CP 2110-10

The LeBreton Flats Plan

incorporating Official Plan Amendments

National Capital Commission / Commission de la capitale nationale

January 1997

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incorporating
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prepared by the National Capital Commission

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INTRODUCTION

The information provided in this document and the proposed City of Ottawa and Regional Official Plan Amendments which appear in Sections 9 and 10 represent the culmination of seven years of joint effort. Initiated in 1989, the tripartite planning process brought together the National Capital Commission, the City of Ottawa and the Regional Municipality of Ottawa-Carleton. Their task was to chart a future for one of the most important sites in the Capital - LeBreton Flats.

This tripartite process involved the public from the outset, and focused on finding common ground amongst a myriad of competing priorities and interests. The resultant plan establishes a blueprint for a new LeBreton Flats community. Driving the planning was an unwavering conviction shared by all that the time had come to bring life and activity back to the Flats.

The success of this tripartite process is not only significant because a plan for LeBreton Flats was produced. Many other benefits result. Three levels of government joined forces and worked together, bringing a proposal forward for one of the most challenging pieces of land in the Capital. The major land use decisions for LeBreton Flats, from this point forward, lie with municipal governments. The NCC and the federal government will be instrumental in bringing approved plans to fruition.

Recent decisions of the three governments provided the basis for the Official Plan Amendments now being presented for consideration. In 1996, Councils of the City of Ottawa and the Region, and the Commission of the NCC approved a land agreement which commits the three parties to a process of planning approvals and future land transactions that will lay the groundwork for the redevelopment of LeBreton Flats. Through the approval of this land agreement, it was decided that the NCC would submit applications, based on the tripartite concept plan for LeBreton Flats, for Amendments to the Official Plans of the City of Ottawa and the Region.

The National Capital Commission proudly presents this document in support of the Official Plan Amendment applications.

1.0 BACKGROUND

1.1 History of LeBreton Flats

LeBreton Flats was an important community in the history of the City of Ottawa. The area was first settled in the early 1800s and, by the 1850s, lumber companies run by lumber barons such as Henry Bronson, Ezra Butler Eddy and John R. Booth had established themselves on LeBreton Flats. The late 1800s saw the beginning of industrial development on the site which was to shape the Flats until the 1960s. The Canadian Pacific Railway freight terminal, the Eddy paper plant, Hydro power facilities and the City's first waterworks building were located on LeBreton Flats and the adjacent islands.

On April 26, 1900, the "Great Fire", which destroyed much of Ottawa and Hull severely damaged LeBreton Flats. The community, both residential and industrial, rebuilt. The railway marshalling yards were also constructed at this time.

In 1962, the Federal Government acquired and cleared the buildings on LeBreton Flats to accommodate federal office buildings and the Ottawa River Parkway. However, due to federal government policy decisions, the federal offices were eventually located elsewhere in the core of the City of Ottawa and to Hull. A number of planning efforts were undertaken in the seventies and eighties to determine the future vocation for the Flats; however, none came to full fruition. For example, during the mid-seventies, Canada Mortgage and Housing Corporation proposed to construct housing. However, only a demonstration project south of Scott Street was constructed, while plans for north of Scott Street did not materialize.

In 1989, a new planning process for LeBreton Flats was initiated by the National Capital Commission, the Regional Municipality of Ottawa-Carleton and the City of Ottawa to develop a plan that will see the eventual redevelopment of the lands north of Scott Street. Initially, five land use concepts were prepared. In 1991, following extensive community and political consultation and a review of technical studies, a preferred concept was chosen.

Generally, the NCC owns most of LeBreton Flats. The City of Ottawa owns some of the former local streets and two and a half of the heritage bridges crossing the open aqueduct, and the RMOC owns the aqueduct, the pumping station, three and a half heritage bridges and a few regional roads. In order to ensure that the concept can be implemented, a land agreement to redistribute the current patchwork of ownership was negotiated between the NCC, the RMOC and the City of Ottawa. This Land Agreement was approved by the Treasury Board, the NCC and the Councils of the Region and the City in 1996.

The Land Agreement requires that the National Capital Commission seek planning approvals for the concept plan from the City and the Region through the municipal and regional planning processes. Formal Official Plan Amendments begin this process. If the Councils of the Region and the City approve these applications, the land agreement will be implemented, and lands will be exchanged and easements granted on a non-cash basis. These include lands for the future realignment of the Transitway and infrastructure improvements.

The following report presents the existing conditions, the tripartite planning process and the plan for the New LeBreton Flats Community from which policies are extracted to form the basis of a Secondary Policy Plan for the City of Ottawa Official Plan. The Regional and City Official Plan Amendments appear in Sections 9 and 10.

BACKGROUND

2.0 LOCATIONAL CHARACTERISTICS

2.1 Site Location

LeBreton Flats is located in the City of Ottawa, immediately west of what is referred to as the "downtown". The Flats are approximately 66 hectares in size. As shown on Figure 1, the area is bounded by the Canadian Pacific Rail Corridor to the west, the Ottawa River to the north, Commissioner Street and the tailrace to the east and Scott- Wellington-Albert Streets to the south.

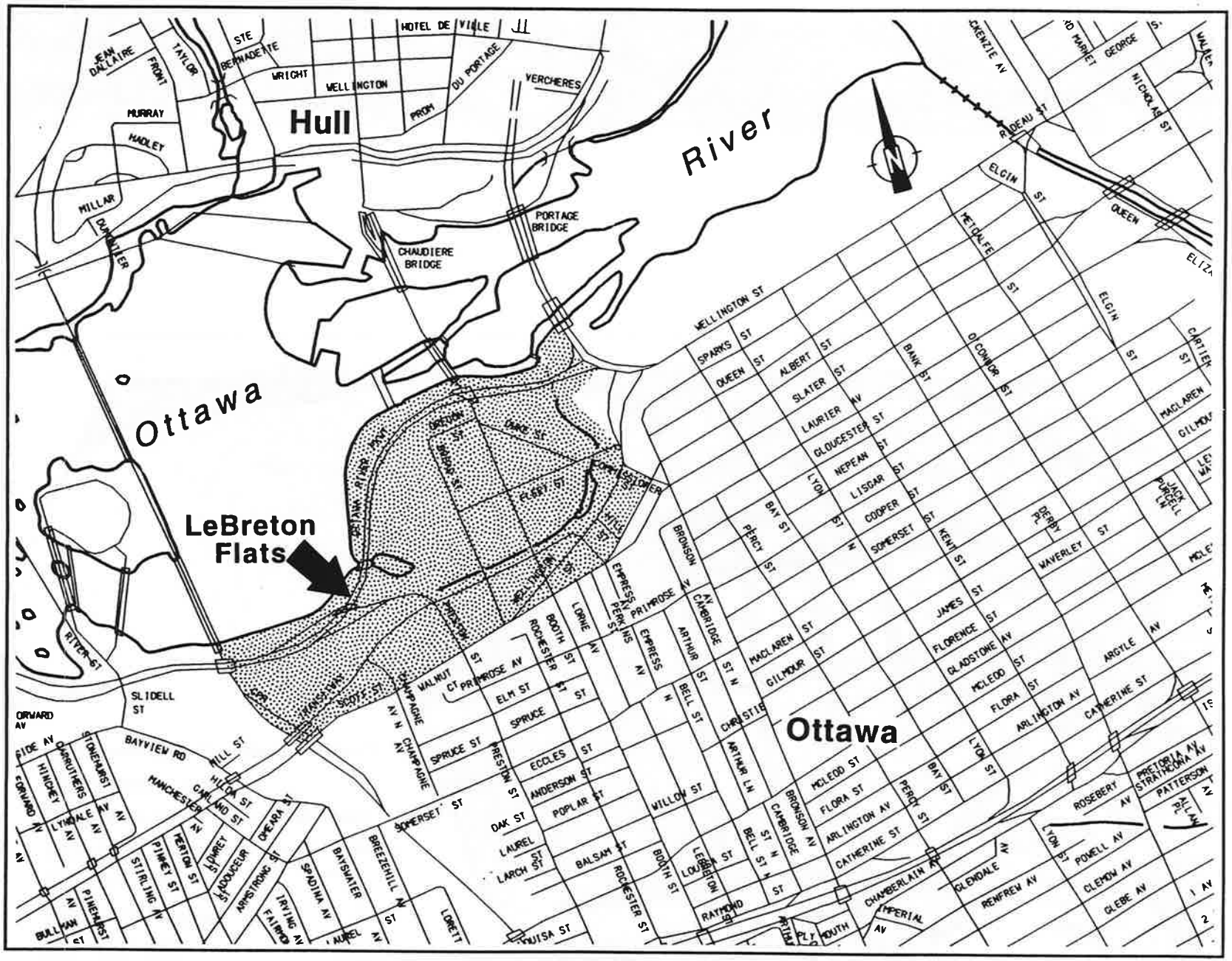
2.2 Land Ownership

One of the objectives of the recently completed Tripartite Planning Process was to resolve the current fragmented land ownership pattern. In addition to the NCC, the other major land owners are the Regional Municipality of Ottawa-Carleton and the City of Ottawa. The fragmented land ownership pattern contributed to the past planning difficulties. Of the approximate 66 hectares, about 78% is owned by the NCC, about 14% is owned by the Region and 8% is owned by the City. This current ownership pattern is shown on Figure 2.

2.3 Existing Land Uses

The majority of the site is currently vacant, with the exception of the seasonal use of 1.3 hectares for an NCC campground, and a restaurant (The Mill) located along the Ottawa River. Figure 3 details the existing land uses. The Regional Transitway runs east/west in the southern portion of the site. There are several parking lots on the southeastern edge of the site and there is physical evidence of pavement from the former roads that were part of the previous LeBreton Flats community (Ottawa, Sherwood, Lloyd and Lett Streets). Oregon, Fleet, Broad, Duke and parts of Wellington Street remain open and maintained. In addition, the National Capital Commission maintains a recreational pathway crossing the site. A number of informal paths criss-cross the site as well.

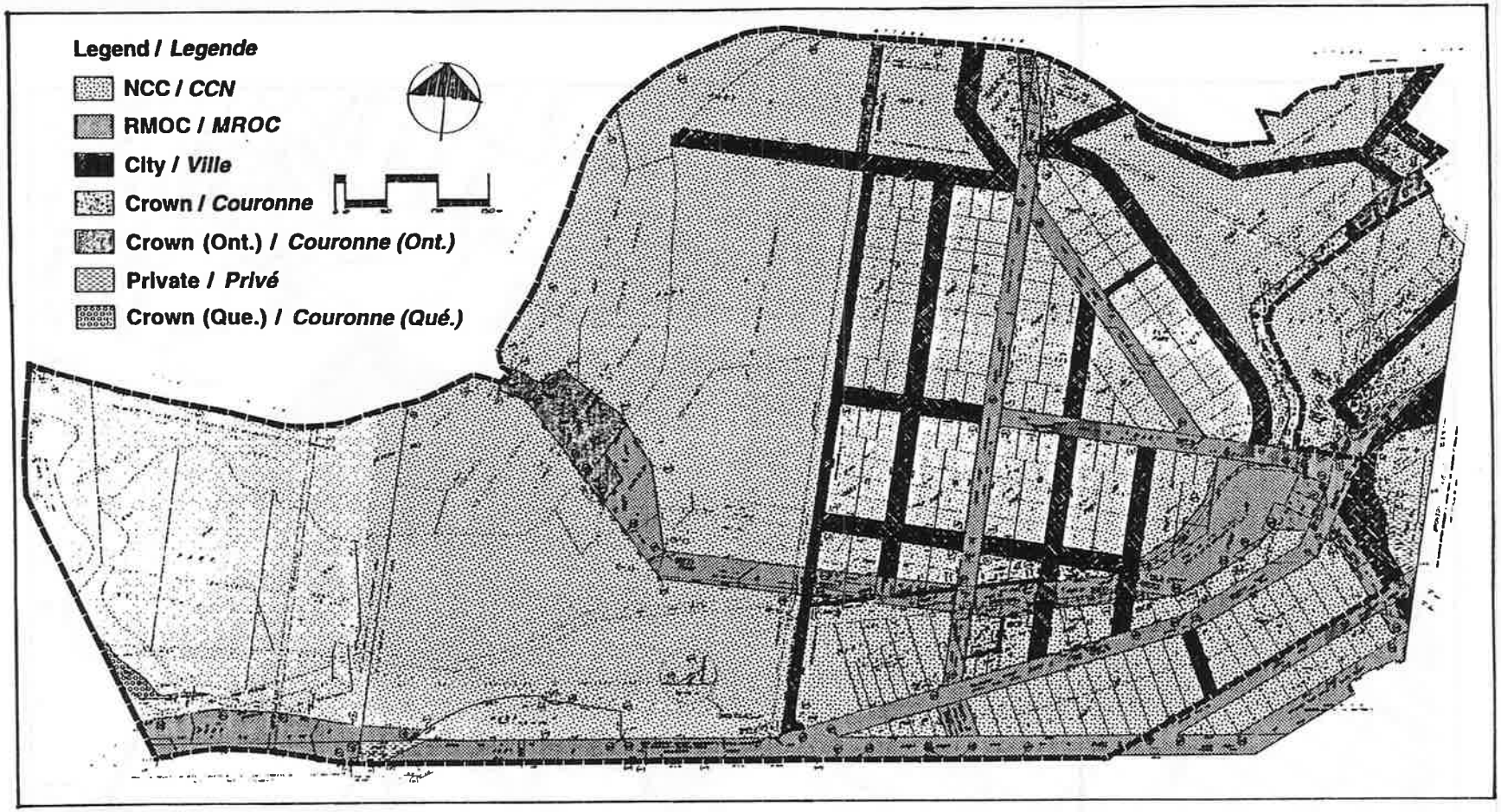
A municipal waterworks system, the majority of which was constructed in the 1870s, crosses the southern section of the Flats. It is comprised of an open and buried aqueduct, the Fleet Street pumping station building and forebay, the tailrace and seven bridges that cross the aqueduct. A buried aqueduct was constructed under the Ottawa Street alignment in 1912. The function of the system is to feed water from the Ottawa River via the aqueduct (originally using the open, and then after 1912 the buried), to the pumping station where the water powers turbines that create hydroelectric power to pump drinking water into the downtown. Water returns to the Ottawa River via the tailrace. The tailrace is a ravine just north of Pooley's Bridge whose steep slopes are heavily treed. This waterway (which is the outflow from the pumping station) is very fast flowing



LeBreton Flats
Les plaines LeBreton

Site Location
Plan de localisation

Fig. 1



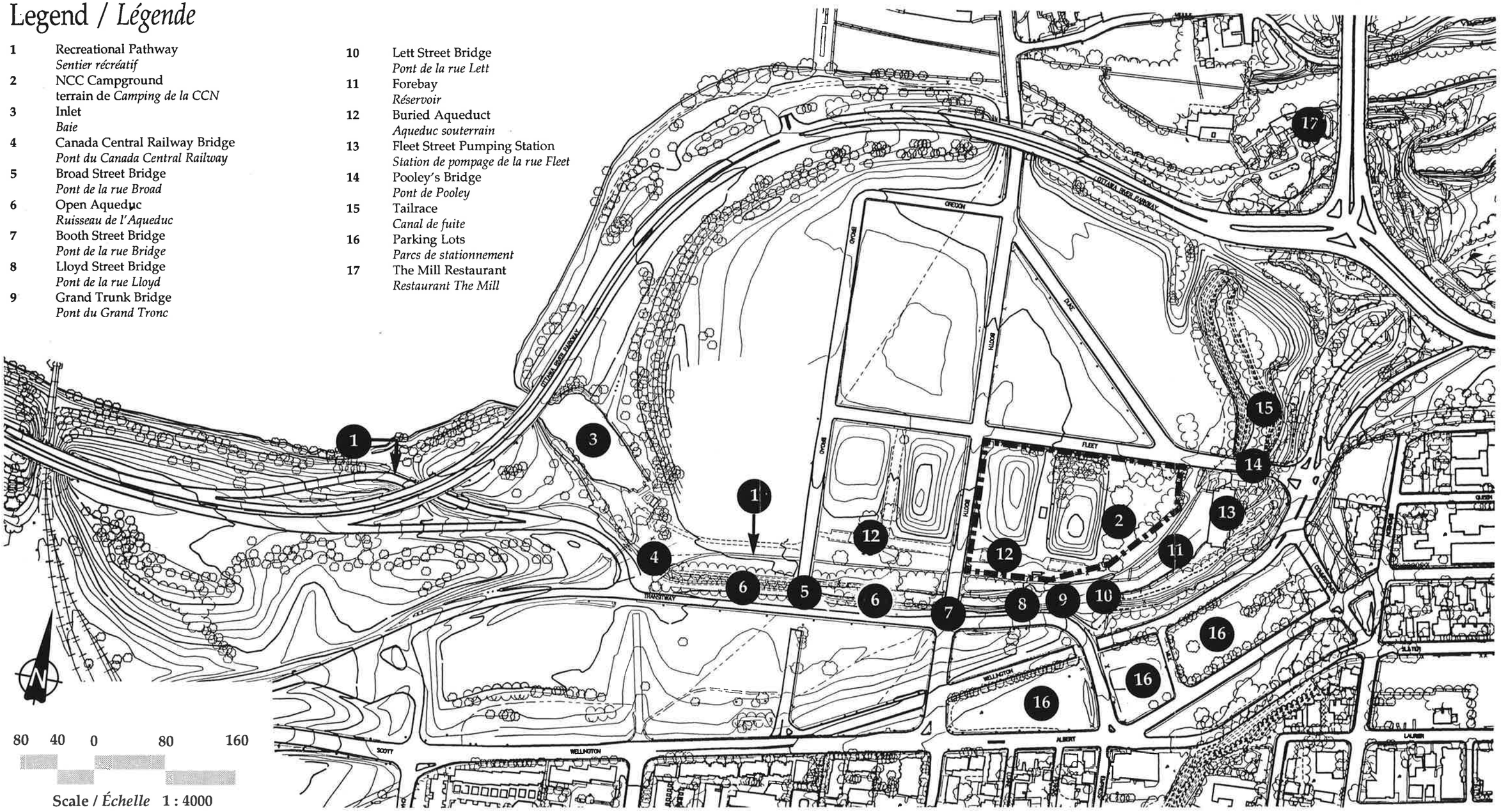
LeBreton Flats
Les plaines LeBreton

Current Land Ownership
Structure foncière

Fig. 2

Legend / *Légende*

1 Recreational Pathway
Sentier récréatif
2 NCC Campground
terrain de *Camping de la CCN*
3 Inlet
Baie
4 Canada Central Railway Bridge
Pont du Canada Central Railway
5 Broad Street Bridge
Pont de la rue Broad
6 Open Aqueduc
Ruisseau de l'Aqueduc
7 Booth Street Bridge
Pont de la rue Bridge
8 Lloyd Street Bridge
Pont de la rue Lloyd
9 Grand Trunk Bridge
Pont du Grand Tronc
10 Lett Street Bridge
Pont de la rue Lett
11 Forebay
Réservoir
12 Buried Aqueduct
Aqueduc souterrain
13 Fleet Street Pumping Station
Station de pompage de la rue Fleet
14 Pooley's Bridge
Pont de Pooley
15 Tailrace
Canal de fuite
16 Parking Lots
Parcs de stationnement
17 The Mill Restaurant
Restaurant The Mill



LeBreton Flats
Les Plaines LeBreton

Existing Land Uses
Utilisation actuelle des terrains

Figure 3

and contains rapids which are and will continue to be used as a kayak training course. The tailrace enters a large concrete culvert near the northern end of LeBreton; this culvert passes under the existing intersection of the Ottawa River Parkway, Portage Bridge approaches and Wellington Street, reaching the Ottawa River between the south shore of Richmond landing and the mainland.

Drinking water reaches the pumping station via mains originating from the Lemieux Island Filtration Plant.

The Mill Restaurant is located on the northern edge of the site, just west of the Portage Bridge. Development of the restaurant involved the restoration of the former Thompson-Perkins Mill, which was part of the former Chaudiere industrial complex. Access to the restaurant is exclusively from the Ottawa River Parkway.

2.4 Adjacent Community Character

The neighbourhoods that surround LeBreton Flats are varied. They range from the Centretown neighbourhood to the east, to the Dalhousie and Mechanicsville neighbourhoods to the south and west respectively. The area of the surrounding neighbourhoods is bounded by the Rideau Canal/Kent Street in the east; Gloucester Street, James Street and the Queensway to the south; Parkdale Avenue and the CPR tracks in the west; and the LeBreton Flats site and Ottawa River to the north. (This boundary comprises Census tracts 40, 41, 42, 46, 47, and 48).

With the exception of the Centretown area the neighbourhood is primarily residential. The housing type is medium to higher density. The total population for this area in 1991 was almost 20,000 and was made up of predominantly of persons aged 25 to 44 with smaller than average household sizes. The area is characterized by higher than average unemployment rates and lower than average incomes.

