trees, vegetation, ground cover and siting to the full enjoyment of northern park areas.

A waste disposal area will be established in a remote part of the Park where it will not pollute streams or the Liard River. Furthermore the area will be fenced and solid waste will be covered or burned so that animals will not be attracted to the site.

2.0 MARKET POTENTIALS

2.1 SETTING AND REGIONAL CONTEXT

The proposed site for Blackstone Park is at the confluence of the Blackstone and Liard Rivers. Road access will be possible by way of the Liard Highway, presently under construction and scheduled for completion in 1983. Entrance to the park is midway between Fort Liard and the intersection of the Mackenzie and the Liard Highways, a distance of approximately 200 kilometres. The opening of the Liard Highway will provide the Territories with its first potential circle-tour route connecting north-eastern British Columbia and northern Alberta with the south-west area of the Northwest Territories (Figure 1).

The communities within the Territories closest to the proposed park will be Nahanni Butte (approximately 30 air kilometres to the north-west) Fort Liard (105 kilometres to the south by road) and Fort Simpson (approximately 145 kilometres to the north-east by road). The southernmost point of Nahanni National Park is approximately 40 air kilometres to the west. The following table indicates the distance from Blackstone Park to important markets:

Edmonton	1,800 km.
Vancouver	3,140 km.
Minneapolis	3,890 km.
Los Angeles	4,770 km.

Blackstone Park will, for some time, be the only road-accessible campground on the Liard Highway between the British Columbia border and Check Point at the intersection with the Mackenzie Highway; a distance of

almost 250 kilometres. For tourists entering the Northwest Territories by way of the Mackenzie Highway, opportunities for overnight camping will be provided at only four locations directly enroute to Blackstone River. Detours into Hay River, Fort Providence or Fort Smith will provide four additional campgrounds. The campgrounds in closest proximity to Blackstone Park are listed in Table 2.1.

2.2 MARKET APPEAL

Few parks accessible by road in the Northwest Territories will have the advantages of Blackstone Park. As the only campground on the Liard Highway, Blackstone should capture a very high proportion of tourists using this route. The scenic appeal of the Liard River with the Butte in the background will provide an added dimension to increasing demand. Proximity to Nahanni National Park, classified by UNESCO as a World Heritage Site, is particularly advantageous. Blackstone Park is the closest road access point for tourists wishing to visit either Nahanni National Park or Nahanni Butte. Planned tours along the Liard River to Nahanni Butte and to the National Park will add to the attraction of the park as an overnight and day-use destination.

The opening of the Liard Highway in 1983 will establish the first circle tour route for the Northwest Territories. In addition, it will provide tourists with an alternative to remaining on the Alaska Highway and will provide more direct access for western markets, most notably, British Columbia and the Yukon.

TABLE 2.1 CAMPGROUNDS I

Campground	Jurisdiction	Nearest Highway	Number of Campsites
60th Parallel	Territorial Government	1	12
Louise Falls	Territorial Government	1	18
Lady Evelyn Falls	Territorial Government	1	15
Whittaker Falls	Territorial Government	1	" 5
Paradise Gardens	Privately-Owned	2	15
Hay River	Territorial Government	2	22
Fort Providence	Territorial Government	3	30
Fort Simpson	(Federal Government) Territorial Locally Operated	1	33

* Facility on site

Source: Explorers' Guide '80

2.3 PROJECTED VISITATION LEVELS

2.3.1 Overnight Visitors

We have projected that 1,035 user groups will stay overnight at Blackstone River during the initial operating season. Approximately 900 of these groups will use the campground as an overnight destination for the duration of their stay in the area. The remaining 135 user groups are expected to use Blackstone as their accommodation at the beginning and/or end of a trip to Nahanni National Park. The total number of user groups, including the Nahanni campers, is projected to grow each year and should reach 1,615 by the end of the fifth year of operation (Table 2.2).

Over the three-month operating season from June through August, the average number of user groups per night will increase from approximately 11 in 1983 to approximately 18 in 1987. However, we expect the actual user pattern to peak on weekends, with the heaviest concentration occuring from mid-June until the end of July.

Typical of the overall camper profile for the Territories, facility use at Blackstone River will be dominated by recreational vehicle campers and campers preferring serviced campsites. We have projected the following proportional split of facility use at the Blackstone River sites:

serviced site	63%
cabin	18%
group site	10%
primitive site	9%

It has been assumed that bus-tour groups will be accommodated in Fort Liard, Check Point or Fort Simpson, and that they will visit the park as day users only.

TABLE 2.2 USER ESTIMATES

Year	User Groups Per Year (1)(2)				Overnight Accommodation			
	Overnight	Day-Use	Bus	Total	Serviced	Primitive	Cabin	Group
1983	1035	45	5	1085	650	90	185	110
1984	1140	50	6	1196	715	100	210	115
1985	1265	55	8	1328	795	120	230	120
1986	1425	60	10	1495	895	140	265	125
1987	1615	65	11	1691	1020	165	300	130

TABLE 2.3 ORIGIN OF VISITORS

Year	User Group(1) Per Year	Total Visitors(2)	Market Area(3)		
			Canada	United States	Overseas
			%	%	%
1983	1085	3036	80	20	Less than 1
1984	1196	3360	80	20	Less than 1
1985	1328	3760	80	19	1
1986	1495	4258	80	19	Less than 2
1987	1691	4820	80	19	Less than 2

(1) It is assumed that the operational season for the first five years will be from June through August. There is potential for growth in the shoulder season, particularly in early September.

(2) Available statistics indicate that the average user group is 2.8 persons. In the case of group camp sites, an average of 2.0 persons per site has been assumed. Bus tour groups have been assumed to contain 20 persons.

(3) Despite increased energy costs, the opening of the Liard Highway will provide the opportunity for a circle tour route for Alaska Highway Tourists (U.S.) and MacKenzie Highway Tourists (Canadian) which will dampen the decrease in U.S. visitation. Close proximity to a "wilderness experience" will appeal to overseas tourists, e.g. West Germany.

Proximity to the Alaska Highway, on which the majority of tourists drive recreational vehicles, should help Blackstone Park enjoy a high proportion of serviced campsite use despite the forecast increases in energy cost. While the proportion of serviced campsite use is expected to remain stable over the first five years of operation, changes are expected in the use of other facility types. Year five should see 63% of the user groups staying at serviced sites; 19% in cabins; 10% at primitive sites and 8% at the group sites. We have assumed that by 1987 the number of overnight visitors to Nahanni National Park will be restricted, and based on the assumption that 80% of the Nahanni-bound campers using the Blackstone Park will use group sites, we have projected a reduction in the overall percentage of group campsite use from year one through year five.

2.3.2 Day-Use Visitors

Day-Use visitors may be expected to visit the park to enjoy the views, the Interpretive Centre, hiking trails and one-day boat tours on the Liard River and to Nahanni Butte; they will not remain overnight in the park.

The number of day-use visitors at Blackstone Park will be relatively small in comparison with the number of overnight tourists. The population from which the majority of day-use visitation might be drawn is distant and small. The Statistics Section of the Department of Planning and Program Evaluation indicates that the 1978 population of Fort Liard was 325, Fort Simpson 1,083 and Nahanni Butte 96. Tourists

driving on the Liard Highway and intending to spend the night in Fort Liard, Fort Simpson or possibly Hay River are expected to comprise the remainder of the day use visitors. We have projected that approximately 45 user groups and five buses of 20 passengers each, will spend part of a day within the park during the first operating season. The five year growth pattern will bring these totals to approximately 65 user groups and 11 bus tour groups by 1987.

2.4 MARKET AREA

The Canadian market is expected to dominate user groups remaining overnight at the park. The United States and especially the overseas market will be much less important contributors to the total number of visitors seeking overnight accommodation. Within the Canadian market, the largest number of visitors will be residents of the Northwest Territories, followed by Alberta, British Columbia, Ontario and the Yukon. The opening of the Liard Highway should increase the number of visitors from British Columbia, the Yukon and Alaska.

Residents of states bordering British Columbia and Alberta are expected to dominate the United States market. As the Northwest Territories have traditionally had a special appeal for residents of the northern mid-western states, the opening of Blackstone Park should strengthen this market.

Access to Nahanni National Park with its international reputation for containing outstanding examples of the major stages of the earth's evolutionary history,

significant on-going geological processes, scenery and white water canoeing,will attract overnight visitors to Blackstone from distant markets. The Northwest Territories and Alberta, however, will still provide the overwhelming share of tourists. The perceived "wilderness experience" associated with Blackstone will be advantageous in attracting the overseas market, especially those from West Germany and the Scandinavian countries.

We do not anticipate any major shifts in market shares in the first five years of operation. Proximity to the Alaska Highway should provide the park with an opportunity to capture some Canadian and American tourists on their trips to or from the Yukon and Alaska.

2.5 OVERNIGHT ACCOMMODATION REQUIREMENTS

The numbers of campsites and cabins which will be required to provide the estimated overnight accommodation in 1987 are: 33 serviced campsites, 5 primitive campsites, 1 group campsite for 4 to 10 tents in a group, and 10 cabins (Table 2.4). These quantities have been taken as the basis for the first five years of park development. Expansion beyond these quantities has been provided for in the Development Concept (Figure 4).

TABLE 2.4 OVERNIGHT ACCOMMODATION REQUIREMENTS

	Accommodation	Total Uses Per Year(1)	Average Uses Per Day(2)	Design Quantity(3)
1983	Serviced Site	650	7.5	22
	Primitive Site	90	0.98	3
	Group Site(4)	110(tents)	1.2	4(tents)
	Cabin	185	2.0	6
		1035 (Tourists: 900; Nahanni trippers: 135)		
1987	Serviced Site	1020	11.1	33
	Primitive Site	165	1.8	5
	Group Site	130(tents)	1.4	5 (tents)
	Cabin	300	3.3	10
		1615 (Tourists: 1450; Nahanni trippers: 165)		

(1) From Table 2.2

(2) Assumes the tourist season is 92 days June, July, August'.

(3) Three times "average uses per day" to allow for peaking on holidays and weekends; figures are rounded.

(4) Group sites are primarily for Nahanni trippers and allow for 4 to 10 tents in a group.

3.0 THE SITE AND ITS ENVIRONS

3.1 BACKGROUND

Blackstone Park, on the shores of the Liard River, will command impressive views of the Nahanni and Liard Ranges and Nahanni Butte. After crossing the lowlands the vastness and majesty of these mountain ranges will have a striking impact on visitors.

The area is thought to have been occupied by man for at least 8,000 to 10,000 years, and the general route of the present Liard Highway was probably an aboriginal trail. Since the early 1800's voyageurs, traders and transporters between Fort Liard and Fort Simpson have used the Liard River as a river highway.

Completion of the Liard Highway for year-round use will undoubtedly shift a significant amount of activity and economic development towards the Liard Valley region. Tourism potential for the area is high, particularly with improved access to Nahanni National Park. The vast wilderness character of the setting with its natural and cultural features provides an excellent basis for the development of tourism in the area.

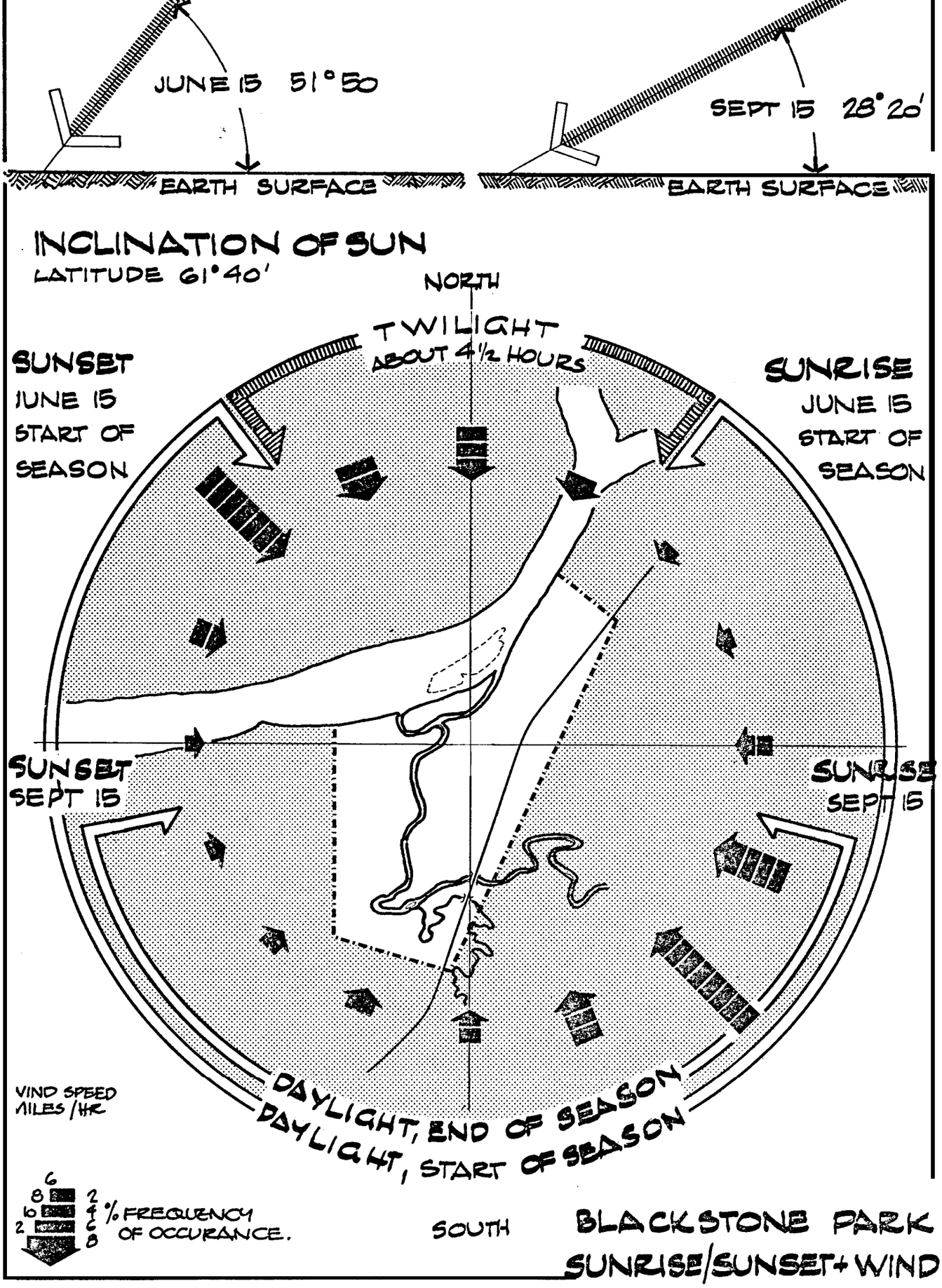
3.2 THE PEOPLE AND THE ECONOMY

The mouth of the Blackstone River is considered by some to be of archaeological significance, primarily because the junctions of rivers and streams were used as settlement sites by early man. However, no specific finds have been made in this area.

The Slave Indians, the major cultural group in the vicinity, are the largest Athapascan linguistic group in the Northwest Territories. The Slaves, or Slaveys, so named by the English and French during the fur trade era, are the aboriginal residents of the territory between Great Slave Lake and the Rocky Mountains including the lower Liard River Valley and the present settlement areas of Fort Simpson and Nahanni Butte.

In more recent times cabins have been built by trappers along the Liard and some are still in use. Edwin Lindberg's place is an unusual example of an early cabinsite redeveloped into a fine modern camp in the log motif. Other long-time residents of the Liard River Valley, such as Dick Turner, whose first cabin was approximately 70 kilometres downstream from Edwin Lindberg's, has written fascinating accounts of trapping, the search for gold in the Liard River area, and legends of the Nahanni.

Nahanni Butte, the closest settlement to Blackstone Park is located near the base of Nahanni Butte “mountain” on the South Nahanni River. This Slavey community, with a population of less than one hundred residents, is the last community which visitors see before venturing into the south entrance of the 200 kilometre-long Nahanni National park. The economy of the settlement is centred on hunting, fishing, trapping and more recently, guide services for tourists. Nahanni Butte is picturesque and thought by some to be one of the most scenic communities in the Northwest Territories.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START OF
SEASON
SUNSET
SEPT 15
SUNRISE
SEPT 15
VIND SPEED
MILES/HR
DAYLIGHT, END OF SEASON
DAYLIGHT, START OF SEASON
6
8
2
4
6
2
8
% FREQUENCY
OF OCCURANCE.
SOUTH
BLACKSTONE PARK
SUNRISE/SUNSET + WIND

KF JAN. 81

3.3 CONSTRUCTION SUITABILITY

3.3.1 Geology and Soils

Sandstone and shale bedrock in the area of Blackstone Park is overlain by glacial till deposited by the laurentide ice sheet. During the early stages of deglaciation, the junction of the Liard and MacKenzie Rivers was blocked by ice, and a glacial lake was formed in the Liard Valley. Further ice retreat formed Glacial Lake McConnell into which the Liard River emptied. As the lake level retreated the Liard River formed its present valley.