The existing communities to the south and west of LeBreton have a wide range of social and community facilities. Local recreational facilities include the Tom Brown arena, and the Plant Bath pool. As well, there are 13 parks ranging in size from 600 square metres to 2.5 hectares. The main parks in close proximity are Laroche, Plouffe, Primrose, Dalhousie, Bronson and Chaudiere. There is a branch of the Ottawa Public library located on Rosemount Street and the main public library on Metcalfe Street is easily accessed by transit. There is local shopping along Somerset Street and Preston Street and the downtown core is within easy reach. The existing health care services consist of the Somerset West Community Health Centre which offers a variety of family and seniors health care programs. As well, there are a number of walk-in clinics in the

neighbourhood. The Grace Hospital and the Civic Hospital are located within a five to ten minute drive, as well as the specialized St. Vincent hospital for long term care/rehabilitation.

2.5 Heritage

The Ottawa municipal waterworks system is important to the history of LeBreton Flats. The Fleet Street Pumping Station, the open aqueduct and the seven bridges crossing the aqueduct and the tailrace are designated "heritage" by the City of Ottawa, under the Ontario Heritage Act. The seven bridges include, from west to east, the Canada Central Railway, Broad Street, Booth Street, Lloyd Street, Grand Trunk Railway, Lett Street and Pooley's Bridges. The Fleet Street Pumping Station also received a designation of Canadian Waterworks Landmark and National Historic Monument following the completion of its restoration in 1982.

Though no formal heritage designation applies to the Thompson-Perkins Mill, currently "The Mill Restaurant", it is highly valued as a restored historic structure.

3.0 ENVIRONMENTAL SETTING

3.1 Geology and Topography

The geology of LeBreton Flats is made of limestone bedrock, covered by a thin layer of alluvial sediments on the west side by, glacial till on the east side and by extensive fill material covering most of the site. The thickness of the overburden ranges from approximately 0.5 metres in the central portion of the site and along the aqueduct to 10 metres in the west and east and along the Ottawa River Parkway. The overburden consists largely of fill. The fill includes clean fill as well as municipal refuse, demolition debris, excavation soil, cinders, ash, sand and gravel, etc. Extensive landfilling was carried out in Nepean Bay, south of Fleet Street and for the construction of the Ottawa River Parkway and Transitway. Although the site was originally relatively flat, the site now consists of a number of short and steep slopes (greater than 15%). These are located mainly along the embankments and berms of the Parkway and the Transitway. Steep slopes also occur along the tailrace and on the south side of the pumping station forebay. (Figure 4)

3.2 Surface Water and Groundwater

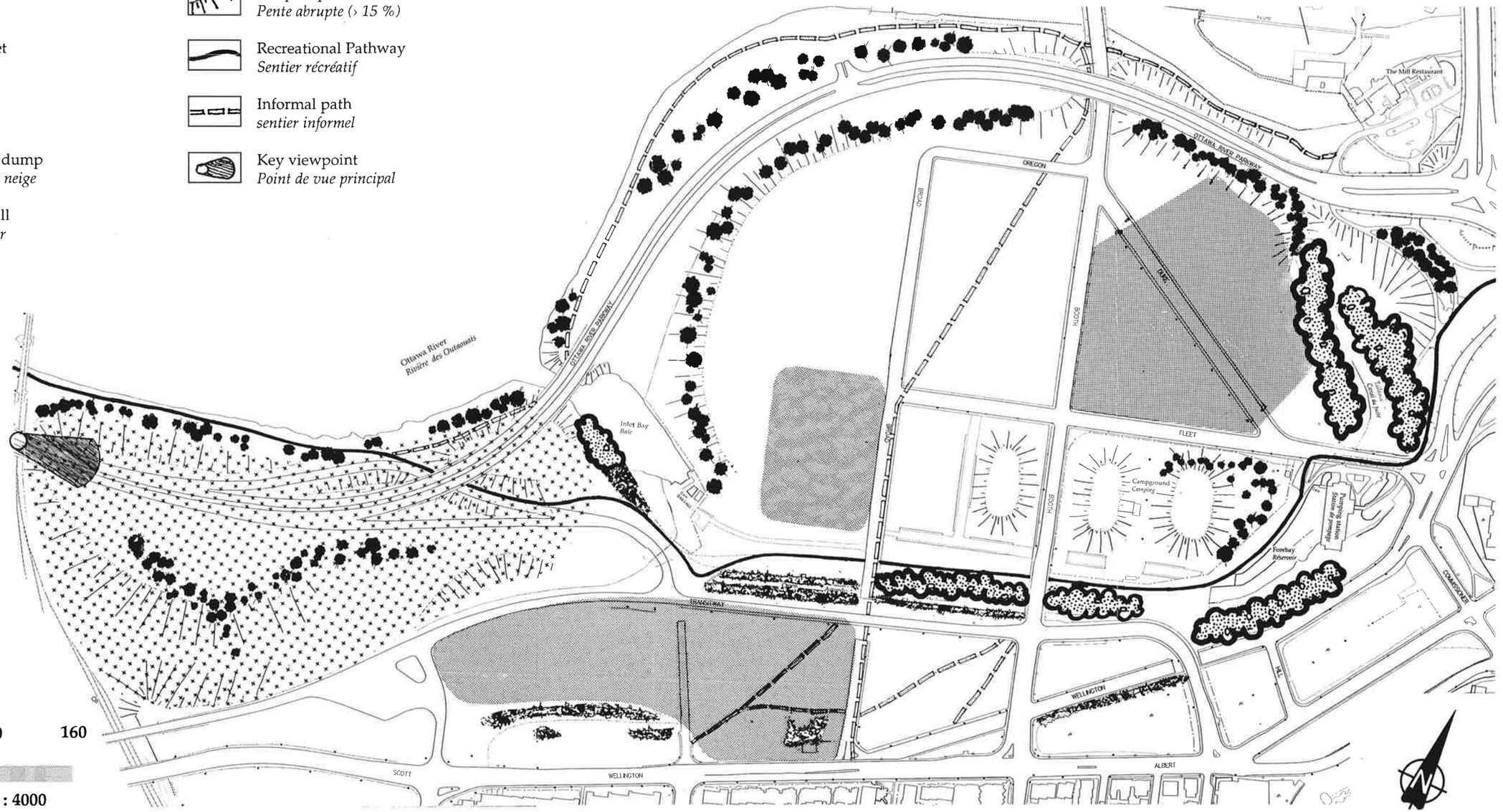
The Ottawa River and the aqueduct are the two surface water features in the LeBreton area. The Ottawa River is the major hydrographic system crossing the Region. Water flow and levels in the Ottawa River are largely controlled by a number of hydroelectric dams, therefore water level fluctuations in the Ottawa River at LeBreton Flats are relatively minor. Within the Flats, the waterworks consist of an open aqueduct, a buried aqueduct, a forebay, the Fleet Street pumping station and a tailrace channel. Water flowing through the aqueducts is controlled by the pumping station operations.

Most of the surface drainage on LeBreton Flats is directed toward the aqueduct system either naturally by sheet drainage or is captured by drainage trenches or sewer systems existing on site. All of the land north of the Ottawa River Parkway drains directly into the Ottawa River.

Groundwater in LeBreton Flats is found mostly at or near the bedrock surface, at depths varying between 1.5 and 4.0 metres below the ground surface. Most of the groundwater south of the Ottawa River Parkway flows into the open and buried aqueducts. North of the Ottawa River Parkway, groundwater flows directly into the Ottawa River.

Legend / *Légende*

- Woodlot / *Boisé*
- Shrub/Thicket / *Buisson*
- Planting / *Plantation*
- Former snow dump / *Ancien dépot à neige*
- Former landfill / *Ancien dépotoir*
- Steep slope (›15 %) / *Pente abrupte (› 15 %)*
- Recreational Pathway / *Sentier récréatif*
- Informal path / *sentier informel*
- Key viewpoint / *Point de vue principal*



80 40 0 80 160

Scale / *Échelle* 1 : 4000

LeBreton Flats
Les Plaines LeBreton

Environmental Characteristics
Conditions environnementales

Figure 4

3.3 Soil and Groundwater Contamination

Soil and groundwater quality investigations have been conducted on LeBreton Flats at nineteen locations comprising twenty-five of forty-six former industrial sites. The following Table and accompanying Figure 5 identify the former uses and the sites that have been tested (those sites with an * beside the site number).

In 1991, a detailed historical assessment of all previous land uses on LeBreton Flats was conducted (Raven Beck, 1991). Forty-six former industrial sites were identified on LeBreton. Of this forty-six, twenty sites were identified as having priority for site investigation based on the potential for environmental impact associated with former land uses on the site, and/or on the site's "order" in the proposed phasing for future LeBreton development. Of this group of twenty sites, four were high priority, seven were medium priority and eleven were low priority for investigation. (Locations between Scott and the proposed LeBreton Boulevard were the first and second phases of development, while lands north of LeBreton Boulevard constituted the third phase.)

The priorization of sites in this 1991 Raven Beck report was the primary basis for identifying sites for investigation work. Certain sites could not be investigated due to their location under the Ottawa River Parkway, while others were added to the list for site characterization work because of their location along the proposed Transitway realignment.

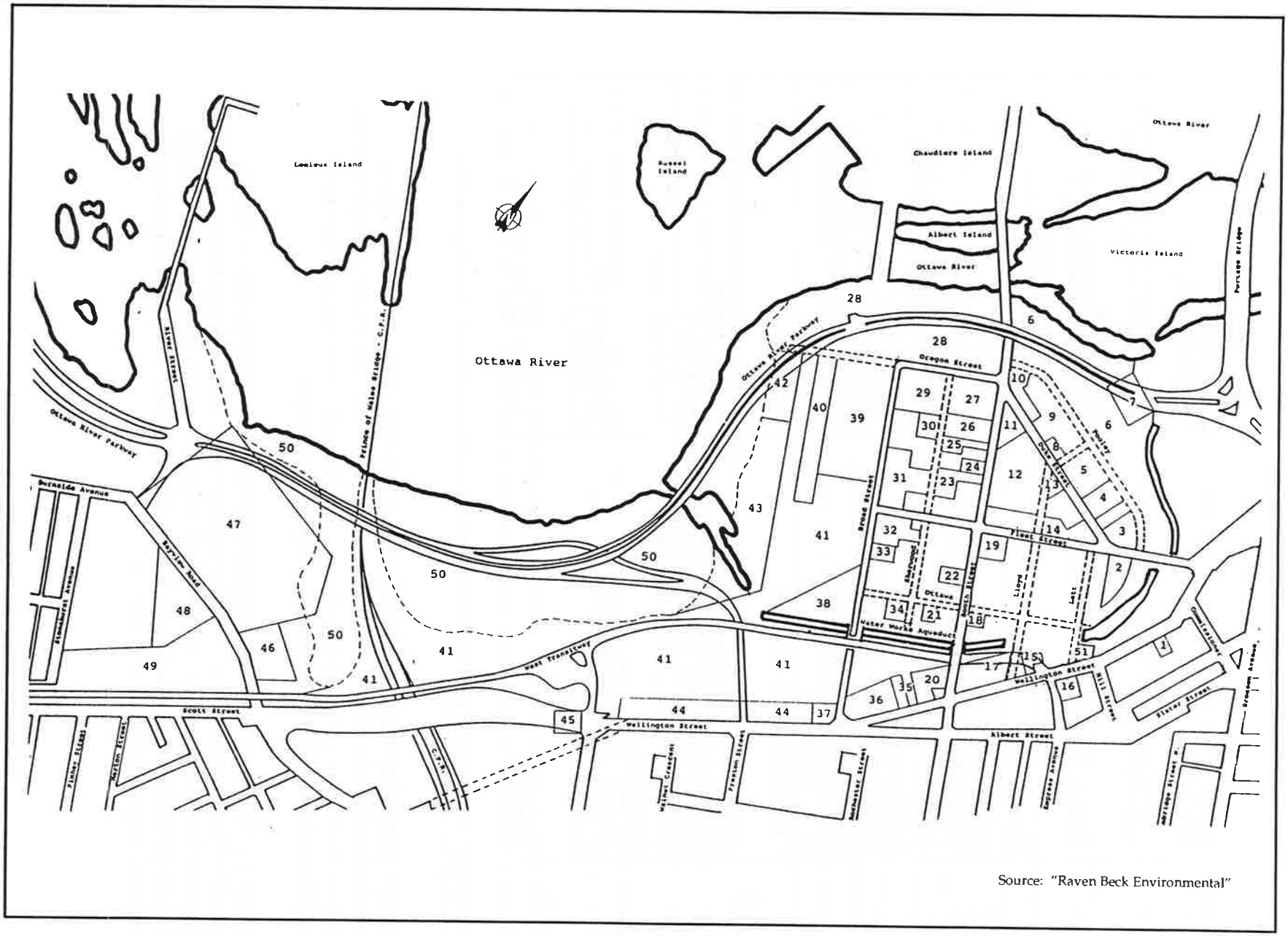
Results to date indicate that heavy metals and heavy polycyclic aromatic hydrocarbons (PAHs) are the principal types of soil contamination found on LeBreton Flats. These were found typically at locations of former junk yards, foundries and boiler and steel works, and uses related to petroleum products.

Metal contamination was typically found in the upper two metres of fill and PAH was found in pockets of the fill layer and occasionally deeper in the soil column. Both metal and PAH contamination in the soil are usually less than two times the latest federal and provincial remediation criteria for residential use.

Groundwater has been impaired in selected areas by snow dumping operations and former land uses. Significant areas of contamination were detected related to spillage or leakage of aromatic solvents and petroleum hydrocarbons at the former Ottawa Paint Works and former Colonial Coach Lines sites. Remediation of the Ottawa Paint Works site, located at the intersection of old Wellington and Broad Streets, is planned for 1997 and 1998. Further site characterization and remediation activities will continue in keeping with federal and provincial guidelines and criteria.

Former Land Uses by Site

Site No.	Site Name	Major Activity
1	Ottawa Brass Mfg. Co.	brass works & machine shop
2	RCMP Garage/Water Works yard	maintenance for automobiles and pumping station
3	Water Works Corp. Yard	maintenance yard, metering house, warehouse
4	Chaudiere Machine & Foundry Co.	foundry, machine shop
5	McAuliffe Davis/Mayno Davis Lumber Co.	lumber yard
6	CN Rail	rail sidings
7	Ottawa Light, Heat & Power Co.	steam power electrical generator
8	Seiberling Rubber Co.	tire dealer & warehouse
9 *	Baker Brothers Ltd.	junk yard
10 *	Sunlight Oil Co.	auto garage
11 *	Sunlight Oil Co.	service station & auto garage
12 *	J. H. Connor & Sons Foundry	foundry & washing machine manufacturing
13	Elgin Service Station	service station
14 *	Royvale Motors Ltd.	auto service & sales
15	Langelier Ltd.	heating supplies
16 *	Unnamed service station	gasoline service station
17 *	Continental Paper Products Ltd.	printing & paper product mfg.
18	Imperial Radiator Servicing	radiator servicing
19 *	Therien Co.	rug cleaning, upholstery and furniture repair
20 *	A. Palmer Plumbing Supply Ltd.	tinsmith, plumbing supplies
21	Queen Auto Service	garage
22 *	Chaudiere Plating Works	electroplating
23 *	J. P. Power Co.	boiler works
24	R. J. Ferguson & Sons	foundry & moulding shop
25	H. Dubinski	barrel & scrap warehouse
26 *	Victoria Foundry Co.	foundry, plating & machine shop
27 *	Baker Brothers Ltd.	service station, junk warehouses & truck garage
28	Mason Yard & CN Rail	rail sidings, storage
29	Colonial Coach Lines	garage, bus maintenance
30	Unnamed	auto junk yard



Source: "Raven Beck Environmental"

LeBreton Flats
Les plaines LeBreton

Former Industrial Sites
Anciens terrains industriels

5 Fig.

Site No.	Site Name	Major Activity
31 *	Sach's Brothers	junk yard & waste material warehouse
32 *	Ottawa Boiler & Steel Works	boiler manufacturing & machining, foundry
33	Unnamed	junk yard
34 *	Unnamed	junk yard
35 *	Department of Transport & Radio	machine shop
36 *	Ottawa Paint Works Ltd.	paint production & storage
37 *	J. Doherty	service station
38 *	Massey-Maple Leaf Milling Co.	railway freight warehouse
39	Canadian Pacific Railway	freight sheds & rail sidings
40	W. L. Donnelly	coal sheds
41 * (part)	Canadian Pacific Railway	rail yards
42 *	Dibblee Construction Co.	asphalt plant
43 *	Ottawa Pre-Mixed Concrete Ltd.	stock yard
44 *	O'Keefe Brewery Co. & Brading Breweries	brewery & sales
45	Mutual Oil Production Co.	coal oil storage
50 * (part)	Reclaimed land	landfilling of municipal refuse
51	Unnamed	gasoline service station

Source: Mapping, Assessment and Prioritization of Former Land Uses in the LeBreton/Bayview Area, Raven Beck Environmental, 1991

Contamination has also been found in the sediments at the base of the open aqueduct and in the tailrace (heavy metal, PAH and PCB). These are believed to be from the former industrial land uses. Further sediment analysis will be completed as part of the stormwater management plan.

Section 8.0, Environmental Assessment and Annexes 2 to 5 inclusive, (being Executive Summaries of four site characterization / remediation reports prepared by Raven Beck Environmental) provide greater detail on the issue of soil and groundwater contamination on LeBreton Flats. Policies addressing this issue also appear in Sections 9 and 10.

3.4 Vegetation Inventory

An ecological inventory was undertaken by Beauchemin, Beaton and Lapointe Inc. in 1990 and supplemented in the fall of 1996 by a terrestrial inventory update (Ecological Services for Planning Ltd) and an aquatic inventory of the aqueduct (Jacques Whitford Ltd.) The majority of the site has been severely impacted by past human activity. These disturbances include:

- extensive fill and grading
- former utilization of portions of LeBreton Flats as a temporary snow dumping facility
- a former municipal landfill in the west part of the site- extensive network of roads including the Ottawa River Parkway, Booth Street, smaller local roads, the Canadian Pacific Railway, the Transitway and recreational pathways
- a number of historical industrial operations east of Broad Street including paint works and foundries, and freight rail activity west of Broad Street
- extensive manicured lands along the Ottawa River Parkway
- a campground
- the aqueduct, pumping station and associated infrastructure

Figure 4 identifies the four vegetative units found on the site. These are: open fields, plantings, shrubs/thickets and wooded areas and are described as follows.

Open Fields

The majority of the site is open fields which are either manicured or dominated by early successional vegetation such as grasses and forb vegetation. Much of the vegetation is non-native such as smooth brome grass, broad-leaved plantain, dandelion, common burdock, white sweet clover, red clover, chicory, butter and eggs, common mullein, viper's-bugloss, cow vetch and meadow goat's beard. Native species are generally invasive such as goldenrod, common ragweed, reed canary grass and common milkweed. All species are characteristic of disturbed sites and early successional habitats.

No regionally rare plants were found on the site.

Plantings

Several trees (native, cultivars of native species and non-native species) grow along the Ottawa River, north of the Ottawa River Parkway. The native trees include cottonwood, silver maple, large-tooth aspen and red maple. Non-native

plantings, which are common in the west portion of the site, include English oak, Russian olive, honey locust, Scots pine, Austrian pine and blue spruce. Buckthorn and maple-leafed viburnum shrubs are scattered along the edge of the Ottawa River.

Trees have also been planted on the former Nepean Bay landfill, and include Scots pine, red maple, silver maple, blue spruce and large-tooth aspen. A large area of smooth brome grass is south of the planted trees, on the slopes of the former landfill.

Blue spruce trees have been planted along the ridge south of the Ottawa River Parkway in the eastern portion of the site. This line of trees is now well established. Scots pines are located east and north of the tailrace.

Many large tooth aspen trees and non-native common lilac shrubs are scattered through the camping area.

Three large red maple trees are located in a hedgerow between the Transitway and Scott Street. Small white elm specimens and heart-leafed aster are also located in a hedgerow of trees and shrubs parallel to the rear entrance to the former O'Keefe Brewery (west of Broad Street just north of Wellington Street), immediately east and west of Broad Street, and along the southern edge of Wellington Street between Booth Street and the Transitway. The hedgerows are comprised of white elm, Russian olive, White birch, Manitoba maple, Japanese smartwood, staghorn sumac and glossy buckthorn. Debris, fill and abandoned foundations are also common among the hedgerows and open fields. Planted green ash and red-osier dogwood are located along the Transitway east of Booth Street.

Shrubs/Thickets and Wooded Areas

The wooded areas are found along the inlet to the aqueduct, the aqueduct itself and the tailrace. Manitoba maple is the dominant species. A few large red maple and smaller white elm trees are scattered among the Manitoba maple. On the west side of the tailrace, at the north end, are cottonwood and large tooth aspen trees. Hybrids of these species also appear to be present. Smaller trees, shrubs and vines in this area include white elm, black ash, staghorn sumac and tartarian honeysuckle. Asters, violets, common beggar-ticks, common thistle and riverbank grape are common forb species in and adjacent to the wooded area.

South of the pumping station there is a wooded area of approximately 20 metres by 200 metres adjacent to the forebay. Manitoba maple is again the dominant species. Common ground and understorey vegetation includes Japanese smartweed, riverbank grape and white elm. There is a large amount of debris in

this area such as concrete, plywood and garbage. Evidence of small fires exist. Graffiti is located on the concrete embankment and at the west end of this wooded area.