The surface geology of the park area consists of abandoned flood plains. Soil in the north section of the Parkis loam, while near the Blackstone River alluvial deposits of gravel are prevalent. The loam is drainable, but occasionally old organic deposits form an impermeable layer. In these areas stagnant water may be present. Surface drainage will have to be provided from these areas.

Generally, foundations for larger buildings should consist of driven or drilled piles while foundations for smaller buildings can be constructed on gravel pads. Detailed soil investigations must be undertaken in all areas where buildings or roads are proposed, before design of these elements can proceed.

For roads and gravel pad construction, there is a suitable source of gravel on the park site near the Blackstone River and west of the Highway (Figure 2). It is proposed that about 60,000 cubic metres of gravel be removed and that the excavation be carefully rehabilitated after extraction.

3.3.2 Clearing for Construction

The trees which will be felled to clear areas for roads or camp sites will not be of a sufficient size for practical use in building construction. Furthermore a specific objective of the clearing operation should be to preserve as many mature trees as possible. Therefore, large logs required for major buildings should be obtained from other locations. Trees which are cut on site should be stockpiled for firewood.

3.3.3 Stone for Construction

There appear to be sufficient quantities of river stone along the Liard River to provide material for retaining or foundation walls. During the design stage, a more accurate estimate of the supply, and sub-surface information on frost-susceptibility of the soil, will enable designers to determine if the local stone is appropriate for this application.

3.3.4 Water Levels

There is very little data available on the magnitude of flooding in this section of the Liard River. The river has been known to rise several feet in a few hours as a result of torrential rains in the mountains. However, most flooding is caused by ice jamming, and ice jams in this wide, straight section of the river is improbable. TWO cabins, one within the park area and one about 2½ kilometres downstream from the park have been at their present locations for over 50 years without any flood damage. It therefore appears that buildings located on the first terrace, (approximate elevation 115 to 120 metres) will be reasonably safe from the danger of flooding.

The erosion of the river bank is insignificant below the junction with the Blackstone River. However, at the junction there is apparent, active erosion. Buildings required near this location should be carefully located away from the eroding river edge.

3.4 CLIMATE, VEGETATION AND VIEWS

Blackstone Park and the lower Liard River Valley are located in the MacKenzie Basin northern continental climatic zone. The summers are similar to those of the north central prairie region of Canada, but somewhat cooler and with long bright summer days and minimal rainfall. Figure 2.1 “Sunset, Sunrise and Wind” indicates the inclination of the sun at this northern latitude, the time of sunset and sunrise, and the frequency of occurence and direction of winds for the summer tourist season. The sun is never directly overhead during the summer, and by September, the inclination is approximately 28 degrees. The long hours of sunlight, approximately 19.5 hours, and short twilight nights during the summer, contrast sharply with the shorter days of the fall. Prevailing winds are from the northwest and southwest throughout the tourist season.

Vegetation in the Liard River Valley is comprised of forest and muskeg. Blackstone Park is covered primarily by white and black spruce with mixed deciduous trees, mainly birch and poplar. The majority of the forest types are regrowth vegetation originating after the fires in the early 1940’s.

The most dramatic views in Blackstone Park are along the length of the fast-flowing Liard River and westerly to the Liard and Nahanni Ranges. The first impression of these mountains is captivating. Visitors are drawn westward by their rugged natural beauty.

3.5 FISH AND WILDLIFE

The Liard River Valley has abundant fish and wildlife. The meandering streams and gravel banks provide excellent habitat for fish; and mammals thrive in the climatic shadow of the MacKenzie Mountains. Hunting, trapping and fishing continue to be important activities for the local people. Figure 2 lists the animals and fish which frequent the area.

4.0 DEVELOPMENT PLAN

4.1 CONCEPT (Figure 4)

The principal components of the development concept are a Day use Area comprising about 200 hectares, and a Camp ground, Interpretive Centre and Operations Area of about 900 hectares. These areas include the following:

- picnic areas on the Upper Blackstone River adjacent to the Liard Highway,
- a lookout, on the Highway, about three kilometres east of the Blackstone River,
- a Registration/Information Centre at the entrance to the camp ground,
- an Outfitters' Centre and Maintenance Compound west of Registration/Information Centre,
- visitor accommodation along the water edge consisting of cabins, serviced campsites, group campsite and primitive campsites,
- an Operations Centre north of the main camping area: primarily for Parks Canada offices, Interpretive Centre and maintenance facilities (a final decision has not been reached on whether this part of the development will be carried out),
- Parks Canada Housing (to be built only if Parks Canada locate at Blackstone) ,
- roads and walking trails,
- a waste disposal site in the north-east part of the park, near the Liard Highway.

4.1.1 Plan Flexibility re: Parks Canada Facilities

Because a definite decision has not been reached on whether Parks Canada will relocate from Nahanni Butte to Blackstone Park, the plans presented here have been prepared to accommodate two eventualities:

a) that Parks Canada will locate at Blackstone;

b) that Parks Canada will not locate at Blackstone.

This approach requires the use of some temporary installations and the preservation of certain sites for indefinite future uses.

4.1.2 Boundaries

The proposed park boundaries (Figure 4) enclose areas totalling about 1100 hectares (2700 acres). The boundary provides for a buffer zone, 100 metres or more in width, along the east side of the highway. The recommended northern boundary includes sufficient space for possible Parks Canada housing yet leaves about 2400 metres between the park and Edwin Lindberg's house. On the south, the boundary encloses those parts of the Blackstone and Upper Blackstone Rivers which would be most suitable for roadside picnic areas.

4.1.3 Picnic Areas

All four quadrants of the intersection of the Liard Highway and the Upper Blackstone River are suitable as sites for roadside picnic areas. A five-site area in the northwest quadrant is recommended for development by 1983. Other quadrants should be developed as demand requires. Figure 5.1 illustrates the recommended layout for the first two quadrants.

4.1.4 Lookout (Figures 4 and 5.2)

A small clearing and roadside parking area is proposed on a height of land about 3 km. east of the river. From this point, with some clearing of trees, travelers can enjoy vistas of the Butte, the mountains and the Liard Valley.

4.1.5 Roads (Figure .4)

The Blackstone Park Road consists of three sections, which for the purpose of this report, we have called South Road, River Road and North Road. The principal park facilities will be located on River Road overlooking the Liard River. South Road will be the visitor entrance to the park, while North Road will be the usual entrance to Parks Canada facilities.

4.1.6 Registration/Information Centre (Figures 4 and 5.4)

This centre will be placed at the junction of South Road, River Road and a side road leading to the Outfitters' Centre, the maintenance compound, long-term parking area and the park dock. All visitors will check-in at the Registration Centre and pay the prescribed fees for overnight or day use. Information and tour brochures will be readily available at the Centre and visitors will register for tours and interpretive programs at the Centre. The road system at this location must be designed to accommodate a variety of in-coming and out-going movements as well as parking.

4.1.7 Interpretive Centre (Figures 5 and 5.4)

During preliminary discussions with Parks Canada staff, it was felt that the Interpretive Centre should be located in the Parks Canada Operations Centre. However, because of the key role to be played by the Centre in visitor activities, we now believe that

the Interpretive Centre should be located near the Registration Centre as shown on Figures 4 and 5.4. Until this locational problem is finally resolved, it is proposed that the Interpretive Centre be established at the focal point of visitor activities, near the junction of South Road and River Road.

4.1.8 Outfitters ' Centre (Figure 5.4)

The Outfitters' Centre will incorporate all facilities and equipment required for tours. There will be a floating dock for power boats,canoes and float planes.

In close association with the outfitters' facilities will be maintenance facilities for G.N.W.T. operations. (These facilities may eventually be relocated to the Operations Centre in conjunction with Parks Canada facilities) .

A bunkhouse for staff, official visitors and guides will be constructed near the river-edge west of the outfitters' area.

4.1.9 Park Supervisor's Residence (Figures 4 and 5.4)

It has been assumed that the Park Supervisor will live at the site with his family for about six months of the year. A house, near the Registration Centre, has been included in the plan for use of the Park Supervisor and his family.

4.1.10 Visitor Accommodation (Figures 4, 5.4, 5.5 and 5.6)

Four types of accommodation have been included in the plan according to the requirements of the market analysis in Chapter 2, as follows:

- 10 Cabins
- 33 Serviced Campsites
- 1 Group Campsite for up to 10 tents
- 5 primitive campsites.

4.1.10.1 Cabins (Figures 4 and 5.4)

The cabins have been placed on the shore of the Liard River near the Registration/Information Centre where they will form part of a built-up centre of the park. It is anticipated that the cabins will be used by travelers who do not wish to use tents but who wish to experience relatively primitive outdoor living. Cabins may also be used by small family groups who wish to spend several days in cottage-like living. The buildings should therefore be designed to accommodate limited housekeeping conditions. A wash house with drinking water and toilets should be constructed to serve the group of ten cabins.

4.1.10.2 Serviced Campsites (Figures 4, 5.5 and 5.6)

Thirty-three serviced campsites will be required by 1987. It is proposed that these be constructed in groups of about ten with a wash house serving each group. Each site will be served by an electrical outlet and will be designed to accommodate either a tent or a recreation vehicle. The circulation system will be designed so that trailers will not have to back-up and all sites will be located to take maximum advantage of river breezes and views of the river and the mountains.

Trees will be selectively cleared to provide suitable screening and to retain a strong woodland feeling, but spruce will generally be kept away from the sites to minimize mosquito and black-fly problems. ✓

Space for about seventy additional sites has been identified adjacent to the proposed initial 33 sites (Figure 4) .

4.1.10.3 Group Campsite (Figure 4)

On the north end of River Road an area will be provided for groups of two to ten tents. It is anticipated that the area will be used primarily by more rugged visitors returning from, or setting out for, Nahanni National Park. The sites will be served by pit toilets and a water tank.

4.1.10.4 Primitive Campsites (Figure 4)

Five campsites, for visitors who wish to camp in quite isolated locations, will be provided on Crescent Island and near the junction of the north and south outlets of the Blackstone River. These sites will be simple clearings, possibly served with pit toilets.

4.1.11 Operations Centre (Figures 4 and 5.8)

If Parks Canada move their operations to Blackstone Park, their relatively major operational facilities will occupy about 40,000 m^2 of land near the junction of River Road and North Road. The facilities will consist of administrative offices, maintenance yards and buildings, a bunkhouse, a helicopter pad and a dock for power boats and float plane. And Roadway out to highway

Orientation sessions for preparing visitors to enter Nahanni National Park would be held by Parks Canada, in the Interpretive Centre at the foot of the park entrance road near the Registration Centre (Figure 4.) The Information Centre would be jointly developed and operated by GNWT and Parks Canada.

4.1.12 Parks Canada Housing (Figure 4)

Housing sites adjacent to the Operations Centre have been provided for five families of Parks Canada staff who are expected to reside at the park.

4.1.13 Waste Disposal Site (Figure 4)

A site for disposing of sewage and solid waste has been shown on the plan near North Road and the Liard Highway. The requirements for this site are described in Chapter 5, Engineering Services. The final location for these facilities will be determined after soil tests have been carried out.

4.1.14 Ernie Lief/Albert Thomas' Cabin (Figure 4)

Being purchased and retained for a Tourist Attraction

The old trapper's cabin on the Liard River, near the north boundary of the park, should be preserved and rehabilitated as a feature of the interpretive program at Blackstone. It should be connected to the foot-trail system and furnished with trapper's equipment during the tourist season.

4.2 COMPONENTS OF THE PLAN

This section presents detailed planning information on the various components of the plan. The material has been prepared in check-list form, primarily as a guide for architects, designers and engineers who will prepare the detailed designs.

4.2.1 Picnic Area (Figure 5.1)

- Day-use area for persons traveling the Liard Highway.

1 site in place now

- Located on the banks of the Lower Blackstone near the highway.

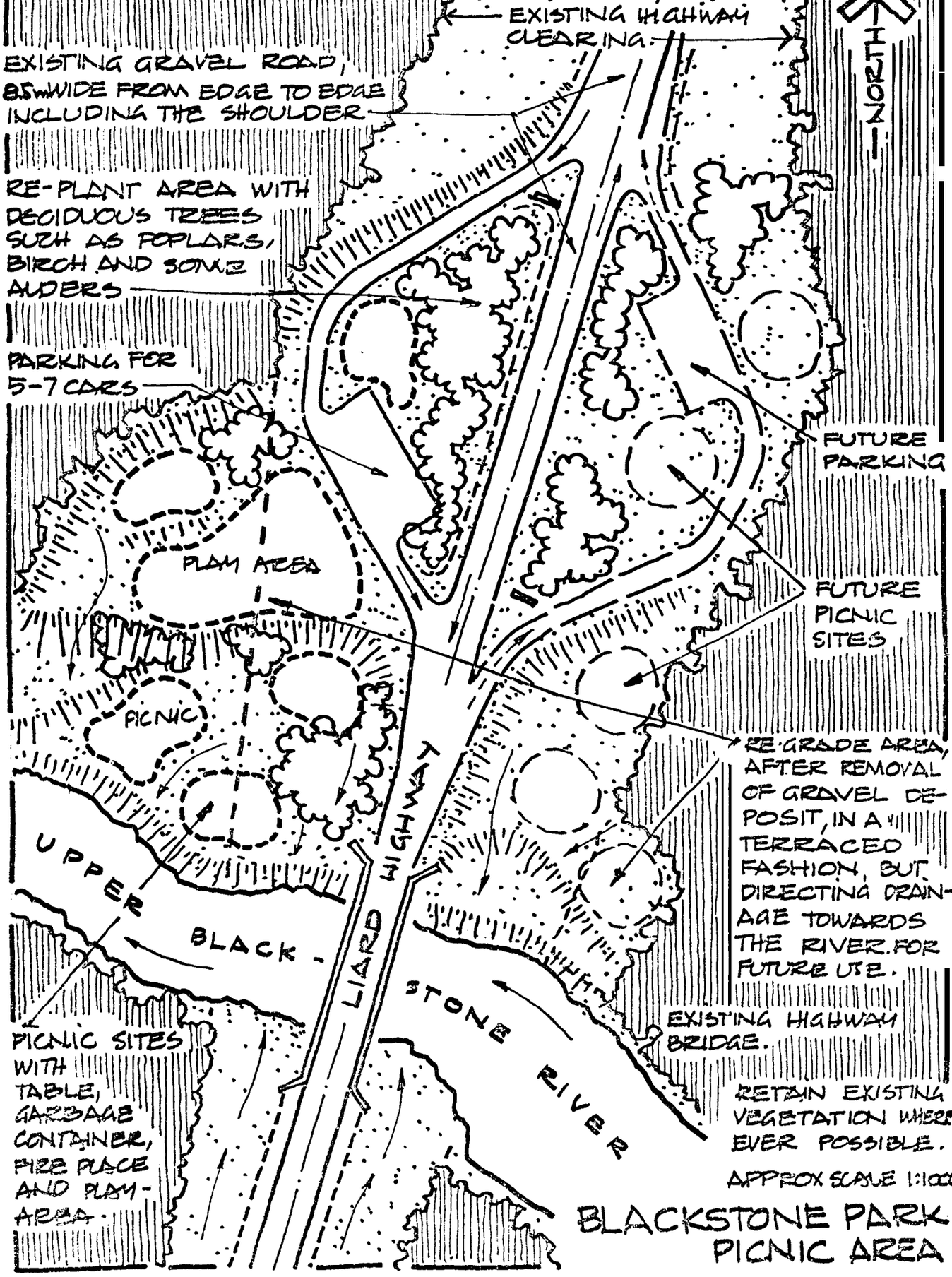
- Additional sites may be developed in other quadrants as required.

- Specific Requirements:
  - picnic tables (5)
  - fireplaces (5)
  - signs indicating facilities offered at Blackstone Park
  - parking: atleast 5 spaces ✓
  - litter bins (2)
  - pit toilets (2)
  - walking trails connecting with the overall Blackstone Park system of trails
  - approximate area required for a 5 table site 6,000 m^2

4.2.2 Lookout (Figure 5.2)

- Parking for 5 cars; clearing and selective cutting to give a good view of the Butte, the Nahanni Range and possibly the Liard River.