Trees and shrubs line the aqueduct east and west of Booth Street. Common tree species are Manitoba maple, crack willow, red maple, red elm and white elm. Glossy buckthorn, raspberry and sumac are common among and adjacent to the trees with tartarian honeysuckle, riverbank grape, goldenrod and bittersweet nightshade also present. There are willow trees located on the north side of the aqueduct west of Booth Street. Several abandoned concrete foundations are located on either side of the aqueduct. Fewer older trees are located along the most westerly open portion of the aqueduct, although this area is still vegetated with small trees and shrubs such as glossy buckthorn, red elm, Russian olive, staghorn sumac and eastern cottonwood.

The inlet to the aqueduct is located southeast of the Ottawa River Parkway and north of the Transitway. The edges of the inlet are well vegetated with very large willows at the southwest edge. Sumac, Manitoba maple, white elm, silver maple, glossy buckthorn, rose, common milkweed and thicket creeper are common around its perimeter.

3.5 Wildlife Inventory

Wildlife observations were limited during the 1990 and 1996 inventories. The relative central urban location of the site, the extreme state of disturbance of the site and the lack of significant habitats are factors limiting the use of the site by wildlife. Wildlife and wildlife habitat observations are primarily associated with the vegetation along the aqueduct and the tailrace.

The wildlife observed were locally common species, including many of those typically found within or adjacent to an urban area, such as squirrels and groundhogs. Racoons, skunks, rabbits, mice and other small field animals are also present on this site. Signs of beaver activities have been observed as well, along the aqueduct. No reptiles or amphibians were recorded, with the exception of one "mudpuppy" (large salamander) found in the open aqueduct in the October 1996 aquatic inventory. The lack of woody debris in the wooded areas, artificial steep walls of the aqueduct and the fast flow and steep slopes of the tailrace generally preclude herpetile habitats.

More than 20 species of birds were sighted in the 1990 inventory including: gray catbird; lesser scaup; northern mockingbird; redwinged blackbird; northern oriole; cliff swallow; tree swallow; starling; killdeer; rock dove; chimney swift; eastern kingbird; bank swallow; American crow; American robin; cedar waxwing; yellow warbler; song sparrow; common grackle and house finch. This

immediate portion of the Ottawa River does not provide good habitat for waterfowl.

No regionally rare wildlife species were observed in the two studies undertaken.

3.6 Aquatic Inventory

An inventory of the aquatic habitat of the open aqueduct and the tailrace was conducted in the fall of 1996. The buried and open aqueducts are drained at least once a year in the fall for maintenance and cleaning of the Fleet Street pumping station turbines and intake system. The October drawdown of the aqueducts was therefore the best time to conduct the inventory. The open aqueduct is essentially a deep water trench with vertical walls, approximately four metres deep, cut directly into the limestone bedrock. Due to the steep walls, a well defined shallow littoral zone is not present. No aquatic vegetation was found in the open aqueduct except for some algae growth along the walls of the trench.

Since 1980, fish have only gained access to the open aqueduct via a narrow eight inch pipe (located at the headworks to the aqueduct) or by swimming back upstream from the buried aqueduct entrance.

The fish numbers were found to be very low and in most cases absent for much of the system. Conditions necessary for spawning or nursery habitat were not present in the aqueduct for most of the species found, with the exception of the channel catfish. The open aqueduct has been assessed as a degraded artificially created Type 3 fish habitat (Ontario MNR classification). The species present are considered to be trapped within the system, and given the regional waterworks operational requirements, the existing population is not considered to be sustainable.

Downstream of the pumping station, the tailrace channel has a maximum depth of approximately two metres and an average width of 21 metres. The tailrace connects directly with the Ottawa River via a large concrete culvert which passes under the Parkway and Portage Bridge approaches. Fish can enter the tailrace by swimming upstream from the Ottawa River. Water flow is high and the area represents good quality rapids habitat for fish species requiring fast moving water. In fact, the fish found in the tailrace were representative of species found in faster flowing waters. In addition, a large gravel sandbar about 20 metres in length has formed behind a rock crib structure which represents good spawning habitat for Ottawa River species which require fast moving water and rubble/gravel substrates (i.e.: Walleye; Young of the Year White Sucker; possibly Sturgeon; and the rare River Redhorse). However, no aquatic vegetation was found in the tailrace. The tailrace is assessed as a Type 2 habitat with the potential to be Type 1 based on its attributes as a spawning area for a

number of Ottawa River fish species. A fish spawning inventory will be undertaken in the spring of 1997 to confirm the fish habitat type and to establish requirements for stormwater management purposes.

No specific aquatic inventory was undertaken in the Ottawa River. The Ottawa River is a very large hydrographic system and represents the largest tributary of the St. Lawrence River. This river supports a wide diversity of fish population: approximately 75 species of fish. It is expected that a large proportion live in this section of the Ottawa River. In particular, the region provides habitat for warm water species such as pike, walleye, bass, carp, etc.

4.0 PLANNING CONTEXT:

4.1 Federal Land Use Plan

The Federal Land Use Plan is the long range land use policy document which governs land use on all federally-owned lands in the National Capital Region. It is prepared by the National Capital Commission. The 1988 Federal Land Use Plan was amended in 1996 to incorporate the Concept Plan for LeBreton Flats that formed the basis of the Tripartite Land Agreement. The following amendments were made to the Federal Land Use Plan:

> Removal of the Capital Park designation from the aqueduct corridor, as these are not to be federally owned open space lands. The Capital Park designation will remain in effect for the lands located along the edge of the Ottawa River and on the lands to be retained for open space (the LeBreton Common) between Oregon Street and the future LeBreton Boulevard.
>
> Addition of a Non-governmental organization designation to the development parcels located north of Oregon Street; these parcels also have a Cultural- Institutional designation in the Federal Land Use Plan, which remains in effect. Non-governmental organizations, in this case, refer to a variety of national and international associations and organizations; examples include United Nations agencies, the Red Cross, the Canada Council on Social Development. The focus in this context is to provide visible sites for the headquarters of these associations, and encourage public accessibility to these areas.
>
> Removal of a portion of the Parkway Corridor designation from the inlet to the aqueducts to the Portage Bridge-Wellington Street intersection; this recognizes the replacement of this section of the Ottawa River Parkway by the future regional road, LeBreton Boulevard.
>
> Adjustment of the Regional Transitway alignment, to incorporate the new location proposed in the Concept Plan.

In addition to making land use changes on LeBreton Flats, the approval of Federal Land Use Plan amendments incorporated the approval of the designation of those LeBreton lands which will be retained in NCC ownership and those lands which will be declared surplus and sold to non-NCC development interests for implementation of the plan. The ownership of all lands north of the new regional road, LeBreton Boulevard, will be retained by the NCC as National Interest Lands, essential to the fulfilment of the NCC mandate

in the Capital.[1] This distinction between National Interest Lands and surplus lands on the Flats was also approved by the Treasury Board of Canada.

The NCC also specified requirements for design approvals in the implementation of the LeBreton plan. Firstly, federal design approval will be required for all National Interest Lands on the Flats, and for lands within a 75 metre distance south of the centreline of LeBreton Boulevard (parcels fronting on the south side of the Boulevard). Secondly, the NCC and the RMOC are to jointly prepare design guidelines to govern the preparation of detailed design and engineering plans for the realigned transitway; the NCC's Vice-President of Capital Planning & Real Asset Management will have the approval authority for this LeBreton Transitway Plan.

4.2 Regional Official Plan

The current Official Plan of the Regional Municipality of Ottawa-Carleton designates the LeBreton Flats site as General Urban Area and Waterfront Open Space. Lands designated General Urban Area are used primarily for residential purposes, along with the stores and services, parks, recreation facilities and other uses that make up communities. The Waterfront Open Space designation applies to lands that are in public ownership and are either currently developed with pathways or other recreation facilities, or which should be so developed. The uses that are permitted include facilities for active recreation that require water access or a waterfront location.

A draft of the proposed new Official Plan is scheduled for release in February 1997. The National Capital Commission has requested that the draft plan designate most of LeBreton Flats as Central Area and as Waterfront Open Space (along the Ottawa River and the aqueduct). These designations are in keeping with the proposed Concept Plan discussed later in this document. The proposed Concept requires an amendment to the 1988 Official Plan, which is in effect until the draft plan is approved by the Province.

Schedule C1 of the Official Plan- Future Urban Regional Roads Plan indicates that Scott, Booth, Duke and Fleet Street are regional roads.

Schedule C2 of the Official Plan- Urban Regional Roads Rights-of-way Protection Policy Plan indicates that the right-of-way for Booth Street, Duke Street and Fleet Street is 20 metres. The right-of-way for Scott Street is 26 metres.

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[1] The NCC will also retain the ownership of lands comprising the former municipal landfill south of the Parkway at Nepean Bay and immediately west of the proposed municipal park. These lands have not been included for built development, at this time. The landfill lands do not have a National Interest Land designation.

Schedule F of the Official Plan- Scenic Routes and Major Bicycle Corridors indicates that the Ottawa River Parkway is a Scenic Route and that there is a major bicycle corridor along the waterfront.

Schedule G of the Official Plan- Environmental Constraints indicates that a portion of the site is in the Flood plain.

A review of the Official Plan is currently being finalized and the preliminary indications are that the majority of LeBreton Flats will be designated "Central Area". A designation similar to Waterfront Open Space will still most likely apply to the lands located along the Ottawa River.

4.3 City of Ottawa Official Plan

The City of Ottawa's Official Plan designates the site as "Central Area" and "Greenway - Waterway Corridor".

LeBreton Flats is a "Character Area", as included in the Central Area designation and policies have been put in place until a Secondary Policy Plan has been undertaken. The policies are as follows:

> ensure innovative, multi-functional spaces including cultural, institutional, residential, commercial and open space uses
>
> create Canadian themes and expand the range of tourist attractions
>
> ensure visual, symbolic and physical linkages with surrounding communities
>
> minimize vehicular traffic impacts on adjacent areas and within this new community
>
> ensure that development provides an integrated character at a human scale, which facilitates year-round, day/night activity
>
> create a network of public walkways and parks that focus on the river and the aqueduct areas
>
> ensure a consultative planning process, and
>
> ensure that the residential development provides a wide range of housing forms which are affordable and accessible to all incomes, ages and household types.

In addition, on Schedule F - Environmental Constraint Areas/Sites of the Official Plan, part of the site has been identified as former industrial uses and a former landfill. As well, there is a 1 in 100 year flood limit which must be taken into consideration.

Booth Street, the Ottawa River Parkway, and Scott/Wellington have been designated as "Gateways". The intersection of the Ottawa River Parkway and the Portage Bride has been designated as a "Node". Gateways are an important road or path which serves as a major entry into the City, into a district or into a local area. Nodes are points of intensive activity which provide a focus to public life.

In addition, an Official Plan Amendment was approved which established policies to protect Central Area Views to the Parliament Buildings and other national symbols. This amendment established a "Central Area Major View" on the western boundary of LeBreton Flats at the mid point of the CPR bridge where it crosses the Ottawa River Parkway. This view point is to ensure that buildings constructed within this view area do not visually obstruct the foreground views of the Parliament Buildings and other national symbols.

4.4 City of Ottawa Zoning By-law

4.4.1 Zoning By-law Z-2K

The existing zoning does not reflect the previous uses of the site nor does it reflect the Concept Plan.

Under Zoning By-law Z-2K, the majority of LeBreton Flats is zoned G-x(2.5)[1]. A portion of the site north of the aqueduct and east of Booth Street is zoned C1-a (2.5), while the land south of the aqueduct and north of Wellington Street between Broad Street and Commissioner Street is zoned RO (2.5). There is an M2-x(2.0)[1] zone located on the west side of the site. The lands located along the Ottawa River are zoned P.

The G zone is a Government use zone which limits the uses permitted to those which are operated by municipal, regional, provincial or federal government. The exception in this zone states the following:

> Parking for government offices shall be at a rate of at least 1 space for every 65.1 square metres of gross floor area.

The P zone is a Public Use zone whose uses include the following: cemetery, court house, fire station, hospital, jail, municipal or regional offices, parkway, park, place of worship, police station and school.

The RO zone is a Residential Office zone whose uses include the following: fire station, municipal yard, parkway, park, place of worship, police station, single family dwellings, apartment dwellings and an office for a physician or a dentist provided it is located on the ground floor or basement of the apartment.

The C1-a zone is a general commercial zone which permits a number of commercial uses including bank, dental facility, personal service business, restaurants, retail business and shopping centre.

The M2 zone is an intensive light industrial zone which permits a number of light industrial uses including a laboratory, the manufacture, assembly, repair and maintenance of a number of products. The exception to this zone also permits offices located in a building containing one or more or the permitted industrial uses provided that more than 50% of the gross floor area of the building is occupied by an industrial use.

There is an overall height limit to uses for LeBreton Flats which limits building heights to 10.7 metres.

4.4.2 Zoning By-law 2020

LeBreton Flats is part of the Central Area and as such has not been included in the review of Zoning By-law Z-2k to date. The City of Ottawa is currently undertaking a review of the zoning for the Central Area. It is anticipated that this will be complete in the spring of 1998. The zoning for the subject site will be subject to this review.

5.0 SERVICING

5.1 Fleet Street Pumping Station and Aqueducts

The Fleet Street pumping station and open aqueduct are owned by the Region. They were part of the original water supply system for the City of Ottawa and are still in use today. This station provides power to pump about 50% of the water supply to the central Ottawa urban area.

Both the buried and open aqueducts originate at the inlet from the Ottawa River and traverse the site in an easterly direction where they converge approximately 180 metres east of Booth Street. The buried aqueduct is located within the Ottawa Street road allowance.

Potable water supply to the pumping station is delivered via a 1220-mm diameter gravity line (Line C) from Lemieux Island Filtration Plant. Line B also reaches the Fleet Street pumping station though it does not cross the LeBreton site.

The aqueducts provide a natural impediment to services which cross to the north. Inverts are approximately 47 metres above sea level, with water levels approximately 52 metres above sea level. Existing ground levels at the top of the open aqueduct banks average 55 metres. Existing services and facilities which cross these water courses include abandoned local combined sewers, a watermain on Booth Street, a combined sewer overflow pipe, bridge crossings and a pedestrian/cycle crossing. The open aqueduct also serves to outlet storm drainage systems for the Transitway and local surface drainage.

5.2 Combined Sewers and Storm Sewer Network

LeBreton Flats was once served by a combined sanitary and storm sewer network which now serves only to outlet storm water from the site. The site is divided into two catchment areas. The area north of the aqueduct outlets to the tailrace immediately downstream of Pooley's Bridge. The second catchment area outlets to the Cave Creek Collector.

5.3 Trunk Services

The trunk services which cross the site include a City combined sewer overflow and the Region's trunk water mains and collector sewers. Line C watermain diverges east from Lemieux Island and passes directly through the LeBreton site south of the open aqueduct. This line operates at minimum pressure and supplies water to the Fleet Street station by gravity. The watermain is in good condition, although some work will be required to prevent joint corrosion.

A trunk storm sewer, originating south of Scott Street is located toward the western edge of LeBreton Flats and runs north-south, crossing the Ottawa River Parkway and outletting to the Ottawa River .

Traversing or in close proximity to the site are three regional trunk sewer services: the Cave Creek collector sewer, the West Nepean Collector sewer and the Interceptor Collector. The Cave Creek collector runs east/west between the Transitway and Scott-Wellington-Albert Street. This sewer was inspected in 1990 and it was recommended that the section between Broad Street and Champagne Street North be replaced or rehabilitated. No rehabilitation work has been done to date.

5.4. Utilities

Many of the old utility services such as telephone, hydro and gas were abandoned after the site was cleared in the mid-sixties. Active hydro and Bell services are located within Booth, Scott and Wellington Streets. Bell also has cables located along Duke Street. Overhead hydro lines are located around the Fleet Street Pumping Station, north of the Mill Restaurant and northeast of Booth Street at the Ottawa River.

5.5 Transportation

5.5.1 Roads

The existing road network consists of local and regional roads, some of which are currently used and some of which were abandoned when LeBreton Flats was cleared in the 1960s. The following Table lists the existing streets, what level of government currently owns them and their status.

Street	Ownership	Status
Wellington Street (north of Scott through to Commissioner Street)	RMOC	open; maintained east of Booth Street
Duke Street (between Booth and Fleet Streets)	RMOC	open; maintained
Fleet Street (east of Booth Street)	RMOC	open; maintained
Booth Street	RMOC	open; maintained

Duke Street (west of Booth Street)	City of Ottawa	open; grassed over; under Ottawa River Parkway
Oregon Street	City of Ottawa	open and maintained east of Broad; closed and grassed over west Broad Street,
Montreal Street	City of Ottawa	closed; grassed, under the Ottawa River Parkway
Pooley Street	City of Ottawa	closed; grassed over
Lloyd Street	City of Ottawa	open; grassed over
Lett Street	City of Ottawa	open; grassed over
McAuliffe Street	City of Ottawa	open; grassed over
Fleet Street (west of Booth Street)	City of Ottawa	open; maintained
Sherwood Street	City of Ottawa	open; not maintained; grassed over north of Fleet Street
Hill Street	City of Ottawa	open; maintained
Broad Street	City of Ottawa/NCC	open; maintained and accessible north of the aqueduct
Ottawa River Parkway	NCC	open; maintained

5.5.2 Bridges

There are nine bridges on LeBreton Flats. Two are found on the Ottawa River Parkway, where it passes over the inlet to the aqueducts and at the Booth Street overpass. These are owned by the NCC. Seven bridges traverse the open aqueduct. All are designated heritage. Only the Booth Street Bridge is open to traffic; although the Broad Street Bridge is accessible, Broad Street south of the aqueduct is severed by the Transitway. Pooley's Bridge was closed to vehicular traffic in 1983 due to its deteriorating condition, but it is still used by pedestrians and cyclists. Booth Street and Broad Street Bridges were modified (widened and reinforced) to accommodate heavier vehicles and traffic volumes. The remaining aqueduct bridges are not accessible to vehicles, though they do serve as open space and recreational pathway connections across the aqueduct. The City of Ottawa owns the Lett, Lloyd and half of the Broad Street Bridges. The NCC owns the Canada Central Railway Bridge. The RMOC owns the Booth, Grand Trunk, Pooley's and half of the Broad Street Bridges.

5.5.3 Transitway

The Transitway is an at-grade two lane roadway dedicated to buses only. There is a major interprovincial transfer point at Booth Street and the Transitway, where a "temporary" station is currently located. Lands occupied by the Transitway and the bus lay-up on LeBreton Flats are owned by the NCC and the Region currently has no legal interest in these lands.

5.5.4 Recreational Pathways

There is an existing recreational pathway that crosses the Flats along the north side of the open aqueduct and across Pooley's Bridge. It connects to the Ottawa River Parkway system to the west and to the core area (via the pathway located at the base of the Parliamentary Precinct).

6.0 LEBRETON FLATS CONCEPT - THE PLANNING PROCESS

6.1 Development of Concepts

6.1.1 Five Alternate Concepts

Between 1989 and 1996, the NCC, the City of Ottawa and the Regional Municipality of Ottawa-Carleton worked together to create a planning concept to redevelop LeBreton Flats. Five alternative concepts were produced and reviewed by the general public and the three agencies. One of the five was chosen as the preferred concept. The plan which derives from this preferred concept forms the basis of the applications for Official Plan Amendments to both the Regional and City of Ottawa Official Plans. Annex 6 provides brief descriptions of the five alternative concepts which were developed and reviewed in 1989-90.

6.1.2 Selection of the Preferred Concept

The five concepts were presented to the public in May 1989 at a three day open house; this was followed up by questionnaires in the local newspapers in September of the same year. Approximately 225 persons attended these meetings, with 25 persons providing verbal comments and 31 providing written comments (this included community group responses).

Based on the feedback received from these consultations, on the environmental assessment of the five concepts and on the costing of the implementation of the five concepts, Concept Five - "The Agora" was chosen as the preferred approach for LeBreton Flats. In December 1989, this preferred concept was presented at a public open house and press conference. The preferred concept was refined and presented to the public in a three-day open house in June of 1990.

In order to establish guidelines for the next stages of the tripartite exercise, the preferred concept was presented to the Councils of the City of Ottawa and the RMOC and to the NCC in the spring of 1991. Three recommendations were made to the parties:

1) The Concept Plan was to be endorsed as the basis for continuing the planning work undertaken by the tripartite team;
2) The additional planning work to be undertaken was to address a limited number of issues; and
3) Land negotiations were to be initiated among the three owners of the site to establish an approach to land assembly satisfactory to the three parties and supportive of the Concept Plan.

The recommendations were endorsed by the three parties in 1991.

Following this endorsement, a number of issues were addressed by the tripartite team, which resulted in further refinements to the Concept Plan. These issues included:

- the Transitway alignment and grade separation at Booth Street;
- the condition of the heritage aqueduct and bridges;
- the feasibility of the urban design proposals;
- the reinforcement of a north-south street grid;
- sanitary sewer servicing capacity;
- soil and groundwater contamination; and
- environmental impact assessment.

Based on the review of these issues, modifications to the concept plan were made and presented to the public and Council members in May of 1992.

6.2 Highlights of the Preferred Concept

6.2.1 Open Space

The dominant land use is open space. In total, the amount of land dedicated for open space is 26 hectares, about 39% of the overall site. Currently LeBreton Flats is not actively used by residents of the region or visitors, other than for very large gatherings, for camping and for dog walking and cycling. Access to the Ottawa River is difficult to non-existent, although there is an existing recreational pathway, that is used occasionally, largely as a through route. The advantage to the Agora Concept was the provision of a large amount of common space in the large wedge shaped park that could be used for large public gatherings. In addition to the common space, access to the Ottawa River would be possible with the relocation of the Ottawa River Parkway to the south of its current location. This will result in 8 hectares being made available for open space along the waterfront.