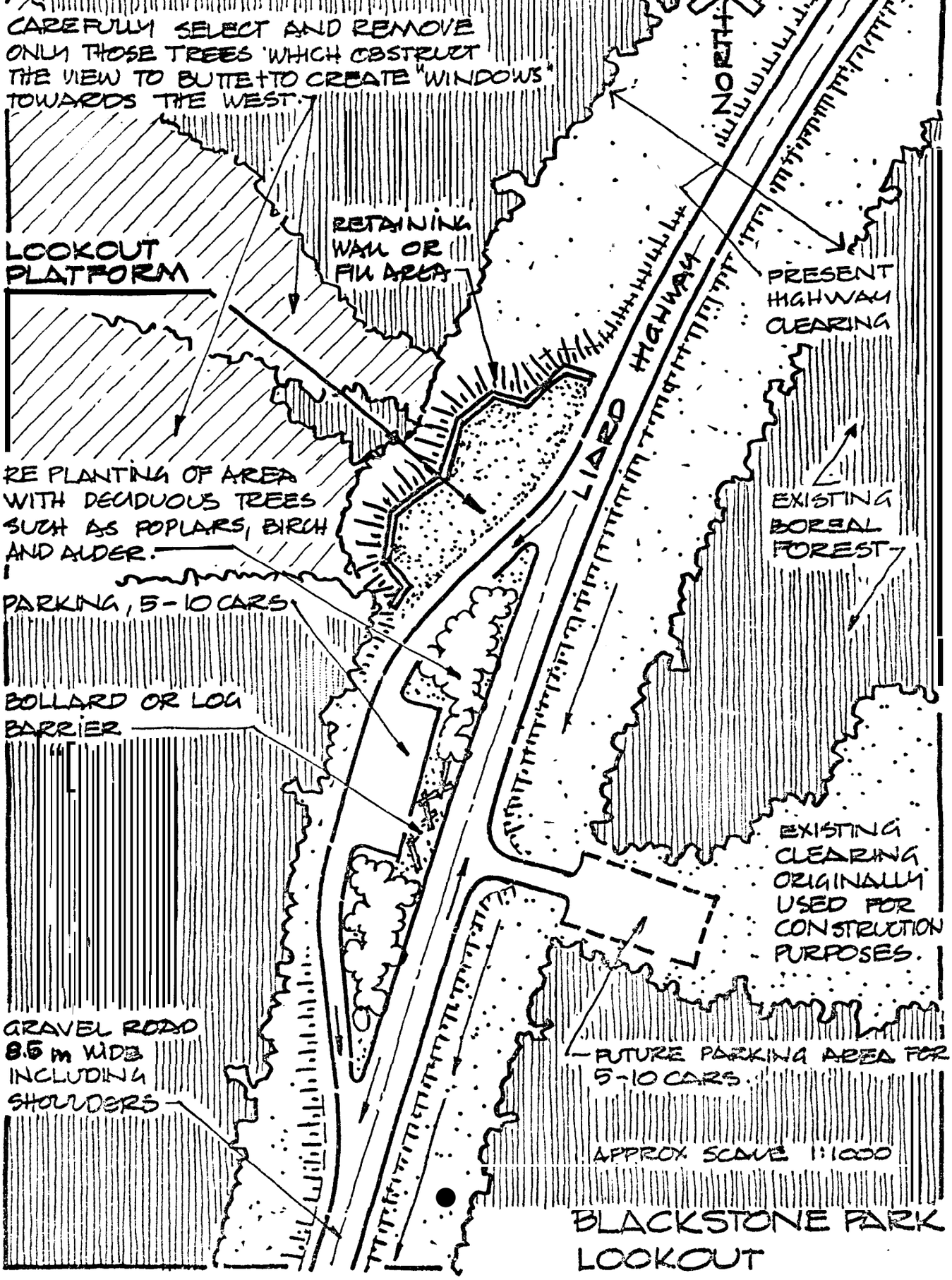
- Detailed design will establish need for a raised platform; if a raised platform is required, it will be constructed of logs and planks to conform with the Blackstone Park motif.



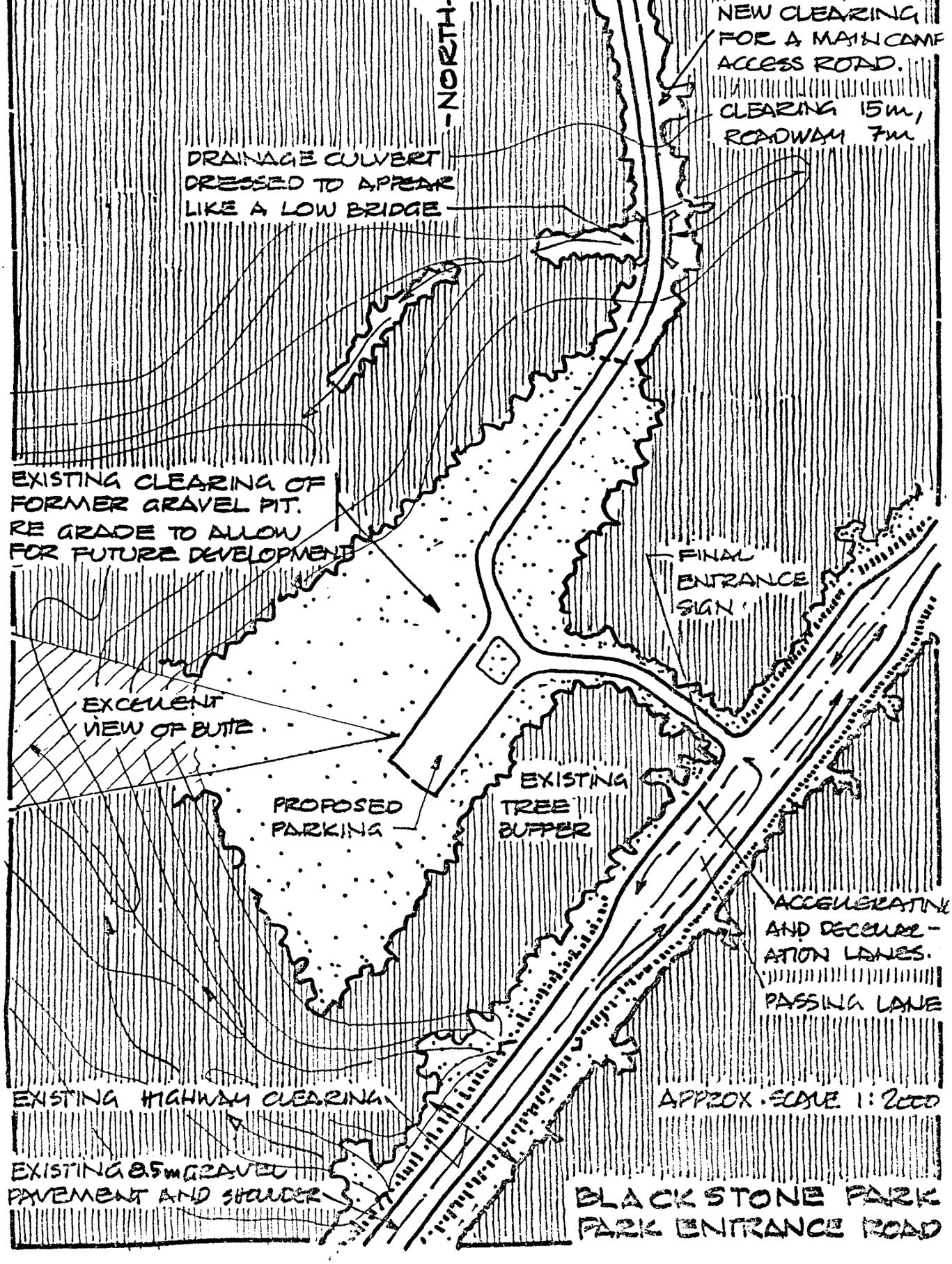
BLACKSTONE PARK PICNIC AREA

KF JAN 81

5.1


CAREFULLY SELECT AND REMOVE ONLY THOSE TREES WHICH OBSTRUCT THE VIEW TO BUTTE TO CREATE "WINDOWS" TOWARDS THE WEST.
LOOKOUT PLATFORM
RETAINING WALL OR FILL AREA
RE PLANTING OF AREA WITH DECIDUOUS TREES SUCH AS POPLARS, BIRCH AND ALDER.
PARKING, 5-10 CARS
BOLLARD OR LOG BARRIER
GRAVEL ROAD 8.5 m WIDE INCLUDING SHOULDERS
LIARD HIGHWAY
NORTH
PRESENT HIGHWAY CLEARING
EXISTING BOREAL FOREST
EXISTING CLEARING ORIGINALLY USED FOR CONSTRUCTION PURPOSES.
FUTURE PARKING AREA FOR 5-10 CARS.
APPROX SCALE 1:1000
BLACKSTONE PARK LOOKOUT

K.F. JAN 81


NORTH-
NEW CLEARING FOR A MAIN CAMP ACCESS ROAD.
CLEARING 15m, ROADWAY 7m
DRAINAGE CULVERT DRESSED TO APPEAR LIKE A LOW BRIDGE
EXISTING CLEARING OF FORMER GRAVEL PIT. RE GRADE TO ALLOW FOR FUTURE DEVELOPMENT
FINAL ENTRANCE SIGN
EXCELLENT VIEW OF BUTTE
PROPOSED PARKING
EXISTING TREE BUFFER
ACCELERATING AND DECELERATION LANES.
PASSING LANE
EXISTING HIGHWAY CLEARING
EXISTING 8.5m GRAVEL PAVEMENT AND SHOULDER
APPROX. SCALE 1:2000
BLACKSTONE PARK
PARK ENTRANCE ROAD

KF JAN. 81

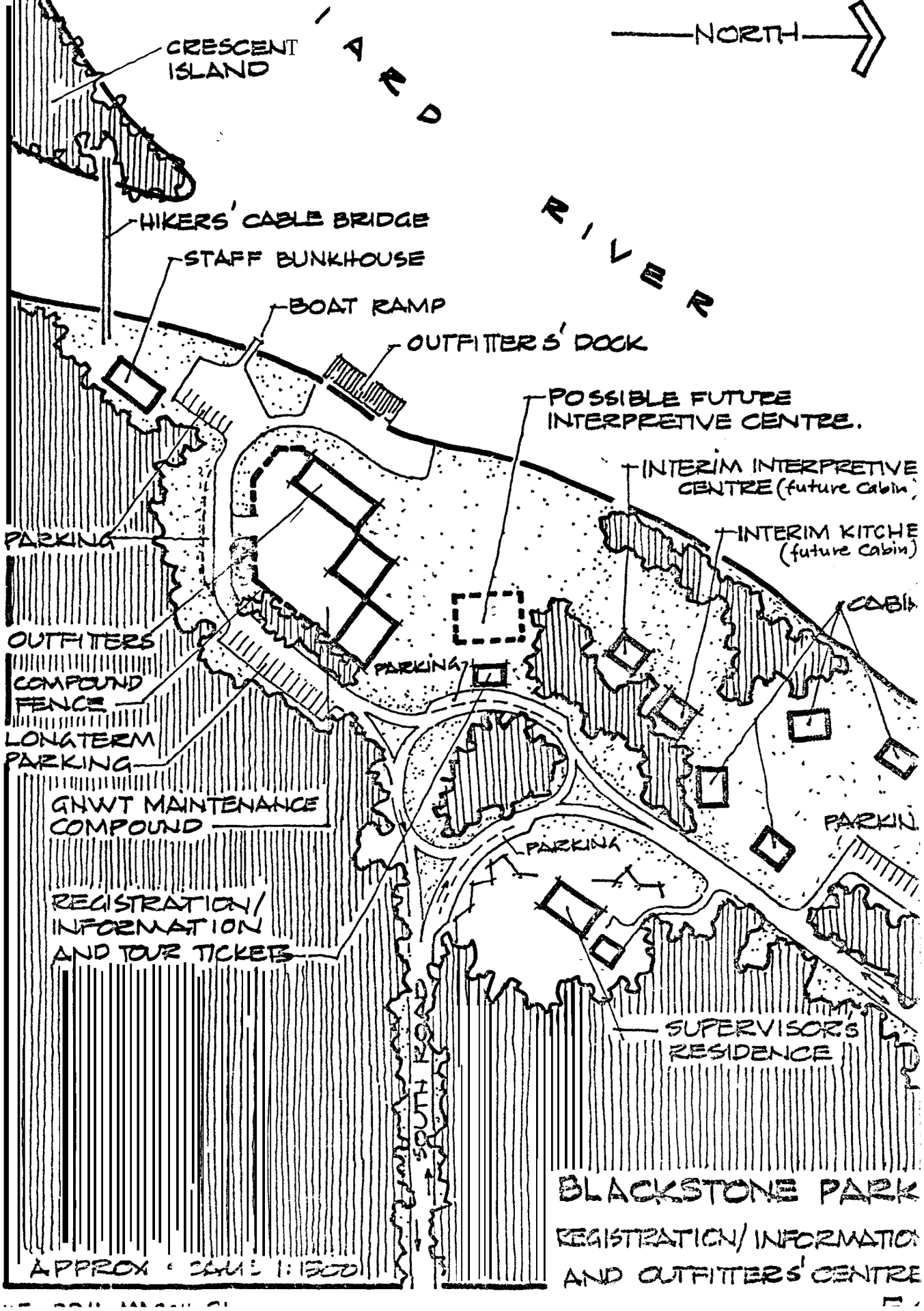
4.2.3 Park Entrance (Figures 4, 5.3)

Entrance signs and directions to the Registration Centre.

For maximum traveller convenience, a trailer pump-out should be located near the park entrance. A less convenient option, would be to locate the pump-out near the sewage lagoon.

4.2.4 Registration, 'Information and Interpretive Centre (Figure 5.4)

- Registration for Park accommodation.
- Information on tours and interpretive programs.
- Interpretive Centre housed temporarily in a nearby cabin which will eventually be used as visitor accommodation if a joint centre is developed with Parks Canada at the north end of the Park.
- Located on a highly visible site.
- Staffed by 2 persons (Park Supervisor and Registration Officer) .
- Extra office space to be provided for visiting personnel.
- Specific Requirements:
  - registration/information office and work stations 60 m^2
  - visitor toilets 5 m^2
  - electricity
  - water supply
  - sewage holding tank


NORTH
CRESCENT ISLAND
ROAD RIVER
HIKERS' CABLE BRIDGE
STAFF BUNKHOUSE
BOAT RAMP
OUTFITTER'S DOCK
POSSIBLE FUTURE INTERPRETIVE CENTRE.
INTERIM INTERPRETIVE CENTRE (future cabin)
INTERIM KITCHE (future cabin)
CABI
PARKING
OUTFITTERS COMPOUND FENCE
LONGTERM PARKING
PARKING
PARKING
PARKIN
GNWT MAINTENANCE COMPOUND
REGISTRATION/ INFORMATION AND TOUR TICKETS
SUPERVISOR'S RESIDENCE
SOUTH
BLACKSTONE PARK
REGISTRATION/ INFORMATIO
AND OUTFITTERS' CENTRE
APPROX

‘4.2.5 Park Supervisor’s Residence

- Seasonal accommodation for park supervisor and possibly his family.

- Specific Requirements:
  - residence with living/dining, kitchen, bedroom, sleeping loft, toilet, storage, screened verandah 70 m^2
  - electricity
  - radio telephone
  - water storage
  - sewage holding tanks

4.2.6 Outfitter’s Centre (Figure 5.4)

Point of departure and service centre for outfitters and tour operators.

Includes float base, dock, boat storage, maintenance facilities.

GNWT maintenance facilities for Blackstone Park,

Sleeping accommodation for outfitters, male staff of Blackstone Park and official visitors (7 bunks) .

Long-term parking for trippers (20 spaces) 540 m^2

Short-term parking for day-use visitors (10 spaces including bus space) (ensure turnaround) 300 m^2

- Specific Requirements:
  - supply room for fuel, fishing tackle, lures, etc. — 20 m^2
  - bunkhouse (7 bunks) including sleeping, common area, toilets (2 WC's, 2 lavs, 2 showers) — 60 m^2
  - dock for float planes, power boats, canoes — 150 m^2
  - outfitter's maintenance facilities and boat storage
    - shed — 30 m^2
    - enclosed boat storage for 10 canoes, 2 power boats — 100 m^2
  - Blackstone Park maintenance facilities:
    - shop — 30 m^2
    - vehicle garage (3 vehicles) — 60 m^2
    - flammable liquids storage — 10 m^2
    - fenced compound for tables, signs, fill, pit toilets etc. — 100 m^2
  - electricity
  - radio telephone
  - water supply
  - sewage holding tank
  - pit toilets (2)

4.2.7 Cabins

- 10 cabins will be required for visitors by 1987. In 1983, 6 cabins plus one for interim uses will be required. (In early stages, of the development, the Interpretive Centre would be established in the interim use cabin.)

  Each sleeping cabin contains 4 sleeping bunks.

- Specific Requirements for each Sleeping Cabin:

. living/eating	15 m^2
. . sleeping (2 x 7.5 m^2)	15 m^2
. screened verandah	15 m^2
Total	45 m^2

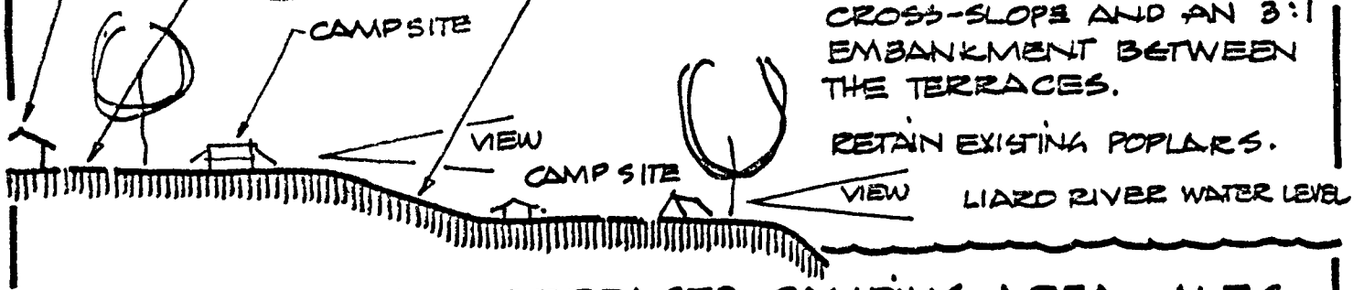
4.2.8 Serviced Campsites (Figures 5.5 and 5.6)

- Located close to the Liard River for views of the river and the Nahanni Range.
- 22 sites required by 1983, 33 sites by 1987.
- All sites to be accessible by car and useable by either tents or recreation vehicles.

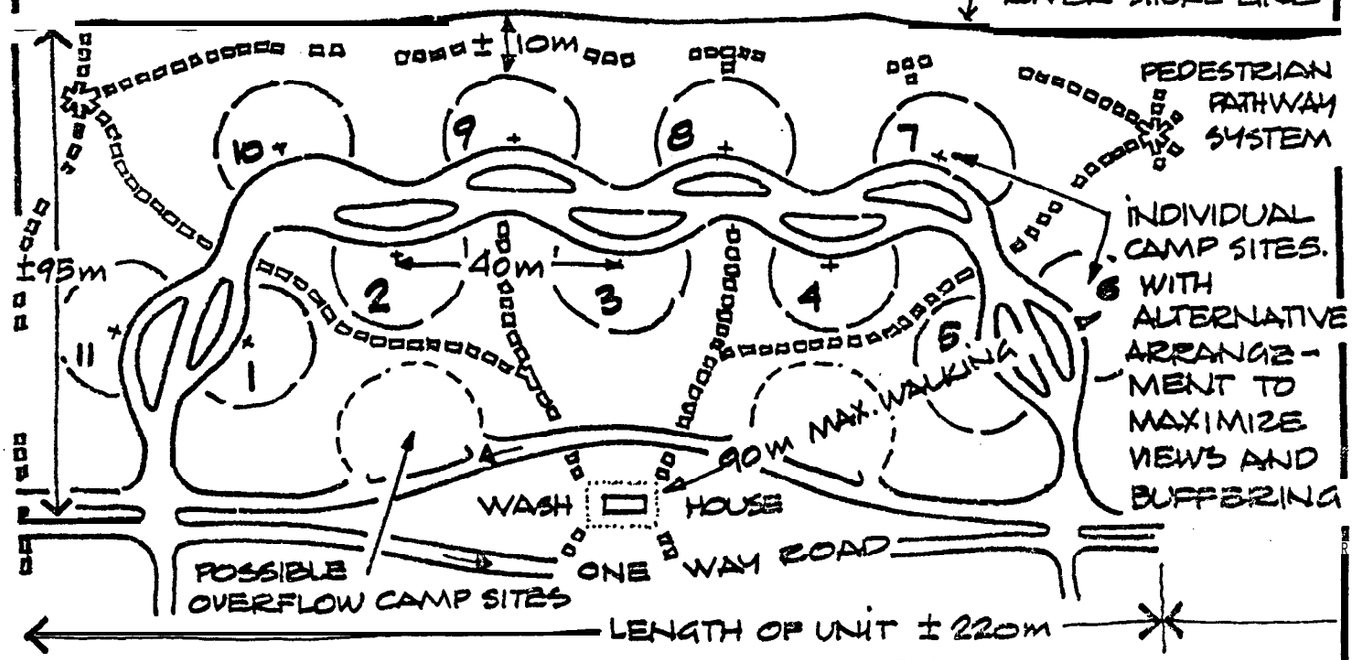
  sites to be provided with electrical outlets.
- Each site to be within about 75 metres of a wash house.
- Road system to accommodate trailer movements without backing up.
- Selective clearing for campsites and vistas.
- Grading and installation of pads for tents and vehicles.

4.2.9 Wash House (Figure 5.7)

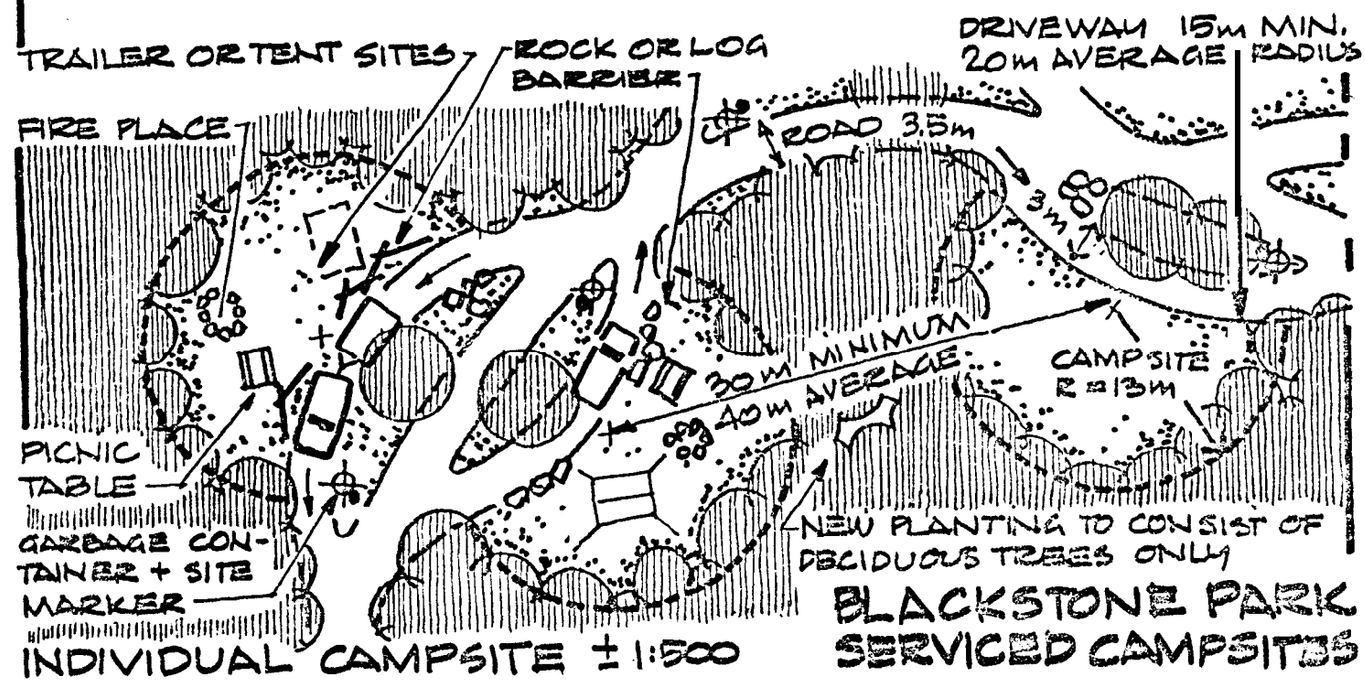
- Centrally placed for a cluster of 10 campsites (28 people); capable of expansion to serve two adjacent clusters of 10 campsites.
- Road access for service vehicles.
- Solar heat to incorporated, if feasible, for heating shower water.



CROSS-SECTION OF TERRACED CAMPING AREA, N.T.S.



CAMPSITE CLUSTER, SCALE ± 1:1250



INDIVIDUAL CAMPSITE ± 1:500

BLACKSTONE PARK SERVICED CAMPSITES

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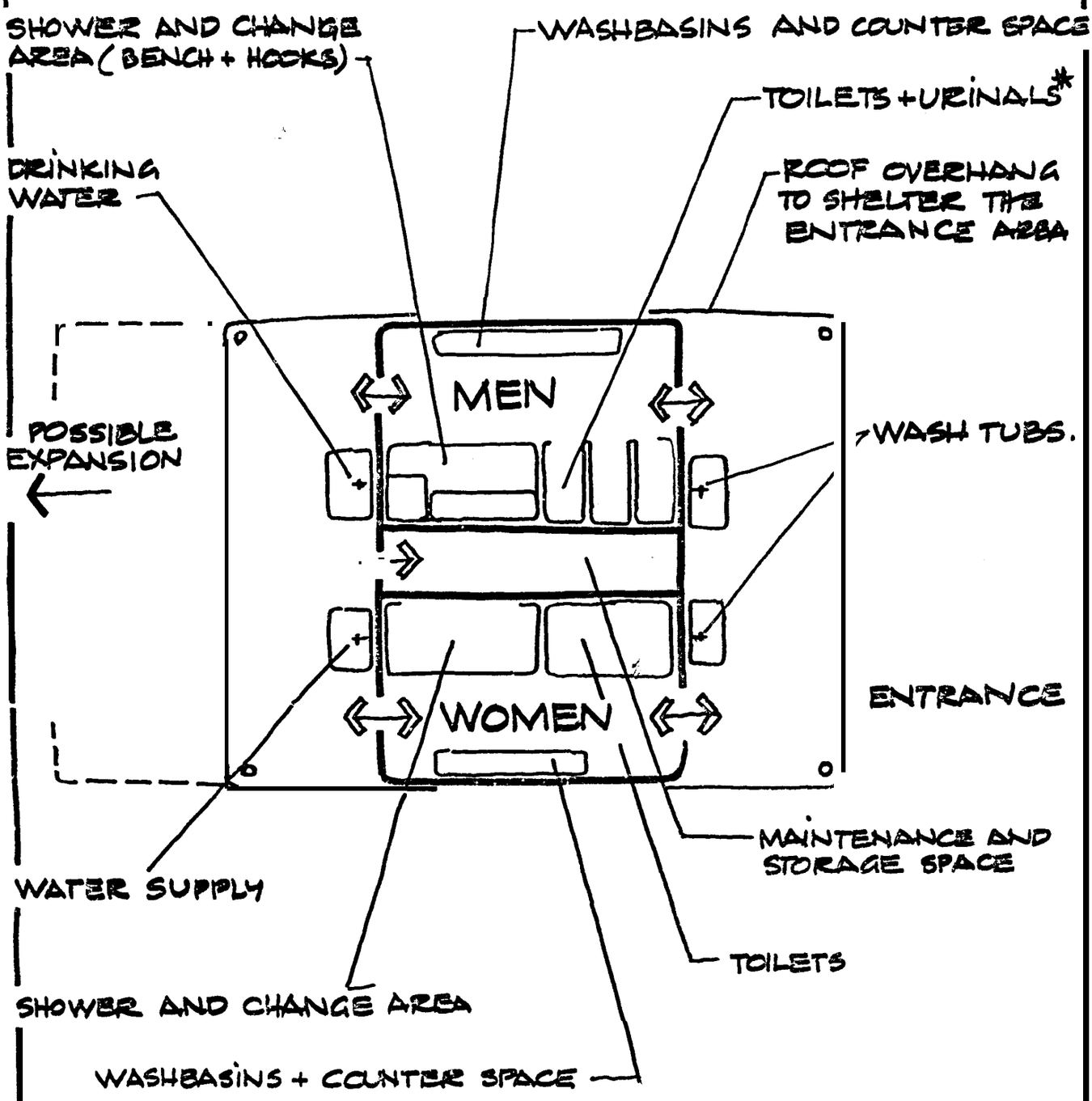
5.5 + 5.6



NOTE * URINAL MAY BE SUBSTITUTED BY A TOILET FOR EASE OF MAINTENANCE + HYGIENE.

HOT WATER SUPPLIED BY SOLAR HEAT AND/OR PROPANE GAS.

BLACKSTONE PARK

WASH HOUSE

KF JAN 81

- Specific Requirements:
  - potable water supply
  - 1 male and 1 female wash house, each with 2 WC's, 2 lavs, 2 showers 30 m^2
  - exterior wash tubs (roofed)
  - firewood enclosure
  - electricity
  - water storage (hot water and cold water)
  - sewage holding (separate tanks for grey water and sewage)

4.2.10 Group Campsites

- One clearing suitable for 4 to 10 tents; to be used principally by groups returning from, or setting out for, Nahanni National Park.

- Separated from Serviced Campsites due to differing camping styles.

- Specific Requirements:
  - wood storage
  - drinking water storage
  - pit toilets (2)

4.2.11 Primitive Campsites

Remote from Serviced Campsites and accessible only by boat or walking trails.

Located mainly on Crescent Island and south branch of Blackstone River.

- Situated in clearings for one or two tents.

Serviced with a pit toilet or possibly no toilet.

Cable pedestrian bridge linking mainland and Crescent Island.

- Estimated requirements: 1983 - 3 sites, 1987 - 5 sites.

4.2.12 Operations Centre (Figure 5.8)

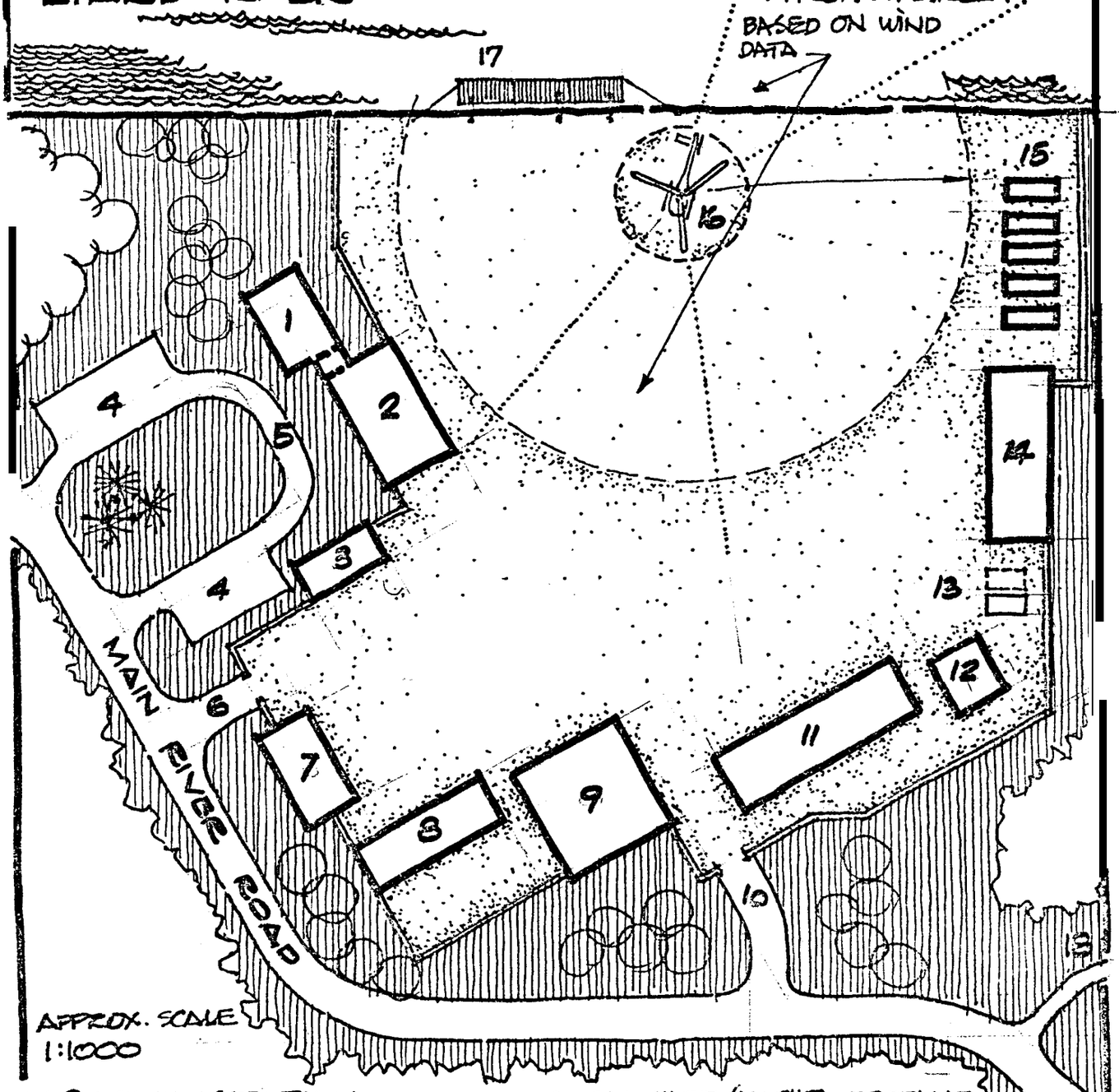
To contain all administrative, maintenance and interpretive facilities for Parks Canada operations with respect to Nahanni National Park.