A 2.5 hectare parcel of land located to the west of Preston Street will be given to the City of Ottawa for a municipal park. The connectedness of the pathway system will be improved, with a "twinning" of the pathway along the open aqueduct and a new pathway along the Ottawa River, north of the inlet.

The tailrace will be preserved in its natural state and the kayak training course which currently exists here will be retained.

6.2.2 Housing

The Concept proposes a mixed use medium density community, focusing on providing a range of housing types and tenures. If maximum development were achieved, the total number of housing units would be 2,400.

Proposed housing forms range from stacked townhouses to apartments of twelve storeys. Residential development is targeted at a variety of households who value downtown living and the accessibility and convenience of the site. Housing development is oriented as much as possible to the street, to heighten the sense of community.

6.2.3 Commercial Office & Retail

Commercial office and retail development proposed for LeBreton Flats ensures that the future community will be a place where people can work and live. Office development is proposed along the Booth and Scott-Wellington-Albert Street axes. Along Booth, the community's "high street" will emerge, as will development opportunities next to the new transit station. Sites are also proposed at the high profile corners of Booth Street and LeBreton Boulevard and along the highly accessible Scott-Albert Street corridor. Opportunities for mixed office-retail-residential projects are encouraged. Retail development will occur primarily at ground level in office, residential and mixed projects.

The maximum amount of commercial office and retail development is 100 000 square metres and 11 000 square metres respectively; a ceiling height for office development is also proposed to be twelve storeys. The LeBreton Flats commercial component strives for a niche market, being the scale or nature of neither core area or suburban development.

6.2.4 Cultural - Institutional Development

Parcels for cultural and institutional development are proposed in the northerly zone of LeBreton Flats. Set back from the river's edge, fronting on a wide waterfront open space corridor, this development area serves to extend the Parliamentary Precinct/National Symbol/Capital Waterfront, westward and to also provide a western anchor to Confederation Boulevard. A wide range of small to medium scale, publicly-oriented non-governmental and governmental uses are envisioned, taking advantage of the last waterfront land available in the Central Area.

An additional cultural-institutional site is designated on the south side of LeBreton Boulevard, just west of the tailrace.

The maximum amount of cultural-institutional development proposed is 75 000 square metres.

6.2.5 New Road Alignments

The Concept Plan balances some bold changes to the existing roadway network on LeBreton Flats with the retention and re-creation of the former urban grid street layout. Bold changes include the removal and replacement of the section of the Ottawa River Parkway between the aqueduct inlet and Portage-Wellington with an at-grade urban boulevard, aptly named "LeBreton Boulevard". This Boulevard crosses the Flats at a diagonal, retaining its connection to Portage-Wellington at the eastern edge of the site, but freeing up the northerly third of the site. As discussed, this is important to allow access to the waterfront.

Preston Street is extended north from Scott Street to connect to the new LeBreton Boulevard. Remaining local streets follow as much as possible the former grid and name sequence: Fogarty (a new street west of Broad), Broad, Sherwood, Lloyd and Lett Streets. These "new" north-south streets are in locations that vary only slightly from the alignments of their predecessors.

The northerly cultural-institutional zone is served by a local street, Oregon Street (former name), which intersects Booth Street and connects at the west and east ends of its crescent configuration with LeBreton Boulevard. South of the aqueduct, O'Keefe Street (in honour of the former brewery) serves the development parcels west of Booth on the north and south sides of the realigned Transitway.

Several of the main roadways on the site are preserved in the Concept Plan, namely, Scott-Wellington-Albert Street and Booth Street. Ottawa Street, Hill Street and Wellington Street at the eastern end of the site also retain their existing locations.

6.2.6 Transitway Realignment

In order to provide for the construction of a transit station at Booth Street, one of the driving premises of the Concept Plan development involved the realignment of the Transitway and the elevation and grade separation of Booth and Preston Streets from the Transitway. Several attempts were made to achieve this end (including tunnelling, air rights development, etc.) The final solution, and the only one deemed workable, calls for a shifting of the Transitway southward from its present location to a point midway between Scott Street and the open aqueduct. This allows sufficient space for the construction of a transit station at Booth Street. Booth and Preston Streets require bridges from Scott-Wellington-

Albert Streets to north of the open aqueduct to provide clearance over the Transitway. Likewise, the local O'Keefe Street must also bridge the Transitway to access development parcels. New grade for all development in this sector will conform to the heights of the Preston and Booth Street bridges, thereby placing the Transitway in a "cut" out of sight of the surrounding community and avoiding the creation of an above grade Transitway "barrier" through this area.

6.3 Land Agreement

In parallel to the work on the Concept Plan, land negotiations as agreed to by the two local Councils and the NCC, were initiated in late 1991. Intensive negotiations spanned a two year period and an agreement was concluded at the staff level in the spring of 1994. Due to municipal elections and the Expo 2005 proposal, the agreement was not brought forward for political consideration until 1995. The agreement was approved by the City, the RMOC and the NCC in early 1996.

The agreement seeks, by a series of land conveyances, easements and other means to accomplish the following major tasks:

- consolidate developable lands under the NCC's ownership;
- consolidate lands required for the Transitway project under the RMOC's ownership;
- protect all existing municipal infrastructure; and
- provide for the improvement of the heritage aqueduct and bridges.

The land deal also establishes a planning approval process whereby the NCC would apply to amend the designations for LeBreton Flats in the Regional and City of Ottawa Official Plans. The agreement commits the NCC to filing Official Plan Amendment applications to the City and the RMOC, based on the tripartite concept plan. It is only after the Official Plan Amendments are approved by the two levels of government, that the transactions and undertakings provided for in the land agreement can occur.

The following Section provides a more detailed description of the Concept Plan for the new LeBreton Flats community. As well, in order to initiate the next stages of implementation, changes are requested to the Official Plans of both the Region and the City. Section 7 details the Concept Plan, Section 8 summarizes the Environmental Assessment of the Concept Plan, and Sections 9 and 10 provide the policy direction for the Plan, in terms of the Regional and City of Ottawa Official Plan.

7.0 NEW LEBRETON FLATS COMMUNITY - THE PLAN

7.1 Introduction

As the next century approaches, thoughts turn to being able to provide for the changing character of this region: a number of issues dominate. The economic base continues to shift and diversify. The demographic makeup of the region's population is changing. Baby boomers will be entering the 65 plus age group by the year 2010, beginning a major shift of population into the ranks of senior citizens. The needs and preferences of an expanding variety of households for housing and other goods and services continue to change. Styles of work are being transformed, through technological advances and new approaches to doing business. The strength of Ottawa's Central Area will continue to be important. City and Regional planning policies for the future focus on such issues as residential intensification, sustainable communities, efficient use of existing infrastructure, and reducing automobile dependence. Planning for the future of the Nation's Capital is also critical; this includes preserving and enhancing the physical environment, providing sites for national symbols and uses, and addressing requirements for federal employment.

The new LeBreton Flats community responds directly to these challenges, providing for a mix of nationally significant uses, residential and commercial development and open spaces. It will provide significant housing and employment opportunities, and will enhance the role and vitality of the Central Area. The mix of uses will ensure activity during the day and evening. LeBreton Flats will set a precedent for intensive development in proximity to public transit, and will redefine the concept of accessibility in an urban setting. Development of the new community will make efficient use of existing municipal infrastructure, and will respect and build upon the existing natural and heritage setting of the site.

The following details the new LeBreton Flats community which, when constructed, will be a development that will move the city into the next century.

7.2 Land Uses

The LeBreton Flats community will feature a mix of land uses. Uses significant to the National Capital and to all Canadians will complement the reinstatement of a major community on the Flats. Sites will be designated for nationally significant cultural and institutional uses. A major focus will be placed on residential and commercial development, generating housing units and employment opportunities. A wide range of housing options will be provided on LeBreton Flats to support a mix of household types and lifestyles, including singles, young couples or families, empty nesters and seniors. LeBreton Flats will be a

pedestrian friendly community and where possible, streets will be public places, planned with wide sidewalks and room for street trees and landscaping. Linkages to open spaces and pathways will be a priority. The new LeBreton Flats community will encourage mixed uses by ensuring that there is flexibility in the location of uses and by encouraging the broad integration, rather than the separation, of different types of land uses. Figure 6 outlines the general land uses proposed for the future LeBreton Flats.

LeBreton Flats offers a rare opportunity to create this unique community in the heart of the region. Existing attributes set the stage: a large vacant site in close proximity to the core area; the nearness of waterways both on the edge of the site and on the site; important open space features and an existing recreational pathway system; the location of the Transitway on the site; and existing roads and infrastructure. The opportunity is here to create a truly urbane neighbourhood in the Central Area, one where the needs of daily life are accessible within a five or ten minute walk.

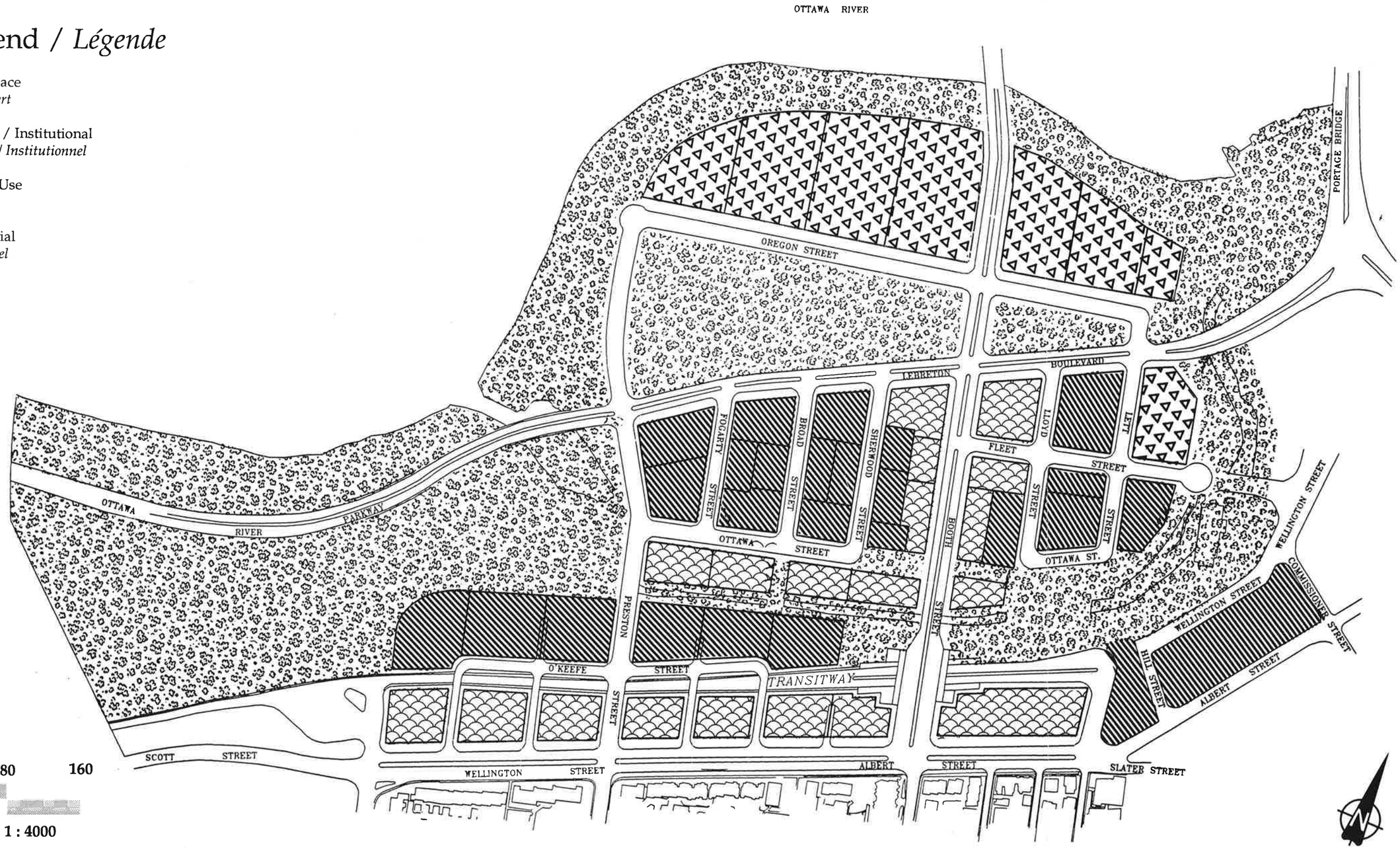
The principal philosophy and foundation of the new LeBreton Flats community is one of mixed use. For LeBreton Flats this will translate into a residential and commercial neighbourhood with a density of development similar to that in parts of Centretown. Compact development at medium and higher profiles will make more efficient use of this valuable urban land and the existing infrastructure. This philosophy is supported by both the Regional and City Official Plans. The objective is to provide a critical mass of residential and business population to operate as a community. Such an approach increases the viability of public transit and reduces reliance on the automobile.

The mixed use philosophy of the community exists at the macro and the micro scale. At a macro scale, the uses proposed across LeBreton Flats vary. At a more micro scale, mixed use areas are proposed along Booth Street from LeBreton Boulevard to Albert Street and along Scott-Wellington-Albert Street south of the Transitway. Large parcels or 'city blocks' will be specifically designated "mixed use" to encourage an integration of residential, commercial and retail uses in configurations and building forms designed to allow for unique opportunities for the creative mixed use development of LeBreton Flats.

The following describes the general land uses of the plan, including open space, cultural/institutional, mixed use, and residential, and describes the location of the uses proposed. Following, there is an analysis of the Concept Plan in terms of its impact on the existing community services, the transportation network, site servicing infrastructure and phasing and implementation considerations.

Legend / *Légende*

- Open Space
  Espace vert
- Cultural / Institutional
  Culturel / Institutionnel
- Mixed - Use
  Mixte
- Residential
  Residentiel



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LeBreton Flats
Les Plaines LeBreton

Proposed Land Use
Utilisation du sol proposée

6 Figure

7.3 Open Space

Currently, the use of LeBreton Flats as open space by the local, regional and national communities is limited. Access to the waterfront is restricted by the Ottawa River Parkway. The only access to the site is by busy regional roads, the Ottawa River Parkway, the Transitway and recreational pathways, all of which are focused on moving people through the site. No permanent amenities or attractions exist on site to encourage people to stop. Access to the aqueduct is hindered by the Transitway. As well, some of the heritage features on site are in a state of neglect.

Development of the new LeBreton Flats community will open this area to everyone in the region and to visitors to the Capital. The plan and its approach to open space will take advantage of the location along the Ottawa River and the presence of the aqueduct, and ensure the improvement of the existing heritage features on site.

The proposed open space system, as shown on Figure 6, is founded on the principles of public waterfront access, protection of natural areas, provision of major park spaces, and linkages of the system both internally and to the wider Capital open space network. The open spaces that will be provided in the new LeBreton Flats community provide for national, regional and local open spaces.

Almost forty percent of the site is devoted to open space in the proposed plan. In total, there are 26 hectares dedicated to this purpose (an additional 4 hectares consist of internal waterways). There are three distinct types of open space that are proposed for the new LeBreton Flats: open space along the waterfront; open space for national and regional programming (known as LeBreton Common); and the provision of open spaces for the local community.

7.3.1 Waterfront Open Space

Waterfront open space will include lands that front the Ottawa River and the aqueduct. In total, there are approximately 13 hectares dedicated for this purpose.

Access to the lands fronting the Ottawa River is now limited, but through the implementation of the new LeBreton Flats plan, these will be opened up to the public. Riverfront lands, from the CPR railway corridor at the western edge of the site to the Mill Restaurant (Thompson-Perkins Mill) in the east, are proposed as a publicly accessible waterfront corridor on which a recreational pathway is to be provided. In total, this open space along the river will be 8 hectares.

As discussed previously, there is currently no access to the Ottawa River, aside from informal and little used trails. The removal of a portion of the Ottawa River Parkway and its replacement by LeBreton Boulevard, running mid-way across the Flats, will free up the riverfront lands. Public access will then be possible: from the west and east via extensions of the recreational pathway; and from the south across the Capital park, through public accesses provided between cultural-institutional buildings and along sidewalks on Booth and Oregon Streets.

The width of the waterway corridor along the Ottawa River will range from 40 to 100 metres measured from the water's edge to the property line of the cultural/institutional area located to the south. Provision may be made for increased setbacks to the building faces of the cultural/institutional buildings to further increase the amount of land between buildings and the water's edge. This setback area within development parcels could be developed as public outdoor spaces associated with these cultural and institutional uses. In addition, a recreational pathway will be provided along the waterfront lands to form a continuous link along the riverfront, connecting the Parkway pathway system from the west through to the downtown path at the base of Parliament Hill.

In addition to the lands located along the Ottawa River, the lands located along the aqueduct will provide a public linear open space along this historic landmark. This open aqueduct and tailrace are important environmental features on site. Components of this municipal waterworks system and adjacent lands will be improved to enable it to become a true amenity for the new community. Heritage bridges will be rehabilitated, shorelines of the open aqueduct channel will be stabilized, vegetation will be improved, certain views to the water will be opened up, new fencing will be installed and recreational pathways will be constructed immediately along the fenceline on the aqueduct's north and south sides. A linear open space of approximately 5 metres in width will be dedicated along each side of the aqueduct to this open space use.

Heritage bridges crossing the aqueduct, including Canada Central Railway, Broad Street, Booth Street and Lloyd-Grand Trunk-Lett will serve as north/south linkages between the open spaces/pathways and the adjacent residential areas. The aqueduct open space will extend from the inlet and the municipal park in the west through to the forebay and tailrace areas, effectively forming a "loop" back to the riverfront open space corridors. Recreational pathways along the north and south sides of the aqueduct will converge over the Lloyd-Grand Trunk-Lett bridge and a single pathway will link to the downtown pathway system via the Pooley's Bridge connection. Along the south and east sides of the pumping station/forebay (around to Pooley's Bridge) and along the tailrace, existing vegetation will be maintained.

The tailrace is the waterway just north of Pooley's Bridge, which empties into the Ottawa River. This area will be preserved in its current natural state as essentially non-developable land. When the LeBreton segment of the Ottawa River Parkway is replaced by LeBreton Boulevard, the northern section of the tailrace (just south of the culvert entrance) will be traversed by a bridge which will align with the new configuration of the LeBreton Boulevard, Wellington Street and Portage Bridge approach intersection.

7.3.2 Major Open Space

7.3.2.1 LeBreton Common

An important land use that was identified by the NCC and the public as being necessary to provide on the site, is an area where large gatherings of national and regional significance could occur. LeBreton Common, a large wedge-shaped capital park located north of LeBreton Boulevard and south of the cultural/institutional area will provide this focus. The proposed capital park is 4 hectares in area and is situated where it can offer spectacular views of the Ottawa River and the Gatineau Hills to the north and the Parliamentary Precinct to the east. LeBreton Common will act as a connection between Confederation Boulevard and the tailrace natural open space on the east and the waterfront corridor on the west. It is envisioned that this park will be capable of supporting large gatherings such as Canada Day celebrations and outdoor concerts. The intent is to ensure that the proper utilities (hydro, water), services and security considerations for large gatherings are incorporated into the park's design to enable LeBreton Common to function as an event space. On a day to day basis, the Common will support a wide range of outdoor and recreational activities for area residents such as local festivals, picnics, informal passive and active recreational activities. Since major events will occur "outside office hours", it is envisioned that parking available in nearby commercial structures will support uses of the Common, in combination with public transit.

7.3.2.2. Municipal Park

A 2.5 hectare of land located on the southwest side of the inlet to the aqueduct will be transferred to the City of Ottawa for a municipal park. A small portion of the park will wrap around the eastern end of the inlet to the aqueduct in the vicinity of the inlet control works structures. The municipal park will link to waterfront open space lands to the east, west and north. It is intended that this park will serve the residents of the new LeBreton Flats community.

7.3.2.3 Open Space Reserve

In addition to the open spaces discussed above, the NCC will retain a large area of approximately 6 hectares as a natural and passive open space. This land is located between the municipal park and the CPR tracks to the west, south of the Ottawa River Parkway and north of the Transitway and was formerly used as a municipal landfill.

7.4 Cultural/Institutional

The future of the waterfront lands in the new LeBreton Flats community is one of the cornerstones of the Plan. A major role of the National Capital Commission is to ensure that key sites are available for future uses of Capital importance. Decisions in the past which expressed this mandate enabled the construction of the National Gallery and the Canadian Museum of Civilization. Providing lands for this purpose on LeBreton Flats will ensure that there is a physical place for tomorrow's national symbols. The "cultural-institutional" lands shown on Figure 6 (north of Oregon Street and south of the waterfront open space; south of LeBreton Boulevard, east of Lett Street and north of Fleet Street) will anchor the western end of Confederation Boulevard and the Parliamentary Precinct.

In total, there are 5.9 hectares reserved for cultural-institutional uses. While the lands south of LeBreton Boulevard will be sold by the NCC, the lands north of LeBreton Boulevard will remain in public ownership by the National Capital Commission on behalf of all Canadians for open space and for uses of future Capital importance.