The following specific requirements for Parks Canada operations are based on data provided by Parks Canada personnel in Fort Simpson and Nahanni Butte, November 24, 1980 and December 3," 1980.

- Administration Building

Superintendent's Office Administration Officer's Office General Administration Office Chief Park Warden's Office Assistant and Seasonal Warden's Office space	180 m^2	
drafting area display area visitor reception interpretation public toilets	110 m^2	Facilities to be used by Parks Canada and GNWT if Parks Canada locate at Blackstone Park(1)
Total	290 m^2	

(1) Room for showing slides and movies, display area, information desk, handicrafts, postcards etc. to be provided in the Information Centre.



1.+2 ADMINISTRATION OFFICES
3. CARPORT (STAFF.)
4. PARKING FOR VISITORS.
5. MAIN ENTRANCE
6. STAFF GATE
7. BUNKHOUSE + REC. ROOM
8. VEHICLE STORAGE
9. MECHANICAL SHOP, WARDENS EQUPMENT AND CARPENTRY SHED.
10. COMPOUND GATE
11. STORES, HEATED + UNHEATED
12 GAS SHED. (NAPHTA, PROPANE MOTOR OIL ETC.)
13 ADDITIONAL FUEL TANKS
14 MISCELLANEOUS EQUIPMENT SHED
15 FUEL STORAGE (TANKS)
16. HELICOPTER PAD 30 mϕ FOR MEDIUM SIZE MACHINE
17. FLOATING DOCK FOR JETBOATS AND FLOAT PLANES.
18. ROAD TO STAFF RESIDENCES

BLACKSTONE PARK OPERATIONS CENTRE

KF JAN 81

. generator room	50	m^2
. warden's Equipment Shed	50	m^2
. mechanical shop	200	m^2
. tractor shed	25	m^2
. carpentry shed	150	m^2
. stores a) heated	250	m^2
b) unheated	100	m^2
. vehicle storage	65	m^2
. misc. equipment storage	300	m^2
. bunkhouse (11 persons)	100	m^2
. recreation room	20	m^2
. fuel supply: 50,000 gallons	120	m^2
. heliport: at the river edge linked to fuel depot and close to gasoline	150	m^2
. gas shed; explosion-proof fittings, propane, naphtha, outboard motor oil, grease and lubricants	40	m^2
. all facilities to be enclosed within a fenced compound comprising about 8000 m^2		
. floating dock anchored to shore by cables and connected to shore by cat walk (a second dock should be located at the Interpretive Centre for the convenience of visitors wishing to depart on tours from that location)		
. housing for Parks Canada full-time staff and their families. Five homes, 3 bedrooms each, 70 m2 each	350	m^2

4.2.13 Signs

- All signs must be consistent with the Blackstone Park design motif and take into account the availability of local skills and materials.

- A few large signs will be required for the main entrance and for information and interpretive purposes (10 signs)

- A large number of smaller signs will be required for directions, identification of facilities and names of roads and trails (40 signs)

4.2.14 Roads

- Two lanes to allow for passing of recreation vehicles, loop system to connect with Liard Highway at two locations to provide an emergency exit and to provide separate access for maintenance vehicles (4 km).

- Design should provide for through movement of trailers, without the need to back-up.

4.2.15 Walking Trails

- 2 to 3 feet wide, cable suspension bridge to connect mainland to Crescent Island.

4.2.16 Solid and Liquid Waste Disposal

- Solid waste dump in north-east corner of site, fenced to keep out animals; incinerated daily.

- Liquid waste lagoon, fenced for safety, pumped regularly from wash houses, pit toilets, residences, recreation vehicle pump-out tank etc.

4.3 DESIGN MOTIF

4.3.1 Introduction

Four basic premises have generated the design concepts and motif for the GNWT and possible Parks Canada facilities at Blackstone Park. Firstly, all man-made works should respond to, and further the tourist image of a rustic camping experience in a frontier locale, while providing the necessary amenities to visitors. Secondly, all works should take full advantage of unique physical features at the site. Thirdly, the works should utilize, to the best possible advantage, materials indigenous to the region and should take maximum advantage of the skills of local builders and craftsmen. And fourthly, as a significant portion of the facilities could be operations oriented, the buildings and works should enable smooth administration and maintenance of the parks as work forces expand and contract in various seasons.

A simple design vocabulary including wood, glass, shingle, and stone can accomplish these objectives in a natural and appealing manner, particularly if a consistent design expression and harmony are maintained in all structures including buildings, signs, picnic tables, benches, retaining walls, bridges, fences and bollards. Such a unified design approach will aid in relating elements which differ in size or function, and will present a cohesive and memorable image of the park within the context of local historic traditions. The following sections present a recommended design

vocabulary with respect to form, siting, materials, colour and texture - the essential ingredients of an architectural expression or motif.

4.3.1.1 Form

It is anticipated that the development which is planned for the first five years will not comprise the ultimate extent of the facilities. Coupled with this, the desire to maintain efficient operations with minimal time spent in circulation may dictate that additions of discreet new buildings is not the optimal manner of accommodating growth. The form, method of construction, and physical siting of buildings which are likely to expand should reflect this.

All buildings, signs, tables, etc. should clearly relate to one another. The elements should together create a family of generic forms which can be combined in a consistent manner. Details of this architectural expression will be worked out during the design and working drawing stage of the project, but at this time a number of underlying principles can be established. The following design guidelines are recommended for each building, structure or element:

1. Simple, carefully proportioned geometric forms which blend with the surrounding landscape.

2. Low, horizontal panels of wood, stone, glass and shingle combined in wall and roof panels. This theme should be reflected in harmonizing forms for tables, pit toilets, litterbins, fences etc.

3. Relatively few building appendages.

4. Straight forward detailing of materials.

5. A modular approach to facilities in which expansion is anticipated; this will allow growth to occur without detracting from the original expression.

4.3.1.2 Siting

Travelers on the Liard Highway will experience some of the most picturesque scenery in the Northwest Territories. After traveling through miles of uninterrupted forest, punctuated with glimpses of mountains and river valleys, Blackstone Park will be a welcome stopping point at the edge of the Liard River with Nahanni Butte and the Nahanni mountains in the near distance. A fundamental siting principle in Blackstone Park will be to locate buildings, tables, benches and campsites in a manner that takes maximum advantage of these views.

The site generally slopes down from the highway to the Liard River. It is recommended that buildings be kept relatively low and opaque on the uphill side, possibly with the ground plane brought partially up the building face. The downhill facade should be high and relatively transparent to take full advantage of views, sunrise, sunset, and prevailing breezes.

The need for visitor orientation must also be considered. Visitors will require readily visible landmarks for orientation. Public facilities should therefore be visibly prominent but not obtrusive. Surrounding foliage should be thinned, but not cleared.

4.3.1.3 Materials

The ready availability of spruce in the vicinity, the traditional use of logs by local craftsmen, and their compatibility with the tourism image, make logs the ideal building material for new park facilities at Blackstone. Attention must be given, however, to adapting the material to the specific requirements of the project.

The traditional difficulty in load-bearing log construction arises from the -introduction of doors and windows. Working around these apertures is time consuming, furthermore the apertures introduce problems in stability due to irregular shrinking and settling of the logs. Nevertheless, openings will be needed in proposed buildings in order to capitalize on the attractive natural setting, pleasant views and vistas. Furthermore, the amount of natural light within buildings should be maximized. Most facilities should therefore contain a relatively high percentage of light apertures. This will not cause a serious heat loss problem, because most of the buildings will be used only during the summer months. Such openings would be protected from vandalism by permanent heavy wooden shutters closed during the winter. For summertime protection, decorative screens would be incorporated into the aperture designs.

To overcome the weaknesses introduced by windows and doors in traditional log buildings, and to provide for plenty of natural light and view potential, it is proposed that the government of Northwest Territories and Parks Canada facilities

at Blackstone Park utilize logs combined into load bearing panels rather than as individual members. The size and proportions of the panels would vary with the size and function of the facility, while wall and roof enclosure would consist of glass, shingle or stone.

This approach would lend itself well to on-the-ground prefabrication and rapid erection. It would utilize plentiful local material in a simple manner leading to economical construction methods. In addition, it would facilitate expansion of individual buildings, which is generally a problem with traditional load bearing, log construction. It appeared, from site visits in November, that there is an abundance of medium size stone along the banks of the Liard River. If sufficient quantities are available, this material could be used as retaining walls, foundation walls, fireplace bases, etc. It would integrate structures with the landscape and impart an increased sense of solidity to uphill facades.

4.3.1.4 Color and Texture

It is recommended that the logs be treated with a clear preservative such as linseed oil. This light expression of the wood would act as a foil to the dark coniferous forest. Stone panels and foundation walls should be constructed with a light mortar to complement the light color of the river stone.

4.4 INTERPRETIVE PROGRAM

4.4.1 Introduction

Blackstone Park will be a key stopping point for tourists on the Liard Highway between Fort Simpson and Fort Liard. In addition, the Park will serve as a major “gateway” to Nahanni National Park.

The success of Blackstone Park will depend on the provision of accommodation suitable to the northern tourist and on the attractiveness of programs and activities for visitors. A well-conceived interpretive program will be an essential ingredient in attracting visitors to prolong their stay. Such programs should capitalize on the proximity of the South Nahanni River and its canyons, which have recently been acclaimed as natural resources of international importance.

The following sections outline an interpretive program designed to take full advantage of the natural and cultural attractions of Blackstone Park, Nahanni National Park and the Liard River Valley.

4.4.2 Objectives and Program Concept

The objective of the Blackstone Park Interpretive Program is to assist visitors to recognize, appreciate and enjoy the diverse natural and cultural components of Blackstone Park and the surrounding region.

The Interpretive Program should be based on the following themes:

- Physiography and Geology,
- Wildlife and Vegetation,
- Climate, Astronomy and the Seasons,
- Human History,
- Economic Development and
- The Northwest Frontier.

Each theme should be presented by making the fullest possible use of a variety of presentation techniques including:

- Brochures, maps and information folders for use on guided and self-guided tours,
- Tour guides and outfitters stationed at Blackstone Park, and possibly at Nahanni Butte settlement, who would accompany groups on guided tours, provide advice on unguided tours and rent equipment for tours including boats, and camping or fishing gear,
- An Information Centre containing interpretive displays, facilities for slide and film presentations, sales area for books, slides and pictures, and a reading room; all of which will emphasize the role of Blackstone as a point of visitor contact with many of the wonders of the north.
- Walking trails and boating routes.

In addition, special approaches to interpretation may be required for selected subject areas. These could include:

- Guest speakers e.g. a trapper to discuss his experience, Dick Turner, Gus Kraus
- Viewing points on "Crescent Island" for sunset and sunrise,

- Scale model of the "Settlement of Nahanni Butte",
- Gold sluice to demonstrate panning operation,
- Log building construction demonstration,
- Trapping equipment, scows, barges and dog sled exhibits.

Many additional ideas for special approaches will probably be added as the program develops. One of the guiding principles in making these additions should be to establish a high sense of immediacy and personal involvement of the visitor. First hand, interpersonal contact with the attractions and subjects of interest should be continuously introduced into the program in a creative manner.

4.4.3 Interpretive Programs

Each program theme is described below in terms of underlying principles, attractions, location, facilities required and techniques for presenting the material.

4.4.3.1 Physiography and Geology

4.4.3.1.1 Underlying Principles:

Blackstone Park, on the Liard River, is bordered on the west by the Mackenzie Mountains and on the east by the Mackenzie Lowlands. The scenic beauty of the Liard and Nahanni Ranges, together with Nahanni Butte, comprise the single most attractive and outstanding natural features of the area. The Mackenzie lowlands are characterized by glacial plains and meandering rivers, such as the Blackstone. The mountains, in contrast to the lowlands, present exciting vistas on the western horizon.

4.4.3.1.2 Attractions and Subjects of Interest:

Physiography - Mackenzie Mountains (Liard and Nahanni Ranges); Nahanni Butte; South Nahanni, Liard and Blackstone Rivers and meandering, tributary rivers; islands and deltas; erosion and sedimentation; lacustrine and riverine formations.

Geology - Carboniferous sandstone; shales and limestone of the Liard and Nahanni Ranges; plateau and glacial features of the lowlands.

4.4.3.1.3 Special Approaches:

In addition to the special approaches outlined in Section 4.4.2, the following information will be of assistance in portraying this theme.

Physiography - Model of the region demonstrating the Liard and Nahanni Ranges, the South Nahanni River and elevations above sea level (4-5,000 ft.)

Geology - Cross-sections showing: the carboniferous sandstones, shales, cherts and limestones of the Liard Range; Middle Devonian limestones and dolomitic limestones overlying siliceous limestones and dolomites of Silurian age of the Nahanni Range; the gently rolling hills and plateaux of the Mackenzie Lowlands with the drumlinoid ridges and fluted glacial tills; the Liard River tributaries; area underlain by the Buckinghorse formation (Cenozoic and Mesozoic bedrock geology) .

4.4.3.2 Wildlife and Vegetation

4.4.3.2.1 Underlying Principles:

The Liard River Valley is inhabited by approximately twenty large mammals, game species, predatory birds as well as waterfowl. More than twelve different species of fish are found in the meandering streams of the area and spawn on the numerous gravel bars in rivers such as the Blackstone. Vegetation in the region is comprised mainly of boreal forest with occasional muskeg pockets. The impact of fire and the resultant regrowth, known as Brulé Vegetation, will be important in discussing the evolution of the forests in the Liard River Valley.

4.4.3.2.2 Attractions and Subjects of Interest:

Wildlife

- Mammals (fur bearing and game species); habitats; list of commonly seen mammals e.g. muskrat, beaver, marten, moose, wolf; seasonal movements; sport hunting (big game hunters and outfitters); hunting and trapping equipment e.g. beaver trap; quantity and quality of furs exported annually; hunting and trapping and game management regulations and the registration of traplines.

- Birds (waterfowl and predatory species); habitats; list of commonly seen birds e.g. owl, hawks, falcons and assorted waterfowl; seasonal movements e.g. major migratory flyways and hunting regulations.

Fish (sport species) ; habitats; species common to the rivers include Northern Pike, Lake Whitefish, Mountain Whitefish, Longnose Sucker and Grayling; outfitters and guides; equipment e.g. nets and fishing regulations.

Vegetation - Plant and tree identification; Vegetation zones - white and black spruce forests, mixed wood forests, deciduous forest types, riparian vegetation, muskeg, flora and fauna; forest fires and their environmental/ socio-economic impact; regrowth process after fire (Brule Vegetation) ; soils; timber areas logging operations, forest management techniques and production figures.

4.4.3.3 Climate, Astronomy and the Seasons

4.4.3.3.1 Underlying Principles:

Visitors to the Northwest Territories will be impressed by the long summer days, the phenomenon of a “near-midnight sun"(1) and the effects of climate on vegetation, wildlife and community life.

4.4.3.3.2 Attractions and Subjects of Interest:

Climate and the Seasons - Meteorological data; transportation in each season; (ice bridges and roads) preparation for each season in the community; landscape changes by season

(1) “Near-midnight sun”: In extreme northern latitudes the sun does not set during the mid-summer months. Further south at Blackstone Park the sun dips below the horizon for a short period at night, producing prolonged twilight and virtually no darkness.

and the impact of climate on vegetation (growth cycles) ; limits on agriculture; impact of climate on the quality of fur and wildlife; ice formation and erosion.

Astronomy - Clear skies and stars; northern lights; short winter days and short summer nights; the "near-midnight sun" and the reasons for the phenomenon; constellations and planets.

4.4.3.3.3 Special Approaches:

Charts indicating freeze-up and break-up dates for ice on the Liard River; precipitation data (snow, rain); extreme maximum and minimum temperatures; telescope and star charts.

4.4.3.4 Human History

4.4.3.4.1 Underlying Principles:

The history of human settlement in the District of Mackenzie is said to date back to 8,000 B.C. The mouth of the Blackstone River and shores of the Liard River are thought, by some investigators, to be of historic or prehistoric significance as settlement areas for early people. The more recent settlement by Slavey and Athapaskan Indians and the later arrival of "Europeans" has altered the lifestyle, the economy, nature of development and land uses in the Liard River Valley.

4.4.3.4.2 Attractions and Subjects of Interest:

Archaeological investigations; settlement of Nahanni Butte; trappers' cabins; evolution of the Athapaskan and Slavey Indians; the Dene people, modern band system and land claims; community life; legends; arts and crafts; languages and colloquial expressions; gold panning, trapping and fishing; log building construction; the river highway;stream and barge access points to the rivers; seismic cuts and exploration; river trails and boat tracking; canoes, scows , barges and kickers; the Liard Highway and recent mining operations in the region.

4.4.3.4.3 Special Approaches:

- visit to Nahanni Butte; tracking a canoe or scow and talks by local trappers and hunters.

4.4.3.5 Economic Development

4.4.3.5.1 Underlying Principles:

Traditionally, the economy of the Liard River Valley has been based on fishing and hunting. With the arrival of the "Europeans" and the founding of Fort Simpson and Fort Liard by the Hudson Bay Company and the Northwest Company respectively, the Liard River became a significant river "highway". The furs and the gold of the region have been of particular significance and have helped to attract people to the north. Today the economy of the Northwest Territories has expanded to include mining, tourism and petroleum products distribution, and associated development in a number of communities.

4.4.3.5.2 Attractions and Subjects of Interest

Historical periods (prehistoric to the present); equipment and techniques used - traplines, traps, preserving furs, marketing pelts (fur-bearing species list) ; fish nets, spears, techniques/methods used; fish species; marketing agents/suppliers e.g. Hudson Bay Company, Northwest Company and X Y Company; gold panning and the use of the sluice; transportation - barges, scows, canoes, tracking trails and lines; firearms, knives and bows; arts and crafts and the present day marketing co-op system and socio-economic impact.

4.4.3.5.3 Special Approaches:

Time chart indicating the relatively rapid economic development in the last 250 years; equipment displays e.g. muskets and trapping equipment;Hudson Bay Company display outlining the barter system between the Indians and the white man; barges and canoes.

4.4.3.6 The Northwest Frontier

4.4.3.6.1 Underlying Principles:

In recent years the Canadian North has generated a great deal of interest in a wide variety of subjects of both national and international concern. Native rights, oil and gas exploration, the Mackenzie Valley pipeline, environmental impact and the 200 mile jurisdiction on the seas (discussed in the Law of the Seas Conferences) are but a few. The Northwest Territories has therefore increasingly become an attractive and interesting region to visit.

Many see the North as a last frontier, relatively untouched by man, and argue that it should be left in its natural state. Others strive to open it up for resource development. This conflict will be evident to all who visit the Territories and the Interpretive Program at Blackstone Park can increase visitors' understanding and appreciation of the complex problems facing the north.

One of the greatest and perhaps the most attractive features of the north is the mystery of the vast lands; the untouched environment, the legends and the challenges of “man and nature”.

4.4.3.6.2 Attractions and Subjects of Interest:

Modern technology and its impact (radio, engines, airplanes, snowmobiles, television) ; land claims; natural resources, exploration and environmental impact; major construction projects e.g. Liard Highway; community life-styles today and in the future; the Dene in the twenty-first century.

4.4.3.6.3 Special Approaches:

- discussions held with guest “speakers”, such as Dick Turner, who has a grasp of the old and new ways of the north.

4.4.4 Notes on Implementation

When establishing the interpretive Program, the following points should be considered:

- Parks Canada and the G.N.W.T. interpretive programs will probably be combined. In addition to providing information and programs for Blackstone Park visitors, the Centre will offer similar services to visitors destined for Nahanni National Park.
- The Interpretive Program should be progressively developed towards its first year of operation in 1983.
- Interpretive approaches are very much a dynamic process, evolving over time and peoples’ perceptions change and issues arise and fade. Park staff must, therefore, be prepared to modify, update and even delete portions of the Interpretive Program in an effort to ensure that the program remains alive, interesting and attractive for all visitors.

- Two tour operators, based in Blackstone Park, should offer tours into Nahanni National Park and a third should specialize on the settlement of Nahanni Butte, the Butte itself, local points of interest and the Liard River.

- Bus tour groups will generally be accommodated overnight at Fort Liard, Check Point or Fort Simpson and will wish to spend at least one day enjoying Blackstone Park and the associated tours. Tour operators should be prepared to book tours in advance to ensure that equipment and programs will be available for up to 20 people at one time.

- Brochures should be prepared for the interpretive program well in advance of the first tourist season in 1983. Each brochure should be based on first-hand, summertime experience of the various locations, routes and attractions described in the brochures.

- Tours and interpretive programs are expected to include trips by boat or float plane in the Liard River, Blackstone River, to Nahanni Butte and the Nahanni River. A variety of transportation will be required for large and small groups including canoes, power boats, scows and float planes. To ensure that visitors will enjoy these excursions to the fullest possible extent, each outfitter and guide should be carefully prepared through training classes conducted by G.N.W.T. and Parks Canada.

4.4.5 References and Resources

The following resources will be useful in developing brochures and interpretive material for the Blackstone Park Interpretive Program.

Crowe, R.B. et al. The Climate of Nahanni National Park, District of Mackenzie, Northwest Territories. Downsview: Atmospheric Environmental Service, Department of the Environment, 1979.

Day, J.H. Reconnaissance Soil Survey of the Liard River Valley. Ottawa: Research Branch, Canada Department of Agriculture, 1966.

Hancock, Lyn. "Nahanni: Falls, Fast Water and Frying Pans". North Nerd, (Fall 1079), Pages 22-29.

Hirvonen, R.P. Report on The Forest Conditions in the Lower Liard River Basin Yukon/Northwest Territories. Forest Management Institute, Department of Forestry and Rural Development, 1968.

Indian and Northern Affairs. Land Use Information Series Map - "Sibbeston Lake Map, District of Mackenzie" . Ottawa, 1972.

Indian and Northern Affairs. The Liard Region - Background Information. Ottawa, (Publication date omitted) .

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Lombard North Planning Limited. Preliminary Study of Locations for Recreation Sites along the Liard River Highway. Winnipeg, 1970.

Rostad, H.P.W. et al. Soil Survey and Land Evaluation of the Liard and Mackenzie River Area Northwest Territories. Saskatoon: Institute of Padology, University of Saskatchewan, 1976.

Smith James K. Alexander Mackenzie, Explorer - The Hero Who Failed: Toronto: McGraw-Hill Ryerson Limited, 1973.

Synergy West Limited. Liard Highway Study, prepared for Public Works Canada. Calgary and Whitehorse, 1975.

Travel Arctic. Explorers' Guide '80. Yellowknife: Government of the Northwest Territories, 1980.

Turner, Dick. Nahanni. North Vancouver: Hancock House Publishers 'Limited, 1975.

5.0 ENGINEERING SERVICES

5.1 BASIS OF ESTIMATES

The requirements for water supply and distribution, waste disposal, electrical distribution and roads are based on the Development Concept (Figure 4) , Components of the Plan (Section 4.2) and the following estimates of maximum occupancy of the park on any one day.

	1983	1987
G.N.W.T. staff, official visitors and outfitters	15	15
Tourists	93	140
Parks Canada staff and official visitors		28
	108	183

5.2 WATER SUPPLY AND DISTRIBUTION

Estimated water consumption is about 22,000 litres per day in 1983 and 40,000 litres per day in 1987. The relatively short development period suggests that the supply system need not be staged, however the distribution system should be staged to match park development.

Preliminary investigations indicate that there are two sources of supply which should be examined in detail during the design stage of the work:

a. Blackstone River,

b. drilled wells.

5.2.1 Blackstone River Supply

A shallow intake and submerged pump might be installed in the Blackstone River just above the point where the river divides around Crescent Island. A 50 mm diameter plastic pipe, buried in a shallow trench would carry the water to a reservoir equipped with a chlorinator.

This option will be feasible only if the water quality and flow rate are satisfactory. Because the intake would be exposed to flood and ice damage, and because water quality would be poor during flooding, the Blackstone River may prove to be an undesirable water supply.

5.2.2 Drilled Wells

A well system would be much easier to maintain on a year-round basis, the quality of water would be more consistent and this system might prove cheaper to install. Detailed soil and water–table data are required in order to evaluate this alternative. From an operational point of view, it may be desireable to establish two wells, one for the G.N.W.T. facilities and one for Parks Canada facilities. In the G.N.W.T. area where water would be used mainly in the summer months only, it could be distributed under pressure, in plastic pipes. The pipes would be buried in shallow trenches and would be drained during the winter.. In the Parks Canada area, a year-round piped system would be difficult and expensive to install and maintain. Although a water truck would be under-utilized it would probably prove to be the most feasible method for distributing water.

5.3 LIQUID WASTES

Low percolation rates of the soil and proximity of park facilities to the river require that a fenced, sewage lagoon be established at a considerable distance from the river. The lagoon location can be accurately determined only after more detailed site investigations, however, it is likely that a site near the North Road about 1000 metres from the River will prove to be satisfactory (Figure 4). The lagoon should be about 100 metres by 100 metres and about 2 metres deep. Some form of lining will probably be required. Rubber lining would prevent growth of weeds around the edges and thus reduce the incidence of mosquitoes.

Two systems for collecting sewage have been considered and should be further analysed during detailed design.

a. a holding tank under each building,

b. a central holding tank.

5.3.1 Holding Tank Under Each Building

This system, used as the basis for cost estimates in Chapter 6, provides a holding tank under each building and a sewage truck which empties each tank regularly and delivers the sewage to the lagoon. Because of the relatively low volumes of sewage, the truck would be grossly under-utilized and because of its special nature, it could not be used for other purposes.

5.3.2 Central Holding Tank

This system would utilize a combination of gravity collectors and low pressure grinder pipes. Several buildings would be connected by gravity lines to a

Central holding tank and the sewage would be pumped from there to the lagoon through a small diameter plastic pipe by a low-head grinder pump. An advantage of this system is that sewage is ground up during the pumping process and biological degradation in the lagoon is thereby accelerated.

5.4 SOLID WASTE

By 1987, the estimated maximum generation of solid wastes (183 park occupants, Section 5.1) will be about 360 kilograms per day. This waste will contain a large percentage of foodstuffs which could attract wild animals. Specially designed receptacles will be required to prevent access by animals; there must be daily collection and disposal. A small, two-ton truck with high side boards will be suitable.

5.4.1 Disposal Systems

The following alternative disposal systems have been reviewed and are recommended for more detailed evaluation during the design stage.

- sanitary landfill in which refuse is compacted to produce about one cubic metre of compacted waste per day; this method requires daily use of a mechanical excavator;
- sanitary landfill in which a mechanical excavator digs a 1.5 metre trench about 100 metres long once a year; refuse is deposited in the trench and covered manually, each day, with about half a metre of earth;
- the most efficient system would be to use an incinerator with a guaranteed spark eliminator.

5.5 ELECTRICITY

The electric power requirement by 1987, based on the facilities listed in Section 4.2 “Components of the Plan”, is estimated to be 40 kilowatts. A diesel generator of this capacity should be installed in a building, in its final location, together with a fuel storage tank with a capacity for about two weeks of fuel. A feasibility study should be carried out on using waste generator heat for heating shower water and wash water.

5.5 The best final location for the generator will be in the Operations Centre at the north end of the park where possible generator noise will have least effect on the camping area and where the generator room can be integrated into Parks Canada facilities. However, an interim generator house with suitable sound insulation could be appropriately incorporated into the GNWT maintenance compound near the Outfitters’ Centre.

Distribution should consist of overhead wires on poles spaced about 70 metres apart. If cost considerations permit, underground distribution would be preferable in the Reception and Campground areas.

Distribution should consist of overhead wires on poles spaced about 70 metres apart.

5.6 ROADS

Major roads in the park should be seven metres wide and most will require a base of about one metre of fill material. In all, about 40,000 cubic metres of fill will be required; some fill will come from lagoon excavation, but most should be gravel from a known source near the Blackstone River bridge (Figure 3). This is the only significant source of gravel in the area and the Federal Government wishes

to share this source. In exchange for the right to remove about 30,000 cubic metres, they would develop the access road and clear the site of t’rees and top soil. They would also provide landscaping after completion of the extraction. It is recommended that this arrangement be agreed because it would substantially reduce park development costs without significant loss to park potential.

6.0 CAPITAL COSTS AND STAGING

6.1 CAPITAL COSTS

The cost to develop the facilities illustrated in the "Development Concept" Figure 4, and described more fully in section 4.2 "Components of the Plan", is estimated to be $1,196,900 (1980 constant dollars) . This amount does not include possible future developments by Parks Canada. (Table 6.1)

TABLE 6.1 SUMMARY OF CAPITAL COSTS

Facility	Cost in 1980 Constant dollars
Roads and Parking Areas	206,000
Walking trails	7,000
Signs	14,600
Registration Information Centre	35,800
Park Supervisor's Residence	39,900
Interpretive Centre (temporary)	16,600
Outfitters' Centre(1)	140,000
Cabins (8)	141,000
Serviced Campsites (33)	111,700
Group Campsite	7,000
Primitive Campsites	6,000
Lookout	8,000
Picnic Area (5 sites)	6,900
Trailer Pump-out	10,000
Water Supply and Distribution	130,000
Waste Disposal	97,000
Electrical Supply and Distribution	195,000
Total	1,171,900

(1) including G.N.W.T. maintenance facilities.

6.1.1 Unit Costs

Costs have been based on the following unit costs (Table 6.2). Square-metre costs for buildings include all fixture and tanks etc., required for operation as set out in Section 4.2 “Components of the Plan”. Costs are in 1980 constant dollars and assume that buildings are not winterized. Design fees are not included.

TABLE 6.2 UNIT COSTS

Facility	Cost Per Square Metre $	Size (m2)	cost ($)
Registration/Information Centre	550	65	35,750
Park Supervisor’s Residence	570	70	39,900
Outfitters’ Centre			
Bunkhouse/supply room	550	80	44,000
Maintenance buildings	370	240	88,800
Compound	30/m		1,200
Cabin	480	30	15,000(1)
Campsite			
Cleaning, grading, levelling	5.7		1,100
Wash House	700	30	-21,000
Primitive Campsite			200
Signs			
large			600
medium			150
markers			50
Main Road			50,000/km
Parking Space	5		150
Walking Trail			500/km
Picnic Table			200
Litter Bin			50
Fireplace			150
Pit Toilet			1,000
Trailer Pump-out			10,000

(1) includes allowance for verandah

- Six cabins and wash house
- 22 serviced campsites and 2 wash houses
- Group Campsite
- Atleast 3 primitive campsites
- Lookout
- Picnic Area
- Trailer Pump-out
- Water supply and distribution
- Waste disposal and collection system
- Electrical supply and distribution

6.2.3 Four-Year Development Program

The recommended development program shown on Table 6.3 takes into account the foregoing staging assumptions, guidelines and priorities. The following is a summary of Table 6.3.