The development of lands will be in the form of low to medium profile buildings. The types of publicly oriented uses envisioned could include small scale museums, and offices of national/international organizations and special agencies. As well as being significant from a Capital perspective, these publicly oriented uses and their accessory uses will promote activity along the waterfront and rekindle a relationship and linkage with Victoria and Chaudiere Islands.

Commercial uses accessory to and a component of the public uses, such as shops and restaurants, will occur at grade along the riverfront corridor and Booth Street. These accessory uses will encourage people to visit this area often, and at different times of the day. They will serve members of the public using the nearby open spaces and recreational pathway, as well as those visiting or working at the public institutions and activities in the adjacent buildings.

7.5 Mixed Use

Within the LeBreton Flats plan, specific parcels and blocks have been designated as "mixed use". These blocks are located along regional roads, Booth and Scott-Wellington-Albert Streets, to take advantage of siting and accessibility. Along the north side of the aqueduct, another narrow band of mixed use is proposed. At-grade retail uses will be encouraged to provide services and to animate the streets.

Though flexibility for residential or commercial uses provided within this designation will allow for adjustment in the future, there are certain locational advantages for a predominance of a particular use at the time of this application. For example, commercial uses on the two "anchor" sites at the corners of Booth and Albert Streets would take advantage of the strategic location next to the new LeBreton transit station. Booth Street itself has the greatest potential to be the main shopping street for the new community and, again, commercial uses would appear to be the most logical use. At the corners of LeBreton Boulevard and Booth Street, office uses would benefit from this distinctive location at the intersection of major regional roads, opposite LeBreton Common. Conversely, mixed use areas proposed along Scott-Wellington-Albert Street, west of Booth, and along the north side of the aqueduct, appear to have greater potential for predominantly residential use.

The types and form of mixed use projects proposed for the area located north of the aqueduct and south of Ottawa Street will be different given its location along one of the most picturesque spaces on site. In this area, at-grade uses will be oriented to the adjacent open space environment. Specialty shops and cafes/restaurants with outdoor terraces will be encouraged for the use and enjoyment of both the local community and visitors to the site

Most recent testing of the plan's development potential (and based on the above suggested uses), yields the following possibilities for the mixed use parcels, at a maximum building profile of 12 storeys: approximately 665 housing units, approximately 100 000 square metres of office and approximately 11 000 square metres of retail.

7.6 Residential

A major focus of the new LeBreton Flats community is the provision of housing. As well as designating parcels within which uses will be mixed in nature, there also exist certain areas where only residential uses are proposed. These areas include: the area between the Transitway and the aqueduct; the area between LeBreton Boulevard, Preston Street, Ottawa Street and the east side of Sherwood;

and the area between LeBreton Boulevard, Ottawa Street, the west side of Lloyd Street, and the forebay. In total, the area designated "residential" is 6.5 hectares.

Housing types will provide for more compact development. These types will range from stacked townhouses to apartment buildings, with a maximum building profile of 12 storeys. With this mix and profile, the residential parcels have the potential to support 1,800 residential units. The form, location and design of the housing will be sensitive to the existing site characteristics and to the open space and road networks proposed.

The LeBreton Flats plan does not prescribe specific types of residential uses. It does envision that medium profile buildings will be located in the general vicinity of the aqueduct, taking advantage of quieter local streets (e.g. Ottawa Street) and proximity to linear open space and water amenities. Higher profile buildings will be located along the regional roads (i.e. Scott Street, LeBreton Boulevard).

To encourage walking, cycling and the use of transit, parking for the residential uses will be reduced in those areas in close proximity to the transit station. Parking, where provided, will be mainly structured or underground. On-street parking will be permitted on local streets to accommodate visitors.

The provision of additional residential units in the Central Area is in keeping with the policies of both the Regional and City Official Plans. LeBreton Flats will be the key in meeting the future demands for housing and satisfying these objectives of the Regional and City Official Plans.

7.7 Social and Community Facilities

Projections of both the resident and working populations of the new LeBreton community were developed to determine the demand of this population on existing social and community facilities and services in the area. These projections were made based on assumptions respecting household size, age-sex ratios, impacts of the "aging" of the region's population, and floor area per employee indices. Residential population projections for the new LeBreton range between 4,000 and 4,500 persons; the estimated number of office-retail employees in the new LeBreton community is approximately 6,500. These population figures assume that LeBreton Flats would build out to the maximum profile identified in the report.

The key services of fire, police and health care are well provided for in the surrounding communities, and can accommodate the addition of the new LeBreton Flats residents and workers. Fire station # 2 at 135 Preston Street will serve LeBreton Flats, as will the main police station on Elgin Street and the

Somerset Heights community policing centre. The Somerset West Community Health Centre will provide the new LeBreton Flats community with a wide range of community medical services. A downtown drop-in medical clinic in Centretown (Minto Place on Slater Street) has capacity and is open after hours. Emergency hospital services are available at the full service Ottawa Civic Hospital, and secondary and special care hospital facilities are available at the Grace and St. Vincent Hospitals, all of which are in the vicinity of LeBreton.

Consultation with school boards confirms that school-aged children of the new community can be accommodated at the nine area schools. [2]Youth clubs and activities are able to meet the demands of the new community. The amount of available child care in the area may be a concern, as many facilities in the area are operating at, or close to, capacity. The main branch of the Ottawa Public Library as well as the west branch on Rosemount Street will serve the new LeBreton Flats.

The Dalhousie and Hintonburg Community Centres are operating at or near their capacity; though programs are not necessarily full, the availability of meeting rooms for community group purposes may be a concern for the new community. Space for this purpose may be available in the new City Centre project; if not, provision should be made in the new LeBreton Flats community for such public meeting facilities. These could be accommodated in residential or commercial buildings. Assessment of the level of seniors' facilities and services in the area indicates that there will be sufficient capacity for future LeBreton Flats seniors, primarily at the Good Companions Centre and through a range of "mobile" or in-home care services.

Major recreational facilities such as Tom Brown Arena and the Plant Bath will serve the new community. Both facilities are being well used at the present time by the existing population. The City of Ottawa has indicated that no pool or arena will be required on LeBreton Flats. Though there are numerous parks in the area, the City of Ottawa determined that a municipal park (of approximately 2.5 hectares in area) is required as part of the LeBreton Flats community. This park is included in the plan.

The new LeBreton Flats community will benefit from easy access to the downtown and to adjacent neighbourhoods (walking, cycling and transit) where a wide range of social and community facilities and services exist. Where services are lacking in the surrounding area, they will be provided in the new

[2]Schools in the surrounding area which can accommodate LeBreton students include the following: Ottawa Board of Eductation Schools: Cambridge Street, Centennial, Connaught, Elgin Street, McNabb Park, Lisgar Collegiate, Adult High School, Ottawa Roman Catholic Separate School Board Schools: St. Anthony, Immaculata. There are no French Language schools in the immediate area.

LeBreton Flats community; at this stage, these could include a municipal park, day care facilities and public/community meeting rooms.

7.8 Transportation System

One of the premises of the LeBreton Flats plan is to ensure ease of access to a variety of transportation modes including pedestrian, cycling, public transit and vehicular. The following details how this will occur in the new LeBreton Flats community.

7.8.1 Pedestrian

The new LeBreton Flats community will be a pedestrian-friendly community. To the extent possible, streets will "public places", planned with wide sidewalks and room for street trees and landscaping. Linkages to open spaces and the pathways passing through the site will be a priority. Recreational pathways cater to pedestrians and cyclists, and will offer a primary means of moving around and beyond the community. Open space connections across the aqueduct will extend into the neighbouring residential and business communities, and an at grade pedestrian connection to the lower level of the new transit station is proposed. Elevators at the four corners of the transit station will facilitate the transition from the aqueduct level up onto Booth Street. Rights-of-way for Scott-Wellington-Albert Street, Booth Street and LeBreton Boulevard will have ample medians to ensure safe pedestrian crossing of these regional roads. This and frequent connections with local roads and designated pedestrian crossings will minimize the hindrance that regional roads might otherwise pose to pedestrian movement. All roads and bridges will be designed to respect maximum safe gradients for wheelchairs, and the connections from Booth to Ottawa Street will allow space for ramps as well as stairs.

7.8.2 Cycling

The needs of the recreational cyclist and the bicycle commuter are provided for in the new community. Local streets will have wide road pavements so that motorists and cyclists can share these streets. Booth Street north of the transit station, LeBreton Boulevard and Preston Street (regional roads) will have bicycle lanes or, in the case of Scott-Wellington-Albert, the right-of-way provided through the plan will enable the inclusion of cycle lanes as part of any future road works on this street.

Most local streets lead or connect via short linkages to the recreational pathways along the aqueduct or the Ottawa River, and thereby facilitate connection to the region-wide system of recreational pathways.

7.8.3 Transit

One of the greatest advantages of LeBreton Flats is its location along the regional Transitway route. The convenience and quality of public transit service makes the site accessible to all, and will enable LeBreton Flats residents and workers to significantly reduce their auto dependency. All development parcels south of LeBreton Boulevard lie within a 400 metre radius of the proposed LeBreton transit station.

In the new LeBreton community, the Transitway occupies a new east-west alignment, approximately 30 metres south of its current location at Booth Street, and approximately 70 metres to the south at Preston. This shift and the construction of bridges on Booth and Preston Streets will accommodate the grade separation of vehicular traffic from the transit route, as well as the construction of a new transit station at Booth Street. No longer will there be the at grade intersection of buses and private vehicles at Booth Street, with the accompanying traffic backups and queuing of buses awaiting light changes. The resultant improvement in operational efficiency is significant to the performance of the transit system. Preston Street will likewise pass over the Transitway, as will local connectors from Scott Street to O'Keefe Street.

The roadway surfaces on the bridges on Booth and Preston Streets and local streets will clear the running surface of the Transitway by the required minimum of five metres. Initially, the Transitway will cross the Flats in its new alignment in a slight "cut", as the Transitway must maintain its current elevation to avoid any construction into the watertable.[3] (The watertable is quite high on LeBreton, being equivalent to the level of the Ottawa River.) When residential and commercial parcels on the north and south sides of the Transitway are developed, retaining walls will be placed on either side of the Transitway, and the new grade of these development parcels will equate to the elevations of the Booth and Preston Street bridges. For the entire sector between Scott-Wellington-Albert Street and the open aqueduct, the differences in elevation between the existing and this new grade will be "filled" by the retaining walls, building foundations, parking structures and fill.

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[3] Many options were considered in the tripartite planning process for the realignment of the Transitway and the achievement of grade separation to accommodate a station at Booth. Any option requiring the construction of any part of the Transitway profile (including subsurface road bed or services) in the watertable was automatically rejected by the RMOC due to the liability and public safety threats which might result from unexpected but potential groundwater contamination. This precluded tunnelling the Transitway through the site. Leaving the Transitway in its present or close to present location was rejected as it cut off access to the heritage aqueduct and linear open space and would require the construction of bridges of unacceptable length along Preston and Booth. Options of private air rights development over the Transitway, as well as "covering" the Transitway with a local street, were both rejected due to lack of market interest/feasibility and excessive capital and operational costs (ventilation). The recommended alignment has been optimized to minimize both the profile and the length of the Booth and Preston Street bridges, while achieving the primary objective of grade separation.

The result will be much like the Transitway context at Scott Street and Parkdale Avenue, where the Transitway is in a cut and does not act as a barrier to movement back and forth across it. Instead of blasting a trench to accommodate the Transitway (as was done west of LeBreton), on the LeBreton Flats site, the walls and "subsurface" construction elements on adjacent parcels will "raise" the grade of the new community in this area above the Transitway. The effect will be to "place" the Transitway in a cut, out of sight for much of its length through the site. Local and regional streets will facilitate north-south passage across the Transitway. Ultimately, the Booth Street and Preston Street bridges will only be visible where they cross the Transitway itself and the open aqueduct, and on the immediate north side of the transit station along Booth Street. Grades on Booth Street north of the open aqueduct will be raised slightly so that the bridge does not appear as a bridge; rather the grade of Booth Street and adjacent parcels will slope gently from south to north.

The planning, engineering and environmental challenge of accommodating the Transitway improvements in the context of the new community has been met with the proposed solution in this plan. In isolation, the bridge profiles required to cross over the Transitway are imposing. Placed in the context of the future community development around them in the manner described above, the bridges will recede into the "subsurface". The result will be a below-grade Transitway that no longer poses a barrier to north-south movement across LeBreton, and a liberated band of land on the south side of the aqueduct that will accommodate attractive residential development and public open space.

The detailed treatment and design of the realigned Transitway and the Booth Street bridge will be guided by design guidelines jointly developed by staff of the RMOC and the NCC. These guidelines are currently being developed. Environmental issues of noise and air quality, as well as the impacts of transitway stormwater drainage of the realigned Transitway will be addressed by the RMOC in order to satisfy federal environmental assessment requirements. It is anticipated that these studies will be undertaken in the near future. Findings of these undertakings will refine the parameters of the Transitway project.

7.8.4 Roads

The road system that will serve the new LeBreton Flats community is shown on Figure 6 (Proposed Land Use), and combines old original street alignments with proposed new streets. Regional roads include: the existing Booth Street, in its current alignment; LeBreton Boulevard, a new regional road which replaces a section of the Ottawa River Parkway between the inlet to the aqueducts and the Wellington-Portage Bridge intersection; and an extension of Preston Street north of Scott-Wellington-Albert Streets .

Local streets follow closely the alignment of old local streets that served the former LeBreton Flats community, and their names have been preserved: Broad, Sherwood, Lloyd and Lett Streets. A new street, Fogarty Street, is located between Preston and Broad Streets. Ottawa Street remains in its current alignment, although it no longer crosses Booth Street because of a slightly higher elevation of the Booth Street bridge.[4] Non-vehicular linkages are proposed between Ottawa Street and Booth Street to maintain pedestrian connections. South of the aqueduct, the new O'Keefe Street runs east-west along the northern side of the realigned Transitway. Four small bridges and streets connect O'Keefe Street to Scott-Wellington-Albert Street across the Transitway. Oregon Street is a local street that provides access to the development parcels in the northerly sector of the Flats, running east-west along the south side of these parcels. Its alignment is further south than its predecessor, and it connects at its east and west ends to LeBreton Boulevard as well as intersecting Booth Street.

The following Table lists the streets in the new LeBreton community, the level of government responsible for them, and their right-of-way widths as recommended in the plan. Cross-sections of these streets appear as Figure 7.

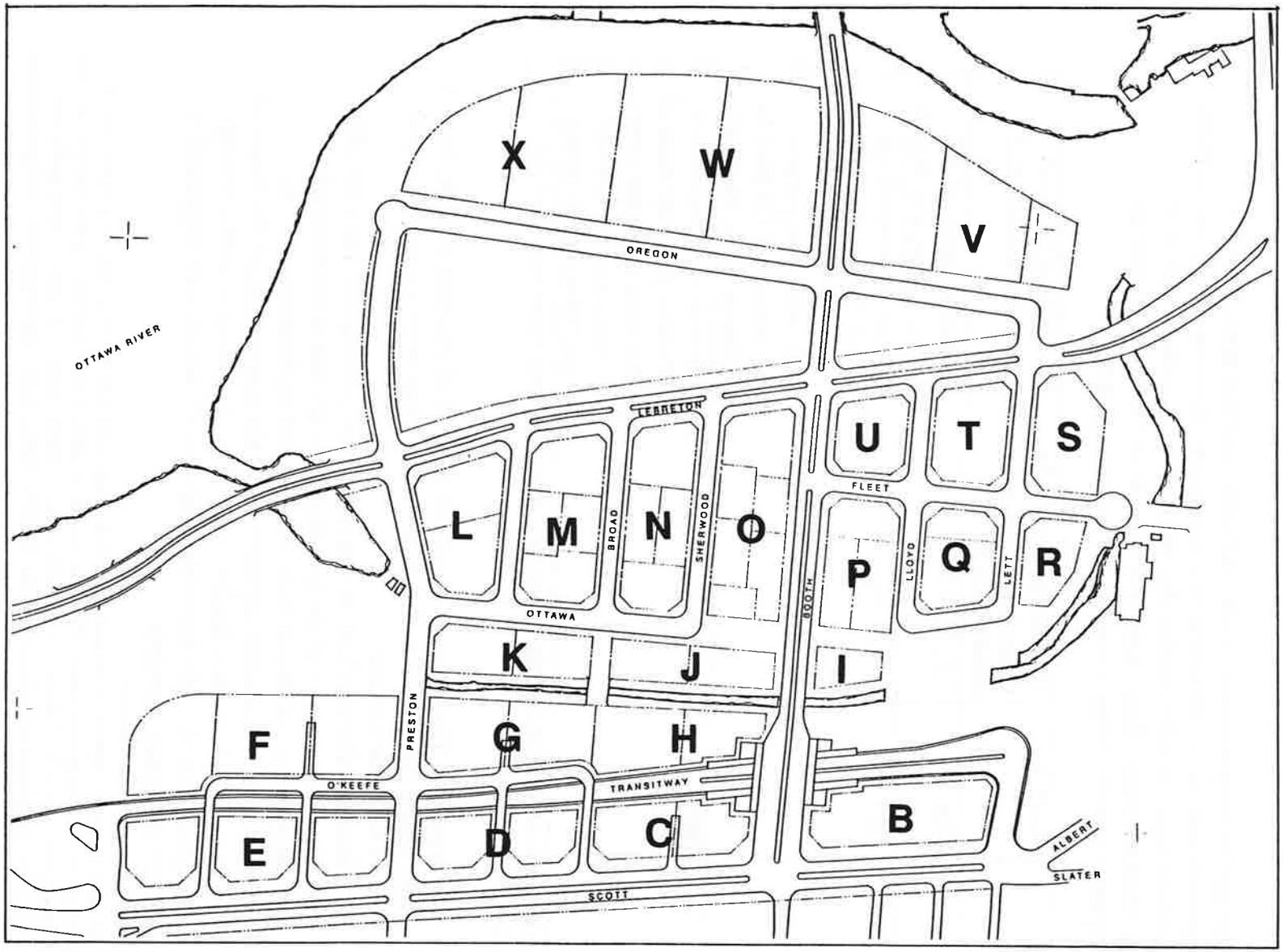
Street Name	Government Responsible	Right-of-Way Width
Ottawa River Parkway	NCC	20 metres (pavement)
LeBreton Boulevard	RMOC	37.5 metres
Booth Street	RMOC	33.5/34.5 metres
Preston Street	RMOC	26 metres
Oregon, Fogarty, Broad, Sherwood, Lloyd, Lett, Ottawa & O'Keefe Streets	City of Ottawa	21.5 metres *

* It is recognized that this dimension is wider than the current standard; this is to accommodate wider than average sidewalks, trees and street landscaping, and wider road pavement to accommodate cyclists. In addition, no front yard setbacks were seen to be a prerequisite for adjacent development parcels.

7.9 Traffic Impact and Phasing

A phasing and traffic impact study, which incorporates key assumptions of the RMOC's draft Transportation Master Plan, was completed in January 1997 (Delcan). The objective of the study was to identify the roads required to serve three broad stages or phases of future LeBreton site development. The full

[4] It should be noted that all existing City streets, including those mentioned here (Broad, Sherwood, Lloyd, Lett, Ottawa) will closed by bylaw and the lands comprising these streets will be conveyed to the NCC as part of the implementation of the land agreement. The streets similarly named in the Concept Plan will therefore be "re-created" through future plan of subdivision.



LeBreton Flats
Les plaines LeBreton

Traffic impact: Development Parcels
Influence de la circulation : îlots aménagés

8 Fig.

Delcan report, "LeBreton Flats Development - Road Network Requirements (1997)" provides a full listing of modelling assumptions and results.

Three scenarios were assessed, each assuming a certain amount of site development and the construction of a certain set of streets (or segments thereof). The "horizon year" of 2021 used in this study corresponds to that of the Transportation Master Plan. Refer to Figure 8 for the identification of development parcels (letters) used in the following table.

Stage	Dev't at ...	Development Blocks Completed (complete site development by 2021)	Additions to Road Network Completed
1	2006	I, P, Q, R, S, T, U	Initial segment of LB Blvd, 2 lane, E of Booth
2	2011	B, C, J, K, L, M, N, O	Initial segment of LB Blvd, 2 lane, W of Booth; Preston Street, Scott to LB Blvd; Temporary connector of LB Blvd to Ottawa River Parkway
3	2021	D, E, F, G, H, I, V, W, X	Removal of segment of Parkway; completion of LB Blvd as 4 lane street, connected to Parkway and Wellington Street

Other important "transportation network" assumptions were made for the purposes of this study.

The realigned Transitway is assumed to be in place prior to 2006, Stage 1 completion (most recent RMOC planning projections propose the year 2003-4 for construction).

The Bronson-Portage Link is assumed to be provided by the year 2021; note that it is not part of the LeBreton concept nor is it specifically referenced in this Official Plan Amendment application. A more conventional intersection is proposed at the intersection of the Bronson-Portage Link, LeBreton Boulevard, Wellington Street and the Portage Bridge, rather than the four-sided "gyratory"[5] which was suggested in previous design exercises.