1981	Roads and parking areas, Outfitters' Centre, cabins, serviced campsites, water supply, waste disposal, electrical supply.	$402,300
1982	Further work on roads, parking areas, Outfitters' Centre, Cabins, serviced campsites, water supply, waste disposal, and electrical supply. Commence signs, Registration/ Information Centre, Park supervisor's Residence, Temporary Interpretive Centre, Group Campsite, Picnic Area, Trailer pump-out.	$398,000

1983	(Park-opening year) Further work on roads, signs, Registration/Information Centre Park Supervisor's Residence, temporary Interpretive Centre, Outfitters' Centre, cabins, wash houses, Picnic Area, water supply, waste disposal. Commence walking trails, Primitive Campsite, Lookout.	$306,700
1984	Complete walking trails, signs, Registration/Information Centre, cabins, wash houses.	$ 64,900
		$1,171,900

It should be noted that the staging of costs for some engineering and building projects may have to be adjusted to conform with specific design requirements and with the time of year when construction can be scheduled. Such adjustments should be made after detailed design has been completed. However, design work should be governed by overall budget guidelines such as those presented here.

TABLE 6.3 CAPITAL COSTS AND

Facility		
Roads 4 km "		
Parking		
Outfitters	30	
Lookout	5	
Picnic Area	5	
	40 @ $150	
Walking Trails 14 km		
Signs		
10 $ $600		
40 @ $150		
52 @ $ 50		
Registration/Information Centre		
Park Supervisor's Residence		
Interpretive Centre (Temporary) (1)		
Outfitters' Centre		
Bunkhouse and supply room		44,000
Maintenance buildings		88,800
Compound, pit toilets, dock		7,200
Cabins		
8 cabins @ 15,000		
Wash house 21,000		

TABLE 6.3 CAPITAL COSTS AND

Facility	
Serviced Campsites	
33 sites @ 1,100	36,300
3 wash houses @ 21,000	63,000
Tables, fireplaces, litter bins	12,400
Group Campsite	
Clearing, pit toilets	
Primitive Campsites	
5 sites, 5 pit toilets	
Lookout	
Picnic Area	
Clearing, 5 tables, fireplaces pit toilets, litter bins	
Trailer Pump-out	
Water Supply and Distribution	
Waste Disposal	
disposal sites	52,000
sewage truck	30,000(1)
garbage truck	15,000
Electrical Supply and Distribution	
Total (not including possible future development by Parks Canada)	

(1) collection vehicle may be replaced by

6.2 STAGING

6.2.1 Assumptions and Guidelines

- It is assumed that the park will open in June 1983, when the Liard Highway will be completed between Fort Nelson and the MacKenzie Highway.

- Sufficient facilities and services must be in place in 1983 and 1987 to serve the estimated visitor demand established in Chapter 2, Table 2.4.

- The estimated cost of basic facilities to serve 1983 requirements is about one million dollars. It is proposed therefore that annual capital expenditures of about $400,000 be made in 1981, 1982 and 1983 ,(1980 constant dollars).

6.2.2 Priorities

Based on the foregoing assumptions and guidelines, the following priorities are recommended.

1. Roads and parking areas should be completed to finished grade by June 1983.

2. When the park opens to the public, the following additional facilities should be in place:

   - most signs
   - a substantial length of walking trails
   - most of the Registration/Information Centre
   - most of the Park Supervisor's Residence
   - Interim Interpretive Centre
   - Interim Kitchen
   - a substantial part of the Outfitters' Centre and maintenance facilities

7.0 OPERATIONAL GUIDELINES

7.1 PARKS CANADA AND BLACKSTONE PARK

Parks Canada currently operate Nahanni National Park from an operations centre on the South Nahanni River. Their facilities are about one and a half miles downstream from the settlement of Nahanni Butte and include residences for staff, together with relatively extensive storage and maintenance facilities for boats and equipment related to controlling use of the park and carrying out rescue operations when required.

Recently, consideration has been given by Parks Canada to relocating the facilities, we believe that the following are some of the reasons for the contemplated move:

- to reduce the risk of flooding of the site by high water in the spring;
- to establish the base at a larger site which would more suitably meet current and anticipated space requirements;
- to have better access to the new Liard Highway; this would not only simplify the movement of equipment and staff in and out of the centre, but would increase accessibility to the registration and orientation centre for people wishing to enter Nahanni National Park;
- because the Government of Northwest Territories has decided to establish a campground on the Liard Highway near the mouth of the Blackstone River

(about 25 kilometres downstream from Nahanni Butte) , a joint development of park and interpretive facilities by Parks Canada and G.N.W.T. could have mutual benefits to both governments and to the traveling public.

We understand that a decision by Parks Canada on whether to relocate to Blackstone Park may not be made for some time. We also understand that the Development Plan for Blackstone, showing how Parks Canada facilities and operations might be integrated into the park, will assist Parks Canada officials in evaluating a possible move to Blackstone.

7.1.1 Advantages of Parks Canada Location at Blackstone

- there is no record of flooding on the proposed site; cabins built on the Liard shore are said to have been in place for 50 years without interference from flood waters;
- there is plenty of room for expansion; the distance between the planned facilities and the Liard Highway is about 1000 metres and all of the land is suitable for building;
- the new Operations Centre would be directly connected to the Liard Highway; a second entrance would provide emergency access (Figure 4) .
- there would be room for five staff homes with extensive space between the houses if required;
- a number of facilities could be jointly developed and operated by Parks Canada and G.N.W.T. with mutual benefits and probably cost savings to both parties;

such joint efforts might apply to: Interpretive Centre, maintenance equipment and facilities, staff dining and sleeping facilities;

- the great majority of visitors to Blackstone Park will not be destined for Nahanni National Park, but will be on a highway tour; the proposed jointly operated Interpretive Centre would be a principal attraction at the park and in the Territories; the Centre would substantially enhance the park as a visitor destination;

- the activities around the Parks Canada waterfront including float plane, helicopter and power boat activity would be of considerable interest to tourists and would further enhance the attractiveness of the park to visitors (these functions, of course, would be situated so that there could be no possible interference by visitors with Parks Canada operations).

7.1.2 Disadvantages of Parks Canada Location at Blackstone

From the point of view of G.N.W.T. operations, the advantages of having Parks Canada locate at Blackstone, far outweigh the disadvantages. The following possible weakness in a joint operation have been identified:

- joint operations are always difficult to implement; strong agreement must first be achieved on objectives and policies by head offices, then staff must be selected who can work compatibly towards the objectives; if staff are not compatible the joint operation will suffer;

- discussions to date with Parks Canada personnel indicate that the Interpretive Centre should be located in, or near, the Parks Canada Operations

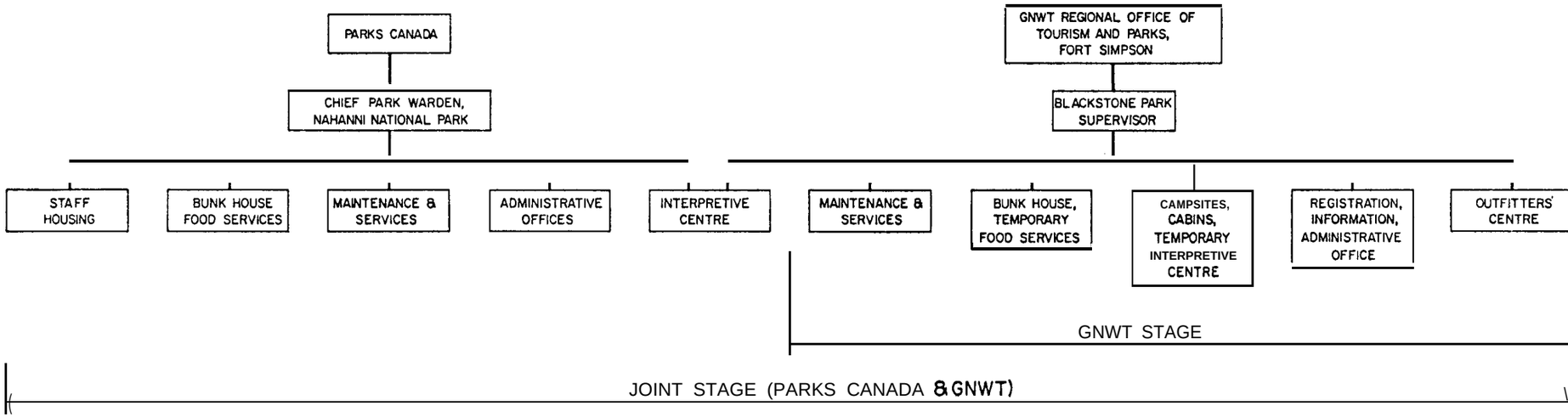
Centre; our design studies suggest that further consideration should be given to placing the Interpretive Centre near the Registration Centre at the south end of the park; while this idea is not at present a strong recommendation, the option for reconsideration should be kept open until further site planning and design work can be done;

- the relocation of Parks Canada operations to Blackstone Park would probably introduce some noise and activity to the park which would not be compatible with the northern wilderness experience that many travelers will be seeking; to partially overcome this weakness, primitive campsites will be located in remote parts of the parkup to two and half kilometres distant from the Operations Centre.

7.2 PARK OPERATION

Plans for the park have been prepared under the assumption that the park will operate for the first few years entirely under G.N.W.T. management and that Parks Canada will eventually locate at the north end of the site as shown on Figure 4. At that time a joint administrative structure would be introduced. It has been assumed also that the land will be vested in the G.N.W.T. and that Parks Canada will be allocated space for its facilities by agreement with G.N.W.T.

Figure 6 illustrates the recommended administrative structure during the two stages of park operation. In the joint operations stage, the two operations will be, to a large extent, physically and administratively separate. Parks Canada facilities will be located at



ADMINISTRATIVE STRUCTURE

the north end of the site and accessible by the North Road while G.N.W.T. facilites will be located along the shore, and at various locations throughout the south part of the park, all of which will be accessible by the South Road, the River Road, the Liard Highway and walking trails.

7.2.1 Facilities Which Might be Jointly Operated

The facilities which might be operated jointly or in close association include:

- the Interpretive Centre,
- certain maintenance facilities,
- services (electricity, water, waste disposal)

7.2.1.1 Interpretive Centre

The Interpretive Centre will be a key attraction to visitors. Prior to joint operation with Parks Canada, an interim centre should be operated by G.N.W.T. near the Registration Centre. When a permanent centre is established it should be operated by one of the authorities, possibly Parks Canada, with space leased to G.N.W.T. (Because of its importance as a visitor service facility and its potential as a park design feature the Centre should be prominently located in the park).

7.2.1.2 Maintenance Facilities

Parks Canada requires a major maintenance installation, whereas G.N.W.T. will require relatively limited facilities. G.N.W.T. should establish its maintenance compound in conjunction with the Outfitters' Centre near the South Road and close to the Park Supervisor's office. We do not see any real advantage in eventually moving this function to the Parks Canada Operations Centre and therefore recommend that the maintenance compounds for Parks Canada and G.N.W.T. be established as separate entities except for the possible sharing (by lease) of special equipment.

7.2.1.3. Bunkhouses

Living accommodation will have to be provided for staff who reside on the site. Parks Canada have requested that eleven bunkhouse beds be included in the plan and we recommend that seven bunkhouse beds be provided for G.N.W.T. staff, outfitters and G.N.W.T. official visitors. We believe that one large bunkhouse would not be a desireable kind of accommodation for a three or four month stay in the park. We therefore propose that Parks Canada and G.N.W.T. bunkhouses be operated separately as illustrated on Figure 4.

7.2.1.4 Services

It is anticipated that G.N.W.T. will commence operations in the park before Parks Canada and that G.N.W.T. will have established services for water supply, electricity, sewage disposal and refuse disposal prior to the arrival of Parks Canada. If Parks Canda decide to relocate to Blackstone, agreements will have to be prepared on cost-sharing or payment. for use of such services.

7.2.2 Management of G.N.W.T. Facilities and Services

7.2.2.1 Supervision and Staffing

General supervision of the G.N.W.T. facilities and services at Blackstone should be undertaken by the Office of Tourism and Parks in Fort Simpson. Day-to-day supervision should be provided by a Park Supervisor in residence at the park during the tourist season and for some weeks before and after the season. An employment period of about six months would provide for pre-season and post-season duties.

The Park Supervisor's areas of responsibility should include operation and maintenance of:

> Campsites, cabins, wash houses, walking trails, roads, waste disposal, water supply, electrical supply, Temporary Interpretive Centre, temporary kitchen, bunkhouse, Outfitters' Centre, lookout, picnic area and Registration/Information Centre interpretive programs, visitor entertainment and park security.

To assist the Park Supervisor in his duties there should be a small staff consisting of a Registration Officer, an Interpretive Centre Officer, and at least one maintenance man. Outfitter services should be operated on a concession basis under the general control of the Park Supervisor.

7.2.2.2 Alternative Management Arrangement

During discussions with Tourism and Parks staff, consideration was given to treating the entire park operation as a concession. In the consultants' opinion this approach has two major weaknesses. Firstly, the key staff people would not be employees of G.N.W.T. and would therefore not be directly

responsible to G.N.W.T. We believe that a project of such importance should be supervised by a person in the direct employ of the owner. Secondly, from the point of view of visitors, park personnel will represent the Government of the Northwest Territories. We believe that this representation can be carried out most effectively by individuals with direct responsibility to the Territorial Government.

7.3 DESIGN AND CONSTRUCTION

It is assumed that all planning, design and construction supervision of G.N.W.T. facilities will be carried out by G.N.W.T. departments or their consultants. A principal objective of the project, is to achieve maximum economic benefits for the people in nearby communities. Construction work should therefore be carried out wherever possible through contracts and assignments to local contractors, companies, organizations and individuals.

7.4 FUNDING

It is anticipated that all development and operating costs for the Park will be paid for by G.N.W.T. by user fees and by Parks Canada as follows:

- Camping facilities, picnic facilities, G.N.W.T. maintenance facilities, lookout, most signs, Registration Centre, temporary Interpretive Centre, Park Supervisor's Residence, temporary kitchen, Outfitters' Centre, trails and cabins: G.N.W.T. and user fees.

- Permanent Interpretive Centre: built and owned by Parks Canada; space leased by G.N.W.T; a contribution by G.N.W.T. to capital costs should be considered.

- Roads : shared capital and operating costs between G.N.W.T. and Parks Canada.

- Water Supply: separate systems should be installed if possible; if that is not feasible, ownership should be by Parks Canada (due to year-round use) and G.N.W.T. should pay for water used on a pro-rata basis.

- Sewage Disposal: shared capital cost for installation of the lagoon; collection should be paid for on a pro-rata basis.

- Electricity: shared capital cost for supply and distribution, pro-rata cost sharing for consumption.

- Refuse Disposal: shared capital cost; shared operating cost for dump management; separate collection systems for each authority.

- Parks Canada Operations Centre: Parks Canada.

- Parks Canada housing: Parks Canada.

7.5 TIMING OF PARKS CANADA DEVELOPMENT

The benefits which would accrue to Blackstone Park and to the traveling public by having Parks Canada locate at Blackstone have been indicated throughout this report. We believe that these benefits should be realized at the earliest possible time and that a definite decision to relocate would be of considerable benefit to tourism in the Territories. In addition, planning and design of the park and the individual facilities and services could be more confidently and economically undertaken if the decision to relocate were finalized at an early date.

7.6 MARKETING STRATEGY

7.6.1 Introduction

The marketing strategy for Blackstone Park must be cognizant of the following factors:

- The resident population of the Northwest Territories is now, and is expected for many years to remain, relatively small and dispersed. As a result, unlike southern Canadian tourist areas, there is not a large basis for domestic tourism.

- Non-resident markets are a long distance away. Although the Canadian market, particularly Alberta, will continue to be the most important one for Blackstone, the opening of the Liard Highway will provide an excellent opportunity for increasing the market share from British Columbia, the Yukon and Alaska.

- The Northwest Territories has a strong appeal to tourists seeking a unique “wilderness” or "true-north” experience.

- As the Northwest Territories is virtually a “once in a lifetime trip”, repeat visitation is not an important consideration.

- The Northwest Territories is perceived by most people as being a summer-season tourist destination.

7.6.2 Approach

Although Blackstone Park has the potential of being an extremely attractive park in its own right, it will be important to take advantage of the proximity to, and association with, Nahanni National Park. The

recognition of Nahanni as a UNESCO World Heritage Site will provide Blackstone with an immediate profile which, through the use of conventional advertising, publicity and promotion techniques, would normally take a number of years to build. Blackstone will provide visitors with an alternative to the more adventuresome experiences associated with Nahanni National Park.

Eventually, the marketing strategy for Blackstone should be highly target-market oriented, concentrating specifically on those markets which will find Blackstone's northern outdoor experiences most appealing. Until such time as research provides these specific market identities, the marketing plan should concentrate more generally on Alberta (Edmonton and Calgary), British Columbia (Vancouver), Ontario (Toronto), Minnesota (Minneapolis - St. Paul) and California (Los Angeles) . Although the size of the current market (number of visitors) makes it unfeasible at present, future consideration should be “given to the German and Scandinavian markets.

Magazine advertising within the above mentioned markets should be restricted to those magazines read by canoeists, wilderness campers, back-packers or nature photographers, etc. Direct mailings of park brochures to identified special interest groups should be encouraged, as should familiarization tours for group tour operators and travel editors of appropriate high profile magazines. A considerable amount of quality “free advertising” can be obtained by encouraging magazines to publish articles on the Territorial Parks; and films which can be used as fillers in movie theatres or on television, should continue to be encouraged.

Border-point information centres and information centres south of Blackstone will continue to be important vehicles for promoting Blackstone as well as the entire Territorial Parks system. The Explorers' Guide is an excellent document; reinforcing it with specific brochures on the park facilities, programs and tours, will ensure a high level of use of Blackstone by visitors who have elected to explore the Territories.

8.0 IMPACT ASSESSMENT

8.1 ECONOMIC IMPACT

The development of Blackstone Park and its ancillary activities is anticipated to have a substantial impact on the residents in the immediate area of the park site (i.e. Fort Liard, Fort Simpson and Nahanni Butte) . While the park itself is expected to have an operating deficit for at least the first five years, its development and operation will create new and increased employment opportunities, personal income and additional community revenues through tourist and tourist-related expenditures. Some of this impact will be short-term. During the years from 1981 through 1984, a large annual expenditure will be required to develop the park and its necessary facilities. The development will be labour intensive and we anticipate that more than 60% of the materials and labour required to develop the park will be available from nearby communities.

8.1.1 Blackstone Park Revenue

We have projected that the park will accrue $8,355 in gate receipts for day and overnight use during the first year of operation. By 1987, the fifth year of operation, the total number of user groups will have increased from 1,085 to 1,691, resulting in gate receipts of $13,162.50. Table 8.1 outlines the total receipts for each of the first five years of operation. The suggested user fees are $7.00 per night for a serviced campsite, $5.00 per night for a group campsite, $3.50 for a primitive site and $15.00 per night for a cabin. Day use

TABLE 8.1 ESTIMATED RECEIPTS: BLACKSTONE PARK

Year	Type of Facility	Park Fee Per Site	Day-Use Fee Per User Group	Use Distribution*	Estimated Revenue
1983	Serviced Site	$7.00		650	$ 4,550.00
	Group Campsite	5.00		110	550.00
	Primitive Site	3.50		90	315.00
	Cabin	15.00		185	2,775.00
	Day Use		$2.00	45	90.00
	Tour Groups		15.00	5	75.00
					$ 8,355.00
1984	Serviced Site	7.00		715	5,005.00
	Group Campsite	5.00		115	575.00
	Primitive Site	3.50		100	350.00
	Cabin	15.00		210	3,150.00
	Day Use		2.00	50	100.00
	Tour Groups		15.00	6	90.00
					$ 9,270.00
1985	Serviced Site	7.00		795	5,565.00
	Group Campsite	5.00		120	600.00
	Primitive Site	3.50		120	420.00
	Cabin	15.00		230	3,450.00
	Day Use		2.00	55	110.00
	Tour Groups		15.00	8	120.00
					$10,266.OO
1986	Serviced Site	7.00		895	6,265.00
	Group Campsite	5.00		125	625.00
	Primitive Site	3.50		140	490.00
	Cabin	15.00		265	3,975.00
	Day Use		2.00	60	120.00
	Tour Group		15.00	10	150.00
					$11,625.00
1987	Serviced Site	7.00		1,020	7,140.00
	Group Campsite	5.00		130	650.00
	Primitive Site	3.50		165	577.50
	Cabin	15.00		300	4,500.00
	Day Use		2.00	65	130.00
	Tour Groups		15.00	11	165.00
					$13,162.50

* It is assumed that, of those campers using Blackstone Park as a jumping off point to, or departure from, Nahanni National Park, 80% will use group sites, 15% serviced sites and 5% cabins.

patrons should be expected to pay $2.00 per vehicle for entrance to the park. We anticipate that proximity to the Liard River, Nahanni Butte and Nahanni National Park with its international reputation for scenery will generate tour group bus business. A day use entrance fee of $15.00 per tour group bus is recommended.

8.1.2 Employment Generated

The development of Blackstone Park is expected to generate over 5,600 person days of employment in 1983, the first operating season. In order to effectively operate the park for an estimated 92 day season, the Park Supervisor will be required on site approximately 180 days, the Registration Officer 110 days, the Interpretive Centre Officer 100 days and the Park Maintenance Officer 150 days. After the administrative set-up and opening season problems have been overcome, the Park Supervisor will require less time on site. In subsequent years (1984 through 1987), we anticipate that 150 days will be adequate.

If the sale of handicrafts follows a similar pattern to that of other communities in the Northwest Territories, we expect that the craftsmen at Nahanni Butte will be employed for 160 days through purchases of visitors to Blackstone. Outfitters operating out of the park can expect approximately 205 days of employment in 1983. Those outfitters taking tourists to Nahanni Butter or on a tour of the Liard River should be employed for approximately 135 days. We estimate that a tour to either location will require

TABLE 8.2 EMPLOYMENT AND PERSONAL INCOME GENERATED THROUGH OPERATION OF BLACKSTONE PARK

Position	Income Per Day	1983 Person Days of Employment/ Season	1983 Income	1987 Person Days of Employment/ Season	1987 Income
Park Supervisor	$50.00	180	$9,000	150	$7,500
Registration Officer	40.00	110	4,400	130	5,200
Interpretive Centre Officer	35.00	100	3,500	100	3,500
Park Maintenance Officer	40.00	150	6,000	150	6,000
Craftsmen (Nahanni Butte)	35.00	160	5,600	260	9,100
Tradesmen Employed in Project Construction and Development	40.00	3,920	156,800**		
Tradesmen Employed in Producing Material for Construction and Development	45.00	630	28,500***		
Nahanni Butte/Liard River Outfitters	50.00	135	6,750	255	12,750
Nahanni National Park Outfitters	60.00	70	4,200	85	5,100
		5,455	$244,750	1,130	$49,150

* In constant 1980 dollars

** It has been assumed that 55% of the $316,700 for capital costs will be for labour and that 90% of that labour will be available within the communities of Fort Liard, Fort Simpson and Nahanni Butte.

*** It has been assumed that 25% of the materials required for the development of Blackstone Park will come from within the communities above and that 80% of the cost of producing the materials locally will be attributable to wages paid to local tradesmen.

the major part of a day. Parks Canada figures indicate that approximately 30% of visitors to Nahanni National Park employ a guide. Based on ‘our projection of 135 user groups for 1983, we have estimated that outfitters/guides will be employed for 70 days.

Approximately 4,550 person days of employment will be required from tradesmen involved in development, construction and supply of materials for the park. As indicated in Table 8.2, we have estimated that 3,920 person days will be required in local construction and development labour and 630 days will be required in the local production of materials. Conversations with area residents have led us to believe that approximately 90% of the labour required for construction and development can be obtained from the local communities.

In addition, 80% of the cost of locally produced materials required for the park will be in the form of salaries and wages. By the fifth year of operation (1987) when all development has been completed, the park will generate approximately 1,280 person days of employment.

8.1.3 Personal Income Generated

We have based our calculations of the total income generated on the pay levels outlined in the Public Service Association Collective Agreement. Accordingly, we have assumed $35.00 per day for the Interpretive Centre Officer and the craftsmen. The Registration Officer, Park Maintenance Officer, and construction and development tradesmen have been included at

a daily rate of $40.00 each. A variety of skill levels will be required for the construction and development of the park, including carpenters, carpenters' assistants, manual workers, and light and heavy equipment operators. Determination of a more exact figure for the tradesmen would require a more precise indication of the number of persons in each category. Since such an estimate is beyond the scope of this study, we have used an average of $40.00 per day. In determining the pay scale for the tradesmen employed in the local production of materials, we have assumed that a higher overall skill level will be required and we have, therefore, assumed a figure of $45.00.

The current pay scale in the Northwest Territories for a position with the responsibilities of a Park Supervisor is approximately $50.00 per day. In determining income levels for the outfitters, we allocated a higher daily rate to the outfitters serving as guides to Nahanni National Park primarily because the average time required for such a trip is approximately five days as opposed to less than one day for those taking user groups to Nahanni Butte or along the Liard River.

Total income accruing to local residents as a result of employment on site for the development, construction or operation of the park or its related offsite activities has been projected at $224,750 in 1983. By 1987, all capital development will have been completed. As a result, we estimate that approximately $49,150 in personal income will accrue to the local communities in 1987 (Table 8.2).

8.1.4 Other Tourism Related Income

The income accruing to local communities beyond that paid in salaries and wages to develop and operate the park and its related activities is small by comparison. We have determined two sources from which additional income can be expected as a result of the park development: sale or rental of outfitting equipment; and sale of locally produced material needed in the construction and development of Blackstone Park. About $9,400 may be expected to accrue to local people from these sources in 1983 and about $3,600 in 1987 (Table 8.3).

We estimate that approximately 10% of the 900 overnight user groups in 1983 will require a canoe, fishing equipment, boating equipment, propane stove or lantern etc. We have allowed $25.00 per group for the rental or purchase of outfitting equipment. In arriving at this allowance we have assumed that user groups passing through Blackstone enroute to Nahanni National Park will arrive fully equipped and that it will be other types of visitors who may need such equipment. In the first year of operation we have estimated a total of $2,000 in revenue from this source (Table 8.3) .

TABLE 8.3 ECONOMIC IMPACT:

BLACKSTONE PARK

Receipts		1983	1987
Estimated Park Revenue		$8,355	$13,162.50
Estimated Revenue from Outfitter Lease*		$284	$388
Estimated Local Income from Salaries and Wages		$229,350	$49,150
. Park Supervisor	9,000		7,500
. Registration Officer	4,400		5,200
. Interpretive Officer	3,500		3,500
. Park Maintenance Officer	6,000		6,900
. Craftsmen	5,600		9,100
. Tradesmen	189,900		
. Outfitter	10,950		17,850
Estimated Revenue from Locally Produced Materials Required for Park Development		$ 7,130	
Total Revenue Arising from Blackstone Park Project		$247,135	$65,912.50

* Based on a flat rate of $100 for space and utilities, plus 8% of gross sales. (Gross sales = net income from rentals plus cost of lease.)

TABLE 8.3 ECONOMIC IMPACT:

BLACKSTONE PARK

(Continued)

Expenses		1983		1987
Capital Costs, Labour and Materials		$315,700		
Salaries and Wages		$ 22,900		$22,200
. Park Supervisor	9,000		7,500	
. Registration Officer	4,400		5,200	
. Interpretive Centre Officer	3,500		3,500	
. Park Maintenance Officer	6,000		6,000	
Operating Costs (Supplies, Materials Services)		$5,600		$5,600
Total Capital and Operating Costs of Blackstone Park		$345,200		$27,800

Note: All estimates are in constant 1980 dollars and reflect only those increases attributable to increases in day-use at Blackstone Park.

The sale of locally produced materials needed in the construction and development of the park is expected to leave another $7,130 in the local economy in 1983. In later years this amount will vary according to the overall construction activity in the park (Table 8.3) .

8.1.5 Total Estimated Capital and Operating Costs

We have estimated that the total capital cost for the park including road construction will be $1,171,900 (in constant 1980 dollars). This cost is proposed to be phased over a five-year period from 1981 until 1984 as follows:

1981	1982	1983	1984
$402,300	$398,000	$306,700	$64,900

The total estimated operating cost of the park during the first five years of operation from 1983 until 1987 will be approximately $140,500 (in constant 1980 dollars). i.e. an average of about 28,000 per year. (Table 8.3).

Construction and operation of the park between 1981 and 1987 is expected to cost approximately $1,311,900.

A portion of this, approximately $50,000, will be returned from gate receipts, and from outfitter leases.

Our projections indicate that Blackstone Park will operate at a deficit from year one through year five and probably longer. The 1983 operating deficit will be approximately $20,000 while the deficit in 1987 will be about $14,000 (Table 8.3, operating costs less park revenues, and revenue from outfitter leases.)

The overall impact of the development and operation of Blackstone Park, however, is expected to be positive. Through ancillary activities we estimate the park will generate 365 man-days of employment and $16,550 in personal income during the first year of operation and 600 man-days of employment and $26,950 in personal income by the fifth year (Table 8.2). This revenue will be generated through the sale of handicrafts, guided tours and the sale or rental of outfitting equipment. In addition, over the first five operating years the total revenue from these sources will probably amount to about $105,000. In addition, most of the capital cost of developing the park will accrue to the local communities in salaries, wages, and receipts from the sale of locally purchased materials. In 1983, monies returned to the community from these sources is expected to amount to about $197,000 (i.e. about 62% of capital costs) [1]. During the entire four-year construction period about $600,000 will probably accrue to the communities as a result of capital development [2]. This is equivalent to about 3500 man-days of work per year.

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(1) income to tradesmen plus revenue from locally produced materials.

(2) the overall percentage of capital costs will probably be about 50% due to heavy equipment purchases such as the generator and vehicles.

Furthermore, there will be annual revenues of about $22,ooo in wages accruing to park staff (680 mandays per season, Table 8.2).

8.2 SOCIAL AND CULTURAL IMPACT

The principal social impact attributable to park development at Blackstone will arise from new income in the area. The greatests effects will occur during 1983 and 1984 when construction and operation, together, will provide over 5000 man-days of work per season. That will be equivalent of about 38 people working five days a week for six months. When construction has been completed, annual employment will be equivalent to about thirteen people working five-days a week for four months.

During construction, a camp will probably have to be established at, or near, the site until park buildings are sufficiently advanced to be used by construction workers. When construction has been completed, a small staff of five to ten people, including outfitters who will be at the park between trips only, will reside at the park during the tourist season.

If Parks Canada establish a base at Blackstone, it is anticipated that up to five families will reside at the park. These would be augmented by about seven seasonal staff who would probably commute to nearby communities on a weekly or hi-weekly basis.

Some spring-season beaver trapping and fall-season moose hunting may take place in the Blackstone vicinity. Since these hunting periods occur at non-camping periods, there is not likely to be conflict between hunters and tourists. As a precautionary measure, the park boundaries have been drawn to minimize the amount of land which may be assigned to park and tourism uses and to provide for wide buffer zones between tourist activity and possible hunting areas.

There are no known archeological sites in the park; however, earlier studies indicate that ancient or prehistoric settlement may have occured in the vicinity of the Blackstone River mouth. All workers in the area should be cautioned to be on the lookout for traces of such settlements and to report any findings to the Regional Office of Tourism and Parks in Fort Simpson.

8.3 ENVIRONMENTAL IMPACT

The introduction of the Liard Highway has started a new development process in the Liard Valley which must be strictly controlled if unsightly strip development, such as occurs elsewhere in North America, is to be avoided. We understand that such policies are already partially in place and that nodes of residential or commercial settlement along the highway will be aggressively discouraged except at established nodes at Fort Liard and Check Point.

To prevent undesirable development in the vicinity of the park, wide buffer zones are proposed to the north and south. East of the highway a buffer zone of at least one hundred metres is proposed. In this way no development or change may be undertaken on either side of the highway, along the full length of the park, without the approval of Tourism and Parks.

Trees, bushes and ground cover are essential to the proper enjoyment of park areas. Careful control must therefore be exercised over all cutting of vegetation. A landscape architect should be retained to ensure that only essential clearing is undertaken for roads, buildings and campsites. Nevertheless, considerable clearing will be required to provide the necessary development spaces, and to allow valley breezes to flow through the area and to minimize the unpleasantness of mosquitoes and blackflies. Furthermore, the gently sloping site will have to be terraced to accommodate campsites and buildings. These changes in land profile and

replanting of graded areas will alter the site, but under the careful supervision of landscape architects, engineers and architects an attractive area can be established which will enrich the natural features of the valley.

The proposed lined and fenced sewage lagoon and fenced water disposal area will be located more than a kilometre from the river. It is anticipated that no pollution of the river will occur from these sources.

It is believed that no part of the park site is within a registered trapline, and that fur bearing animals of economic value rarely frequent the park area. There are plentiful rabbits, squirrels and birds which will probably continue to inhabit the area after the park is in operation. Bears will only be attracted if garbage is not properly covered and protected.

Little or no impact on fish life is anticipated, however further study and experience are required before the impact on fishlife can be properly evaluated.