[5] The gyratory is a large, four sided intersection (which looks much like the four sides of a square) which has appeared in previous demonstration illustrations of the LeBreton Concept Plan. In the centre of the four streets which form each side of the square is a large space of public square. As part of some preliminary design work for Confederation Boulevard and the Bronson-Portage Link, this intersection configuration was recommended as a solution to maximize the capacity of this crossroads. Without prejudice to future design decisions respecting this issue, these OPA applications do not incorporate or seek support for this configuration.

The Champagne Arterial has been dropped from the RMOC's draft Official Plan and is therefore not included in the roadway network.

It is deemed necessary to make a temporary connection between the west end of LeBreton Boulevard and the Ottawa River Parkway at 2011; this connection would no longer be necessary when the Ottawa River Parkway is removed and the Boulevard is connected to Wellington and to the Parkway at its east and west end.

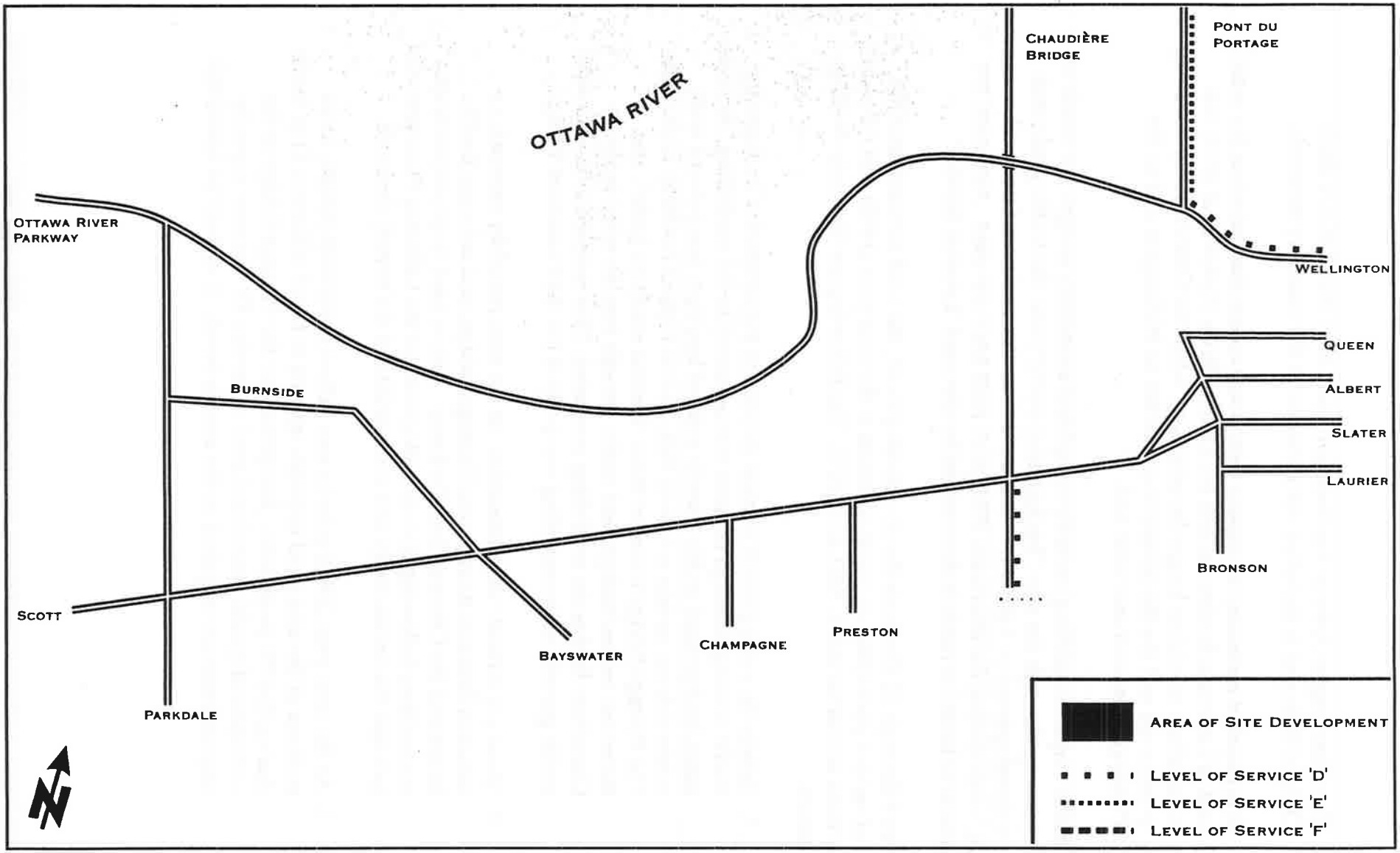
The traffic impact modelling recently completed essentially assigns the levels of traffic passing through the site ("background traffic") and the traffic generated by new development on LeBreton ("site traffic") to the area's road network. Traffic levels during the afternoon (PM) peak rush hour are used. Any need for new roads or lanes on roads is determined by the road "Level of Service".

Figures 9 through 12 illustrate the site development, the road network and the level of service prevailing on the area streets at the base year (1995) and for each of the three scenarios (2006, 2011 and 2021). The following are the main findings and issues.

1. Generally, a one percent annual increase in the amount of background traffic flowing through the area was assumed in the modelling. In some cases, background traffic growth rates of less than one percent were achievable on certain roadway links due to limited roadway capacities. The Portage Bridge is one of these "limited roadway links", and therefore, excess background traffic growth was diverted to the Chaudiere Bridge for modelling purposes. This resulted in background traffic growth rates exceeding one percent for the Chaudiere Bridge.

2. There are critical "discontinuities" in the area roadway network, i.e. between Bronson Avenue and Portage Bridge, and between Booth Street and the Ottawa River Parkway. Future road improvements and connections following the redevelopment of the LeBreton Flats site will increase the connectivity and accessibility of the overall network.

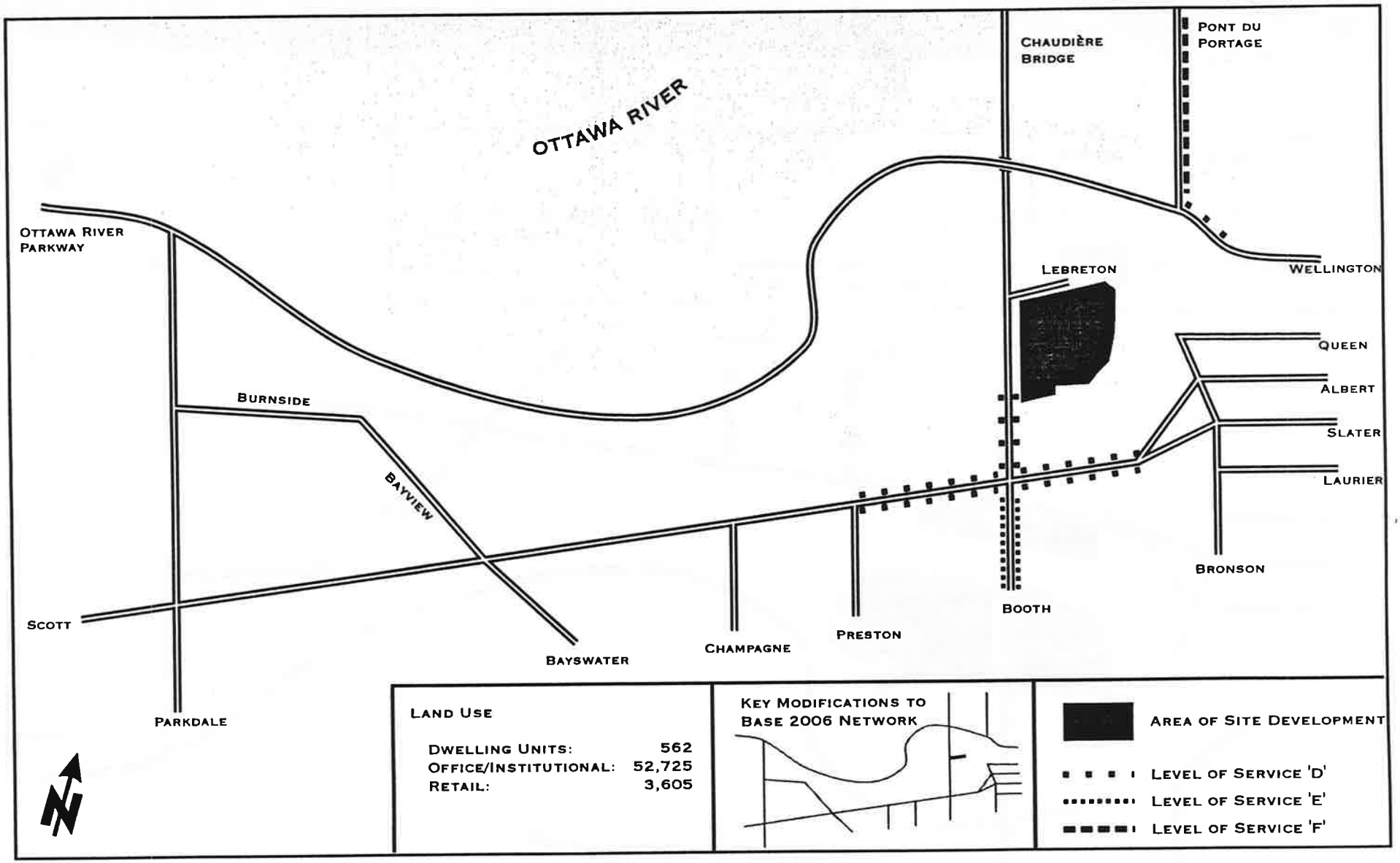
3. At the base year (1995) prior to any LeBreton redevelopment, most sections of the area road network operate at Level of Service D or better during the PM peak hour. Exceptions are the Portage Bridge in the northbound (peak) direction (Level of Service E). No new capacity requirements are required to the area network. It should be noted that



LeBreton Flats
Les plaines LeBreton

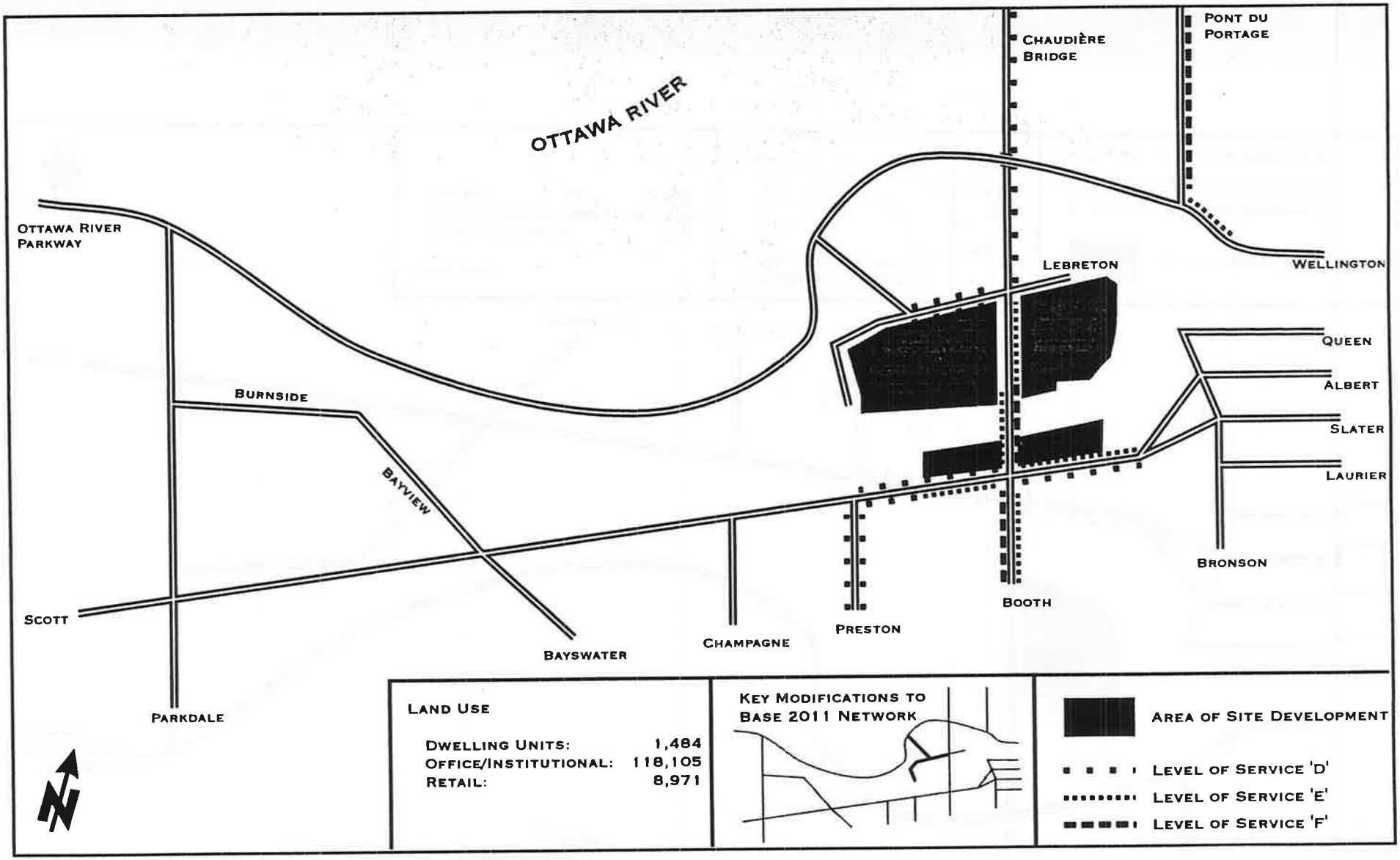
Traffic Impact: Base Year
Impact de la circulation: année de référence

Fig 9



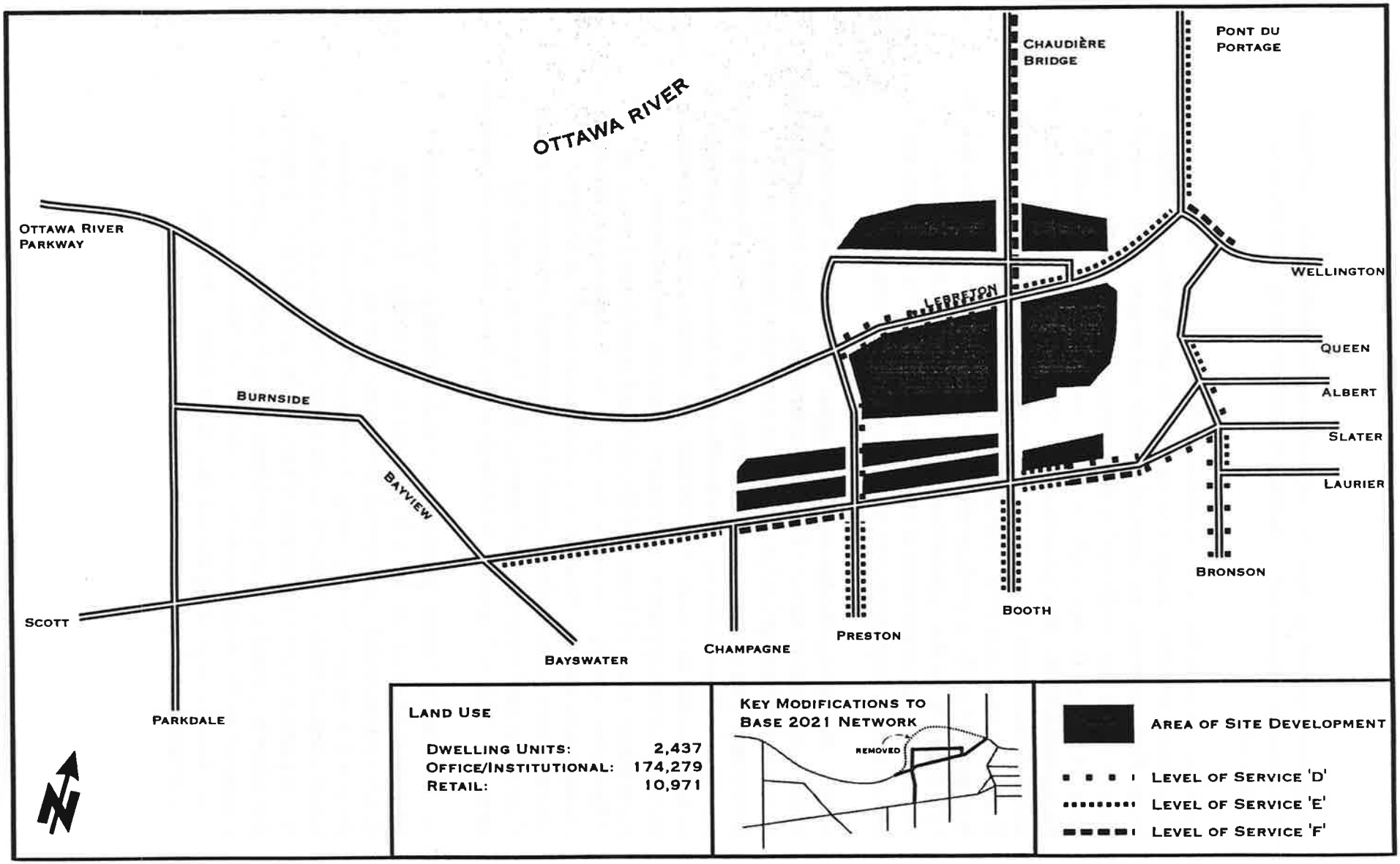
LeBreton Flats
Les plaines LeBreton

Traffic Impact: 2006
Impact de la circulation: 2006



LeBreton Flats
Les plaines LeBreton

Traffic Impact: 2011
Impact de la circulation: 2011



LeBreton Flats
Les plaines LeBreton

Traffic Impact: 2021
Impact de la circulation: 2021

12
Fig

the general operating characteristics of road segments were analyzed, but no detailed operational analysis of intersection operations was undertaken.

4. At stage one of LeBreton development (2006), there are only incremental negative changes to the level of service on several road links. Portage Bridge northbound is projected to operate at Level of Service F, and the westbound bridge approach on Wellington Street at Level of Service D; this results in minor congestion and is caused by background traffic (interprovincial) growth. There is a limited amount of site development at this stage, and partial construction of LeBreton Boulevard as a local road. The combination of this traffic with background traffic growth results in a reduction in Levels of Service, to LOS D and E, on the approaches to the Booth-Albert intersection. Operational improvements to this intersection may be required; no other capacity improvements are necessary at this stage.

5. In 2011, the Portage Bridge and Wellington Street links to the Bridge operate at Levels of Service F and E respectively. The Chaudiere Bridge now relieves Portage Bridge congestion somewhat because of the temporary connection between the west end of LeBreton Boulevard and the Ottawa River Parkway. The Booth-Albert intersection continues to be under stress as it is still the primary site access; Levels of Service on the intersection approaches continue to worsen. Booth Street northbound north of Scott, and Booth Street southbound south of Albert now operate at Level of Service F. For these reasons, the study recommends that the Preston Street extension (north of Scott to intersect with LeBreton Boulevard) be constructed at this stage, rather than at the next stage of development (2021) as was previously assumed. This will ease the bottleneck at the Booth-Albert intersection.

6. At 2021, full site development, the Chaudiere Bridge is projected to operate at Level of Service F, in part due to site traffic. LeBreton Boulevard (now fully connected) westbound operates at Level of Service E from the Portage Bridge to west of Booth Street. Preston Street north of Scott and Booth, south of Albert Streets are at LOS E, while parts of Scott-Wellington-Albert Streets are at LOS F. There will therefore be a need to relieve problems along Scott Street; a solution suggested in the study would be to widen Scott Street from four to six lanes, thereby improving the congestion problems. The full development of City Centre will underscore this need.

7.10 Infrastructure

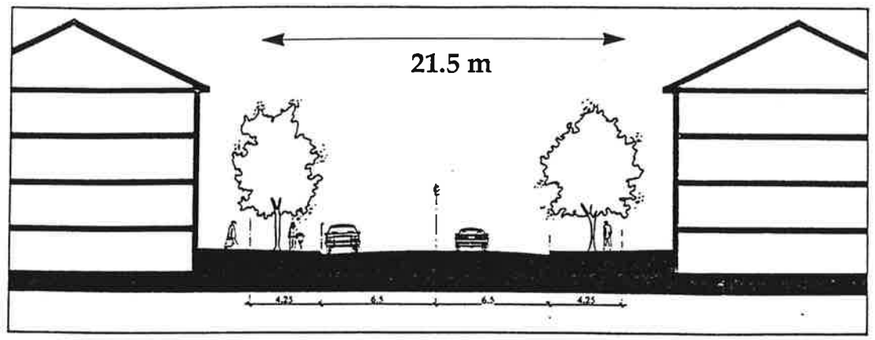
The new LeBreton Flats community has been reviewed for infrastructure requirements and the following details site servicing requirements and proposals. Ainley Graham and Associates recently completed an update to an infrastructure needs assessment for the LeBreton Flats plan; this 1996 report forms part of this application (LeBreton Flats Redevelopment - Infrastructure Needs Assessment (1996 update), December 1996).

7.10.1 Sanitary Services

A layout for sanitary servicing for the new LeBreton Flats community is shown on Figures 13 and 14. The sanitary flows from the new community will outlet to two regional trunk sewers. All development north of the open aqueduct will outlet to the Central Interceptor sewer via a connection from the north side of the aqueduct to the Lloyd Street sewer immediately downstream of the Lloyd-Preston Regulator Chamber. (Connecting downstream of the regulator ensures that no LeBreton Flats flows will contribute to increased combined sewer overflows). Development in the zone between the open aqueduct and Scott-Wellington-Albert Street will outlet to the West Nepean sewer at a point under the southeast corner of Preston and Wellington Streets.

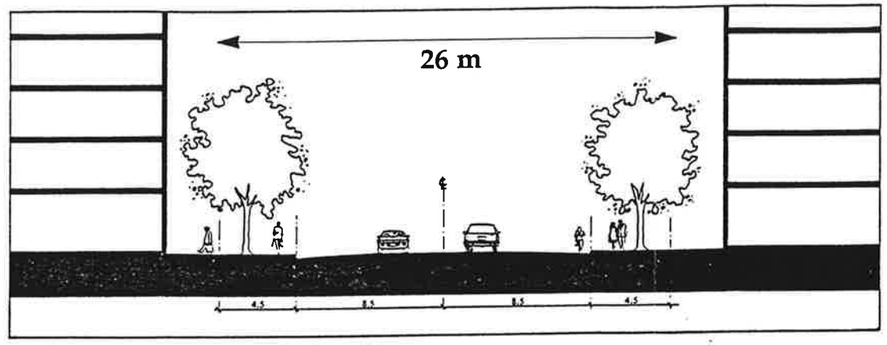
The Central Interceptor sewer currently operates at or above capacity. According to the RMOC's 1997 Wastewater Master Plan (in draft form at the time of this application), the issue of creating capacity in the Central Interceptor Sewer is critical and must be resolved prior to the acceptance of any new flows, including those from a redeveloped LeBreton Flats. In order to reduce flows into the Central Interceptor from the contributing sewers, several works are proposed. Most importantly, three diversions (and their estimated operable dates) are proposed for the West Nepean Collector: 1) the Mooney's Bay/Borden Farm Diversion (by 1998); 2) the Crystal Beach/Graham Creek Diversion (by 1999); and 3) the Woodroffe/Baseline Diversion (by 2001). The gate operation in the Lloyd-Preston Regulator and the Lloyd-Booth Regulator will be modified to reduce the overflow rate to the Central Interceptor. These diversions and gate modifications will reduce the flows to the Central Interceptor and will effectively create sufficient capacity for the LeBreton flows.

In order to accommodate site development, the inactive old sewers under the streets will first be decommissioned. New local sewers will be installed in accordance with the proposed sanitary sewer collection scheme shown on Figure 14. Realignments of sections of the Cave Creek Collector and the Preston Street sewers between Champagne and Booth Streets will be required to accommodate development in the sector between the open aqueduct and Scott-Wellington-Albert Street. The section of the existing Cave Creek from a point approximately



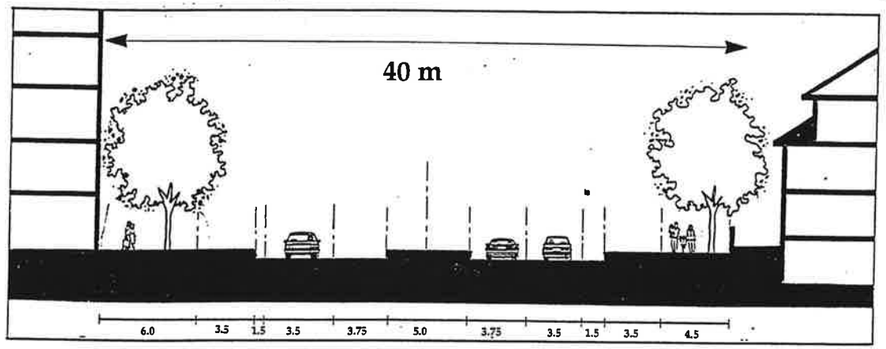
Typical Residential Street

Rue résidentielle typique



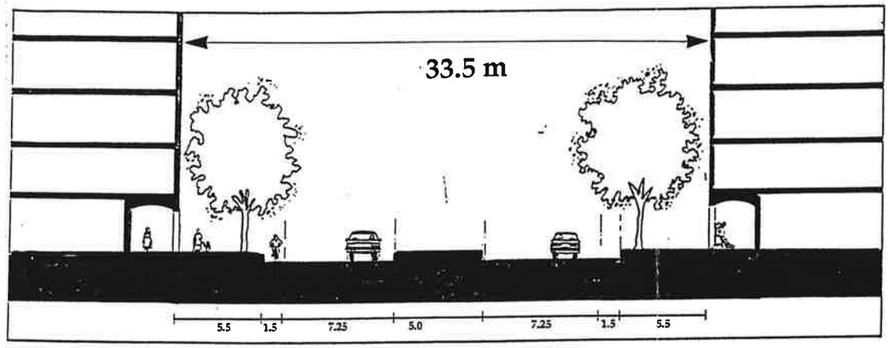
Preston Street

La rue Preston



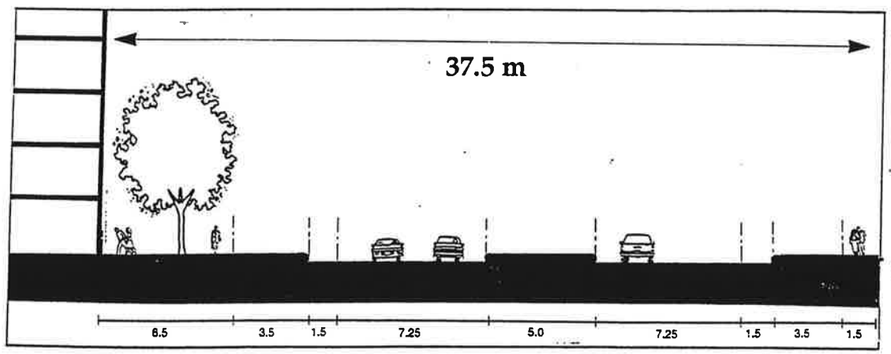
Scott Street

La rue Scott



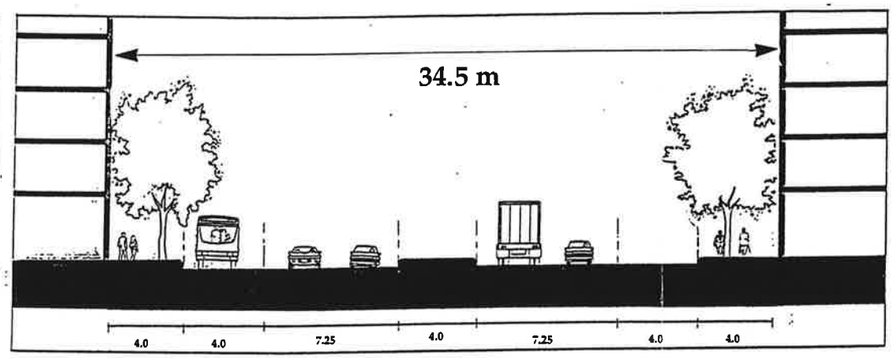
Booth Street

La rue Booth



LeBreton Boulevard

Boulevard LeBreton



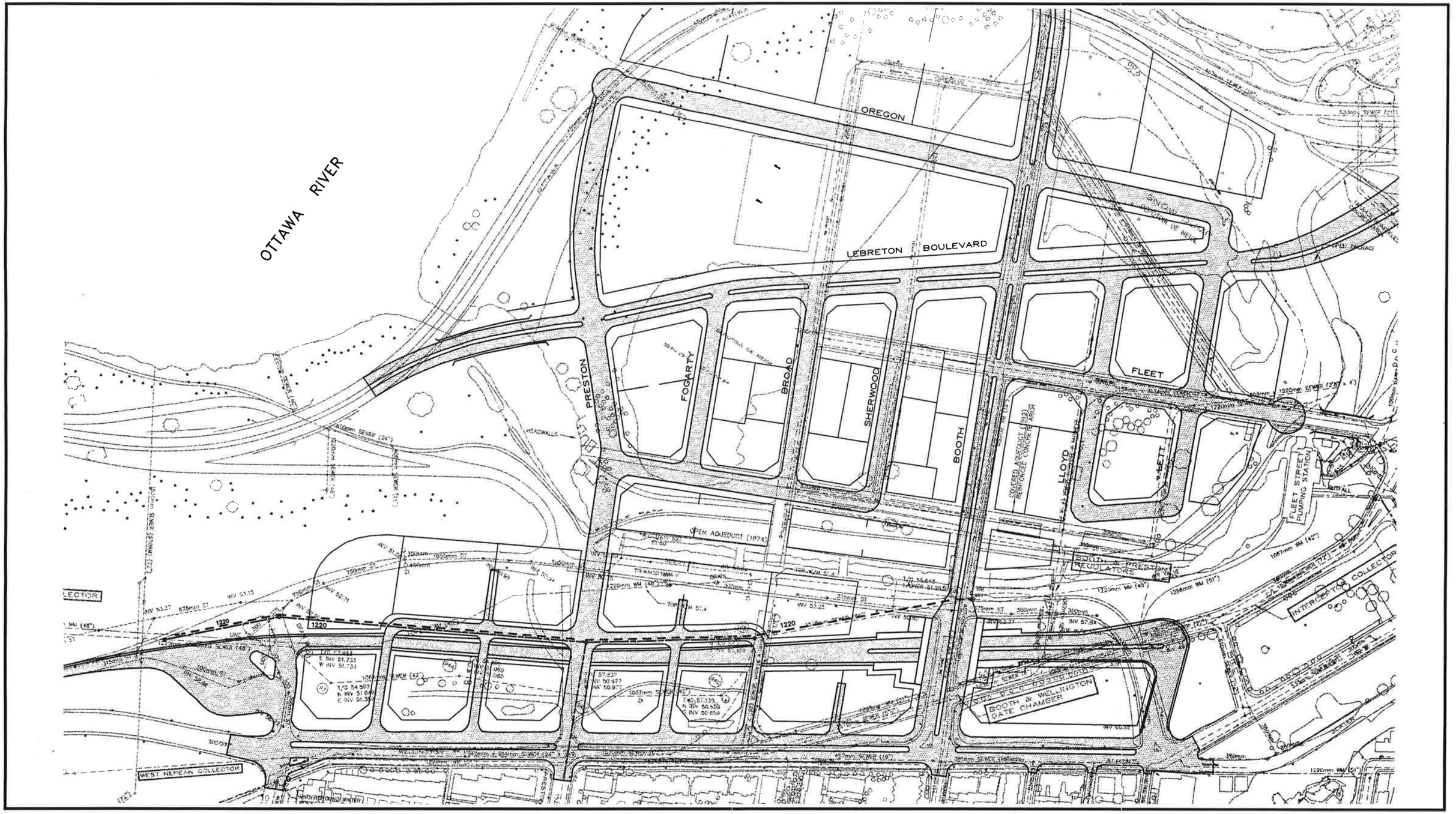
Booth Street Near Scott

La rue Booth près de la rue Scott

LeBreton Flats
Les Plaines LeBreton

Proposed Street Cross - Sections
Rues proposées - Coupes

Figure 7



LeBreton Flats
Les Plaines LeBreton

Proposed Site Servicing: Trunk Services Realignment
Infrastructures proposées - Réseaux de communications

13
Figure

LeBreton Flats
Les Plaines LeBreton

Proposed Site Servicing: Sanitary Sewer Collection System
Infrastructures proposées - Réseau sanitaire

Figure 14

LeBreton Flats
Les Plaines LeBreton

Proposed Site Servicing: Water Distribution System
Infrastructures proposées - Réseau d'aqueduc

15
Figure

100 metres west of Champagne Street North to just east of existing Broad Street would be decommissioned. This section would be replaced by a new 600 metre section of sewer to be placed in an alignment coincident with the proposed O'Keefe Street located immediately north of and parallel to the Transitway. The section of the Preston Street sewer between Wellington and Broad would be relocated to the Preston Street extension north of Wellington Street, to reconnect to the Cave Creek in its new alignment under the O'Keefe-Preston Street intersection.

7.10.2 Stormwater

Conceptual design work has been completed for a LeBreton stormwater management scheme (Novatech Engineering, 1991). According to this 1991 scheme, three drainage areas are identified for the new LeBreton Flats community. Two major areas are delineated between the open aqueduct and the Ottawa River (Areas 1 and 2) as well as a third area (Area 3) between the open aqueduct and Scott-Wellington-Albert Street. Five year peak flows are proposed to outlet from Areas 1 and 2 to the tailrace, downstream of the pumping station, via an existing combined sewer overflow which outlets to the tailrace immediately north of Pooley's Bridge. Five year peak flows from Area 3 are proposed to outlet to the open aqueduct via the existing oversized Transitway sewer outfall.

Attenuation requirements for Areas 1 and 2 are proposed to be met by a combination of a passive detention facility proposed in the LeBreton Common and by the development of a detention/quality treatment facility or system just downstream of the pumping station. For Area 3, should detention be required, a storage area is proposed at the upstream end of the open aqueduct, adjacent to the inlet from the Ottawa River. Storage within the open aqueduct has also been identified as a possibility.

Concerns have been identified recently respecting the resuspension of contaminated sediments in the base of the open aqueduct and potential Type 1 fish habitat in the tailrace area. As a result, Novatech's 1991 stormwater concept is being revisited. In order to address these and other concerns and to assess the viability of the 1991 concept, a detailed stormwater management feasibility study is currently underway. Further detail on stormwater impact issues, the major tasks of the current study and the implications of this work appear in Section 8.4.3.2 of this report. In addition, the complete terms of reference for the stormwater management feasibility study appear as Annex 7. Following the completion of this study, the Novatech 1991 concept will be confirmed as viable, or an alternative solution will be identified and submitted to the regulatory agencies for their approval.

7.10.3 Water

The water servicing layout for LeBreton appears on Figure 15 (also refer to Ainley Graham and Associates, 1996, attached). The existing local distribution network will be abandoned or replaced in its entirety with the exception of currently active works.[6] New looped networks will be constructed in phases as development occurs. The new LeBreton system will be connected to the existing Regional water distribution system at two locations: one 406 mm diameter watermain from the outlet of the Fleet Street pumping station and a second 406 mm watermain from the existing 1295 mm watermain on Wellington Street at Booth Street. The existing 406 mm watermain feed to the E. B. Eddy plant will also be replaced (same diameter).

Internal watermain sizes are based primarily on fire flow demands (using a target flow capability of 15,000 litres/minute for 3 hours), rather than on simply meeting the projected daily demands of the new community (which are much lower volumes). The LeBreton Flats community will benefit from its proximity to both the Lemieux and the Fleet Street stations and will be serviced by high, steady water pressures.

Prior to site development proceeding in the sector between Scott-Wellington-Albert Street and the open aqueduct, the section of Line C watermain between the bus lay-up (a point 100 metres west of Champagne Street north) and Booth Street will be replaced by a new section of pipe to be placed in the O'Keefe Street alignment on the north side of the Transitway. The realigned sections of both Line C and the Cave Creek sewer (referenced above) will follow the O'Keefe Street alignment, cross the open space just northwest of the transit station, and reconnect to their existing respective pipes on the west side of Booth Street just south of the open aqueduct.

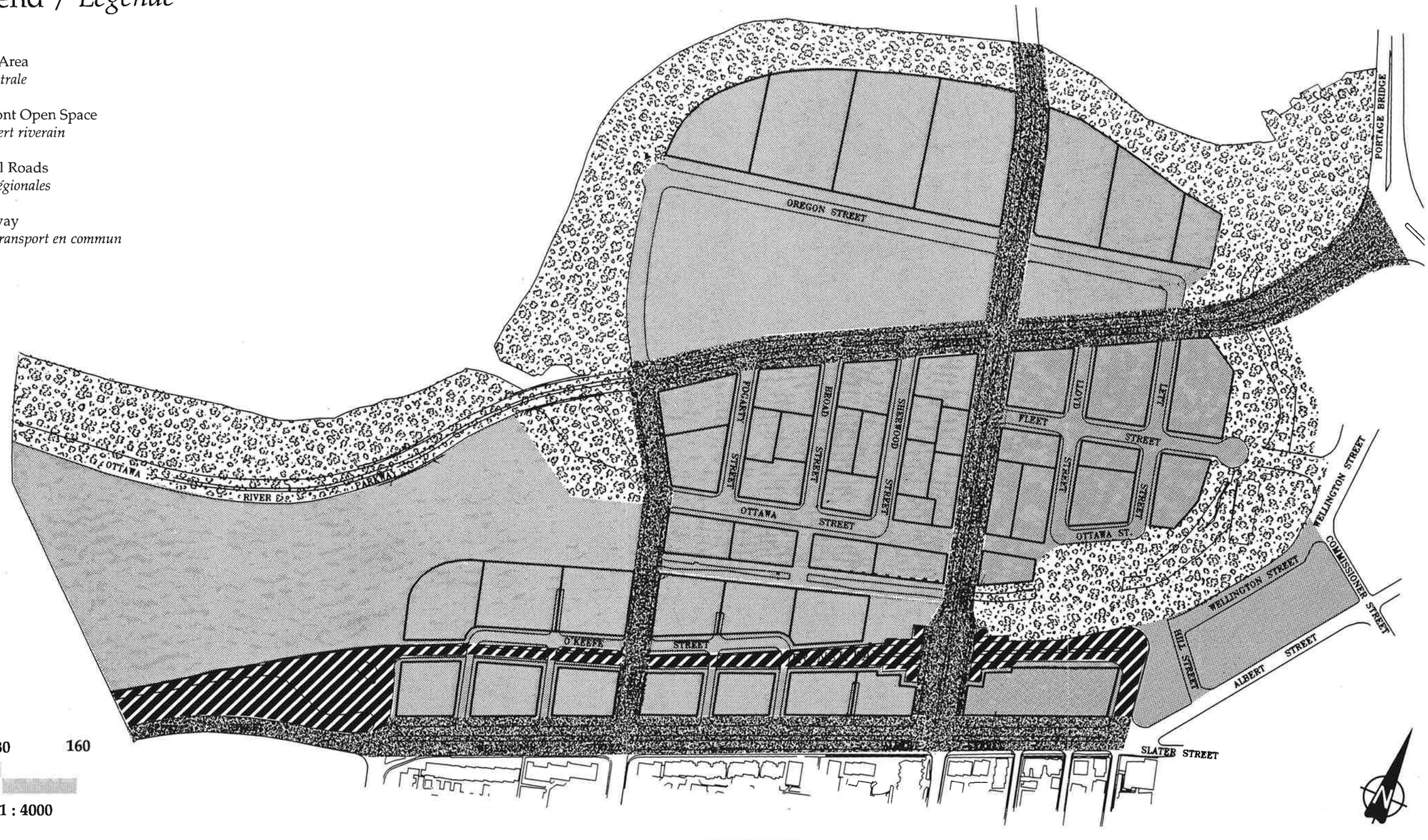
7.11 Phasing of Site Development

The following discussion on phasing of development and infrastructure is based on a combination of "best estimates" and market analysis regarding the building development, and the development staging scenarios used in the traffic impact modelling study (Delcan, Section 7.9).

[6] Active works identified by the RMOC include the Fleet Street pumping station (including the inlet control works, the open and covered aqueducts), Lines B and C and distribution watermains (203 mm old Wellington, 127 mm Hill, 406 mm Booth, 305 mm Fleet, 127 mm Lett and 127 mm Ottawa Streets).

Legend / *Légende*

- Central Area
  Zone centrale
- Waterfront Open Space
  Espace vert riverain
- Regional Roads
  Routes régionales
- Transitway
  Voie de transport en commun



80 40 0 80 160

Scale / *Échelle* 1 : 4000

LeBreton Flats
Les Plaines LeBreton

Regional Official Plan Amendment
Modification du Plan directeur régional

17
Figure

7.11.1 Building Development

Due to the size of the LeBreton Flats site and the magnitude of the development proposed, the buildout of this project is envisioned to span at least twenty years. A possible phasing of building development was used for the purposes of traffic impact modelling (Section 7.9). Ultimately, however, it is the vitality of the economy and in turn the real estate market that will determine the rate of development of the sites and the rate of absorption of built development.

Sites south of LeBreton Boulevard will be sold to developers for development. For lands under private ownership at the time of development, lot creation will proceed by plan of subdivision. North of LeBreton Boulevard, the ownership of these national interest lands will be retained by the NCC, and projects proposed for the development parcels in this area would likely proceed by way of long term lease agreements. For lands under federal ownership, plan of subdivision, part lot control exemption or consent to sever may be pursued to achieve lot creation.

A key factor in the timing of the LeBreton Flats development will be the timing of the Transitway realignment, and Booth Street bridge and transit station construction. The magnitude of this project, coupled with the required changes in finished grade created by the grade separation/bridge construction, favours a phasing approach wherein the transit project precedes building development on the site.[7]

Market analysis conducted respecting the LeBreton Flats plan recommended that the area between Booth Street, LeBreton Boulevard, the tailrace/forebay and the open aqueduct be developed first. This area is a mix of commercial office/retail and residential, and features one of the more desirable residential settings on LeBreton Flats; a range of housing densities and forms are proposed. Mixed residential-commercial development along Booth Street is envisioned to occur next, followed by residential and commercial development between Booth Street and Preston Street, again all on the north side of the aqueduct. It is likely that the development of the two blocks on the south side of the transit station at the Booth-Albert Streets corners would occur next.

The sites between the aqueduct and Scott-Wellington-Albert Street are expected to be developed after the area north of the aqueduct. As described in Section 7.8.3 above, both Preston and Booth Streets clear the transitway and aqueduct via bridge structures, and in so doing, require that local street connections to development parcels occur at the new grade of these bridge structures. Filling

[7] It is conceivable that development of some of the residential parcels fronting on local streets both east of Booth, in the vicinity of the forebay and west of Booth in internal blocks not fronting on Booth or Preston, could precede the construction of the realigned Transitway, station and bridges.

the gap between existing grade and this new finished grade by a combination of fill, underground parking structures and retaining walls will be expensive and challenging. Scott Street is also a busy regional road. However, sensitive building forms and site orientations, setbacks, mixed use opportunities and landscaping will enhance the attractiveness of those development parcels fronting on Scott Street.

The cultural/institutional area to the north of the site proposes a unique mix of uses and the role of the public sector will be key in making these sites available for development. The timing of the removal of the segment of the Ottawa River Parkway will be determined by demand for and interest in these cultural-institutional parcels. For these reasons, the timing of development of these parcels is difficult to predict, but it is envisioned that these sites may well be the last to be developed.

7.11.2 Roads

The results of the traffic impact modelling of LeBreton Flats site development, described in Section 7.9 above, indicate that a number of regional road projects will be necessary to provide capacity in the overall road network. Widths for the rights-of-way for regional and local roads, though proposed in this application, will be determined through Regional and City review.

LeBreton Boulevard will be constructed in phases: initially as a two lane local road to serve adjacent development parcels (at stages of development 2006 and 2011), and as a four lane regional road at full site development (2021). A temporary connector of the west end of LeBreton Boulevard to the Ottawa River Parkway, north of the inlet to the aqueduct, will be necessary at the year 2011; this connector will be removed when the full Boulevard is connected to the Parkway and to the west end of Wellington Street to effectively replace the segment of the Ottawa River Parkway which presently exists along the northern edge of the site. The removal of this northerly portion of the Parkway will coincide with the connection of LeBreton Boulevard to the Parkway at the inlet to the aqueduct and to the Wellington-Portage Bridge intersection. The connection to Wellington-Portage necessitates the construction of a bridge to cross the tailrace and upgrades/reconfiguration to the existing Parkway-Wellington-Portage intersection. The Bronson-Portage Link, if completed at 2021, would form the southerly approach to this intersection.

The construction of Preston Street (a regional road) north of Scott-Wellington Street and its connection to LeBreton Boulevard will constitute a valuable alternative interprovincial route, and will ease the bottleneck at the Booth-Albert Streets intersection. This roadway is required at the year 2011 and will consist essentially of a bridge from Scott-Wellington to just north of the aqueduct in

order to clear both the Transitway and the open aqueduct. Provision will be made to allow sufficient clearance at the aqueduct to accommodate east-west recreational pathway connections under the bridge.

Booth Street improvements essentially consist of the bridge construction incorporating the grade-separated transit station and aqueduct crossing, and intersection improvements at Albert Street and LeBreton Boulevard. Timing of Booth Street works will correspond to the timing of the transitway realignment, and the construction of LeBreton Boulevard (in stages, at 2006, 2011 and 2021). According to the traffic impact study, Scott-Wellington-Albert Street is deemed to be under sufficient pressure to necessitate six vehicular lanes at 2021; the right-of-way proposed in this application (and guaranteed through land conveyances specified in the LeBreton Flats Master Land Agreement) will ensure that there is space for six vehicular lanes, as well as cycling lanes and a widened sidewalk on the south side of the Street.

The provision and precise location and design of local streets will be confirmed at the subdivision plan stage of site development.

7.11.3 Transitway

The construction of the realigned, grade separated transitway is the most important infrastructure project in the LeBreton Flats plan. As referenced in Section 7.11.1, this project would ideally occur before any building development on the site, prior to the year 2006. The project would require two construction seasons to complete, and would require the retention of the existing Transitway and access to an aqueduct bridge other than the existing Booth Street bridge in order to ensure the continued passage of buses and to "detour" interprovincial traffic around the construction site.

7.11.4 Piped Infrastructure

Sanitary sewer capacity for the new LeBreton Flats community will be available following the creation of capacity in the Central Interceptor sewer; this will occur following the completion of three proposed diversions on the West Nepean and contributing sewers (see section 7.10.1). The RMOC's draft Water and Wastewater Master Plan proposes that these diversions all be in place by the year 2001.

Realignments of regional trunks are required to enable development of the area between Scott-Wellington-Albert Street and the open aqueduct. Sections of both the Cave Creek sewer and Line C watermain will be relocated to the O'Keefe Street local street alignment along the north side of the realigned transitway. In addition, a section of the Preston Street sewer will also be relocated, into the

future Preston Street alignment. Works in this area would be required prior to site development in the area, estimated to occur by the year 2021 in the traffic impact study.

The Booth Street watermain is currently in poor condition; its replacement could occur prior to site redevelopment.

Provision of the remainder of the local sanitary and water network on the site will proceed as development and construction of new roads proceeds, according to approved plans of subdivision. This will involve decommissioning of the existing, obsolete pipes on the site.

More detail on the provision of piped infrastructure, its phasing and cost estimates are provided in the appended Ainley Graham and Associates report (1996).

Stormwater management planning continues for the new LeBreton Flats community. As referenced in Section 7.10.1, the study currently underway will be submitted to the regulatory agencies for their approval. Specific undertakings, including the requirement to conduct any further study and the requirements to submit further stormwater plans at subsequent stages of the municipal planning approvals process will be specified as part of the decision on these Official Plan Amendment applications. The specifications, timing and location of particular stormwater management facilities would be specified in accordance with these and future municipal and regional decisions.

7.11.5 Open Space and Heritage Resource Improvements

Open space improvements will be staged with building and infrastructure development. It is envisioned that the full development of the municipal park would occur at a stage coinciding with the full development of the sector between the open aqueduct and LeBreton Boulevard. LeBreton Common would not be fully developed until the northerly section of the Ottawa River Parkway is removed; at this stage, it would also be possible to improve the waterfront corridor lands in this area and construct this segment of the recreational pathway.

Improvements to the open aqueduct will be determined by the timing of the Aqueduct Improvement Project as specified in the LeBreton Flats Master Land Agreement. This project is to be undertaken by the Region, and will incorporate the works generally described in Section 7.3.1. Precise timing of these improvements is not determined at this time, however, it is possible that they will be the first intervention on the LeBreton Flats site (i.e. before any building or infrastructure development).

7.11.6 Land Conveyances (LeBreton Flats Master Land Agreement)

Following the approvals of Official Plan Amendments, the Land Agreement can be implemented. The result will generally be the consolidation of lands comprising development parcels and open spaces identified in the LeBreton Flats plan under the ownership of the NCC. Lands will be transferred to the Region for the realignment of the transitway and associated structures, and for widened regional road rights-of-way.

All existing active infrastructure on LeBreton Flats will be protected by the transfers of easements by the NCC to the responsible municipality. This will include easements for identified relocations of trunk services, including the Cave Creek Collector and Line C Watermain. Easements for access to municipal waterworks facilities (inlet control works structures, the forebay walls and the pumping station) will be transferred to the Region.

The net result of the land conveyances will be to facilitate the future development of LeBreton Flats, and remove the impediment posed by the previous "patchwork" ownership pattern. For a summary of the land conveyances identified in the Land Agreement, refer to Annex 8: Summary of Conveyances - LeBreton Flats Master Land Agreement.

8.0 ENVIRONMENTAL IMPACT ASSESSMENT

8.1 Introduction

Environmental considerations have represented and will continue to represent a key component in the planning of the new LeBreton Flats community. This section provides a complete update on the status of the environmental component of the LeBreton Flats plan.

An Initial Environmental Evaluation (IEE) of the Concept Plan was completed in 1991 according to the NCC Environmental Assessment Policy and Procedures, and the federal Environmental Assessment and Review Process (EARP). A number of additional studies were completed as per the recommendations of the IEE which addressed deficiencies in certain baseline information and influenced the evolution of the Concept Plan. Following further refinements of the concept and public consultations in 1991 and 1992, an Addendum to the IEE was completed in 1994 to provide an update of impacts resulting from the changes. A number of other environmental and technical studies have also been completed in parallel to the EA process, or subsequent to the Addendum (see complete list of references in Annex 1). The Initial Environmental Evaluation (Beauchemin, Beaton, Lapointe, 1991), the Addendum to the IEE (NCC, 1994), and the other environmental studies form the environmental assessment (EA) basis of the LeBreton Flats Concept Plan, and of these OPA applications. The main conclusions and recommendations of these studies are presented here. More specifically, this section provides an assessment of environmental constraints affecting the site development, as well as impacts of the proposed land uses and built form on the natural, social and economic environment. Matters of both federal and municipal interest are addressed. Mitigation measures and follow-up procedures are presented when appropriate. For more specific and detailed information on different environmental matters, the reports listed in Annex 1 can be consulted directly.

NCC and federal requirements for environmental assessments have been fulfilled by the completion of the IEE and the Addendum reports for this phase of the planning process. Further environmental assessments will be required as the planning process progresses, and as implementation takes place. Federal, provincial and municipal EA processes will apply in the future, depending on the proposal and the authority involved. In any case, duplication of processes will be avoided whenever possible.

The City of Ottawa Municipal Environmental Evaluation Process (MEEP) applies to all projects that require City approval. In the present case however, MEEP will not duplicate the procedures applied through the federal environmental assessment process, provided that matters of municipal interest are addressed.

The City of Ottawa Environmental Management Branch provided comments on the IEE and Addendum reports in 1993. In particular, considerations for the Greenway System, urban forest, wildlife habitat, energy conservation, air quality/pollution, water quality, unstable slopes and contamination were identified by the City. These comments and concerns are addressed in this report.

No provincial EA requirements apply at this stage of the planning process. Provincial EAs will be required at later stages for the implementation of municipal infrastructure, roads and Transitway projects.

8.2 Methodology

The methodology used to incorporate environmental considerations into the LeBreton Flats planning process and to assess environmental impacts of the Plan comprised the following:

- A major biophysical and socio-economic inventory of the Core Area West area was completed in 1990 (B.B. L. 1990). The Core Area West planning area comprised three sectors: LeBreton Flats; the Islands (Victoria, Chaudière, Amelia); and Brewery Creek in Hull. Additional baseline studies and inventory updates were carried out in 1996 for the terrestrial ecology of the site (Ecological Services for Planning Ltd. 1996), and for the aquatic biology of the open aqueduct and tailrace (Jacques Whitford Ltd., 1996). Updates on the adequacy of social and community facilities in the area are discussed in Section 7. A number of site characterization and remediation studies have also been undertaken on the site since 1988; including those by Intera (1988), and Raven Beck Environmental (1991, 1992, and 1994). These studies and other technical studies such as site servicing (Ainley Graham and Associates 1991, 1993 and, 1996), traffic impact (Delcan 1992, 1993 and, 1997), and noise studies (Rowan, Williams, Davies & Irwin Inc., 1993) form the environmental information base of the environmental impact assessments of the LeBreton Flats Plan.

- The IEE process was completed in three main phases: evaluation and comparison of the five alternative concepts, evaluation of the preferred concept, and evaluation of the refined preferred concept. The first two main phases are documented in the 1991 BBL report, whereas the evaluation of the refined concept is presented in the Addendum to the IEE (NCC, 1994).

- The environmental assessment played a key role in the selection and the refinement of the LeBreton Flats preferred concept. The initial phase of the IEE consisted of an evaluation and comparative ranking of the five concepts. The evaluation of the five alternative design concepts compared a number of

biophysical and socio-economic components against the various components of the concepts. The concepts were also evaluated based on their compatibility with the policy orientations of the three level of governments having interest in the site. The biophysical and socio-economic components were grouped under the following headings : atmosphere, water, soils, vegetation/wildlife, ambiance, community character, urban conditions, regulatory context, and historic resources. As for the design concept components, they were grouped under five headings : urban land use, green spaces, circulation, municipal infrastructure, and waterway development. Policy orientations were grouped under the following categories: green spaces /waterway edges, visual qualities, historic resources, environmental constraints, and transportation network. An ordinal ranking method - the Holmes Method - was used for comparison and ranking of the five concepts.

- Environmental impacts were evaluated according to a number of factors such as the nature of impacts, the magnitude, the geographic extent, the probability of occurrence, the duration, etc. The significance of environmental impacts was determined based on the importance or sensitivity of the environmental component to be affected and on the severity of the anticipated impacts. Under EARP, if it is determined that the adverse environmental effects are insignificant, or mitigable with known technologies, the project may proceed. On the other hand, if it is determined that there are likely significant adverse environmental effects, the project may either be abandoned, modified or recommended for a Panel Review. Following the determination of impacts, a decision was made under the EARP that the project could proceed subject to the future completion of a number of studies.

- Following the selection of the preferred concept - An Agora for the Capital - and working in conjunction with the urban design and other technical consultants, BBL undertook an evaluation of potential environmental impacts of the proposed Concept Plan which evolved from the preferred concept.

- Mitigation measures, development guidelines and environmental management strategies were identified to prevent, reduce or eliminate negative impacts, and to ensure the introduction of initiatives to enhance the environmental quality of the development A monitoring and follow-up program was established to identify the elements which required further action and the likely agency responsible for implementing these measures.

- A major component of the planning process for LeBreton Flats has been a comprehensive public participation program utilizing a variety of techniques to present the project to the general public as well as specific interest groups, and to solicit their opinions and preferences for development of the area. As part of the IEE process, a series of public consultations were undertaken

whose primary objectives were to provide the public with pertinent information about the different stages of the evaluation process, and to explore community values regarding the environmental issues and concerns of LeBreton Flats. Public consultation exercises were held in May, September, October and December 1989, March and June 1990, May 1991, and May 1992 for the elaboration of the Concept Plan.

- Further modifications to the proposed Concept Plan were made. Refinements to the plan included changes to land use distribution, development phasing, the internal street pattern and the Transitway, eliminating at the same time a number of potential sources of negative impacts. To evaluate the effects of the proposed changes, an Addendum to the IEE using a similar methodology was carried out and completed in 1994 (NCC, 1994). A number of major and minor impacts were identified, mostly related to the Transitway, soil and groundwater contamination, stormwater management and site servicing capacity. In all cases of major impacts, mitigation measures or the need for additional studies were identified.

The following sections present the major components of environmental analysis, mitigation measures, recommendation for further studies, and follow-up requirements.

8.3 Anticipated Impacts and Recommended Mitigation Measures

The LeBreton Flats Concept Plan and the corresponding Official Plan Amendments will have impacts - both positive and negative - on various components of the biophysical and human environments, on-site and on adjacent lands.

Environmental effects and environmental issues have been grouped in the following categories:

- Ecological Functions;
- Land Use;
- Site Servicing;
- Transportation and Circulation;
- Socio-economic Environment;
- Soil and Groundwater Contamination; and
- Heritage and Archaeology.

8.3.1 Ecological Functions

The LeBreton Flats area has been heavily disturbed by past industrial activities and landfilling operations. The site is currently traversed by major roads, and is

located next to the urban core. The existing vegetation is largely represented by open fields which provided low ecological diversity and little wildlife habitat potential. As a result, the site is considered degraded, and supports only common generalist species of plants and wildlife. The flora is dominated by non-native plant species.

Due to its central urban location and its disturbed state, the site offers very limited potential to support significant species, even if natural succession is allowed to proceed.

The proposed Concept Plan and corresponding designations propose the protection and enhancement of almost forty percent of the site for open spaces, parks and natural areas. The open space system provides linkages and public access to the Ottawa River waterfront, to the aqueduct system and to other open space areas.

The wooded areas adjacent to the pumping station and along the tailrace represent the most noteworthy natural environment habitat of the site, even though it is of low ecological value. This wooded area will be preserved as part of the open space designation recommended for the entire aqueduct system. Retention of the wooded area will ensure slope stability in and along the tailrace.

West of the forebay to the pumping station, some existing vegetation will be lost to provide for recreational pathways, and to reclaim the heritage character of the open aqueduct. It has not been determined yet where and how much vegetation will be displaced by the heritage rehabilitation of the aqueduct and heritage bridges. However, a landscaping component is planned as part of the aqueduct improvement project which will mitigate the loss of some existing vegetation (see Sections 7.3.1 and 7.12.5).

The relocation of the Ottawa River Parkway along the LeBreton Boulevard alignment will result in the loss of the large weeping willow trees located along the southwest bank of the inlet to the aqueduct. The loss of these willows is inevitable. This component of the project is planned for the long term, therefore planting young willow trees now somewhere in this vicinity to offset the eventual loss of the existing ones is recommended.

The preservation and designation of an open space corridor along the aqueduct and tailrace will ensure that the natural environment functions are maintained while allowing for the restoration of the heritage character of the aqueduct, and providing opportunities for passive recreational activities. This concept offers a sensible compromise between the protection of the natural environment, heritage resource rehabilitation, and community needs and values.

The protection of a corridor along the Ottawa River waterfront will in the long run result in the enhancement of wildlife habitats along the river compared to the present conditions. This is viewed as a positive impact. The planning of the recreational pathway should not however impact upon the wildlife habitats along the shoreline.

Overall, the proposed Concept Plan will result in the elimination of some existing vegetation and the associated habitat loss and reduction in the ecological functions of the site. The most important wooded area of the site, the tailrace area, will however be preserved and integrated into the open space network. Landscaping and habitat restoration along the Ottawa River could largely compensate for the loss of existing vegetation and habitats elsewhere on the site.

It should be noted that, for the foreseeable future, the former landfill site just east of the CPR line will remain in its current state. Existing trees and other vegetation will be allowed to naturally evolve on site. Another factor which will augment the amount of urban forest within LeBreton Flats will be tree plantings in future parks and street rights-of-way.

The anticipated impacts of the proposed Concept Plan on the existing LeBreton Flats ecological functions are considered minor, with the possibility of achieving positive impacts in the long run by augmenting the urban forest throughout the site and restoring wildlife habitats particularly along the Ottawa River.

8.3.2 Land Use

The LeBreton Flats Concept Plan proposes a mixed use, highly accessible community which is supported by an expansive open space network system. The following provides an evaluation of the proposed land use components.

8.3.2.1 Open Spaces

Approximately 40% of the site is proposed to be designated as open space. The open space network will provide numerous opportunities to support national, regional, and local needs by creating a capital and local municipal park, by preserving and enhancing the recreational pathway network and its connections with the regional system, by maintaining a wide band of publicly accessible open space fronting the Ottawa River, by preserving the heritage resources of the site, and by preserving the large wooded area along the tailrace. This open space system will largely satisfy the needs of the new community, while minimizing impacts on the surrounding community. Most importantly, the existing open space functions on site will be preserved and enhanced.

The aqueduct corridor provides a unique and valuable heritage resource, wildlife habitats and corridor, and a recreational linkage. The reinstatement of the heritage character of the open aqueduct will result simultaneously in its increased interpretative value and in the loss of some wildlife habitat. A balanced approach to the treatment of the aqueduct corridor will be required as the concept is implemented to respect, as much as possible, the different roles of this resource.

A recreational linkage and pathway will be created along the Ottawa River. The location of this pathway will be set back from the shoreline of the river.

8.3.2.2 Residential

The Concept Plan proposes a variety of residential, commercial and institutional land uses of medium to high density, distributed mostly between the Transitway and LeBreton Boulevard. Approximately 2 400 residential units are proposed. The preferred concept was modified to allow for more street-oriented housing by adding more north-south local streets to the concept. Even though densities proposed for residential development are generally higher than in the neighbourhood immediately to the south, street-orientation of this development will reduce the impact of this density and will emphasize a more human scale in the built form. Compact development will also provide for more efficient use of urban land and supporting municipal services. The increased number of north-south streets in the residential areas will also allow for views opening between the blocks and will reduce the effect of a "wall" of development crossing the Flats.

For residential blocks located along the Transitway, mitigation measures or special design measures will likely be required to address potential noise and air pollution impacts along the Transitway. Further studies will be required before the implementation phase to assess this issue; the RMOC will be conducting some studies in this area to support the Transitway realignment design. Mitigation measures may take the form of design measures applied to the Transitway or to the building structures themselves to reduce these impacts on residential development (see Section 8.3.4.2).

8.3.2.3 Mixed Use Development

Mixed use development is proposed mostly along the major transportation corridors such as the Transitway, Scott Street and Booth Street. A mixed block is also proposed along the northern side of the aqueduct corridor.

Mixed used development will facilitate the integration of work and home opportunities and could result in reduced automobile traffic and parking

requirements, in more continuous (i.e. longer day) use of amenities and services such as public transit, open space, retail, etc., and increased safety during evening hours.

As mentioned above, the issue of noise and air pollution will require further studies for the residential components located along the major transportation corridors. A number of mitigation measures and special design measures applied to the building or the roads are available to address these issues.

8.3.2.4 Cultural - Institutional

National cultural-institutional uses are proposed for a large block between Oregon Street and the riverfront corridor. A small block of the same designation is also proposed at the north-east corner of Fleet and Lett streets. No specific impacts of this land use or conflicts with surrounding areas have been identified. The removal of a segment of the Ottawa River Parkway to free up waterfront lands for these and open space uses is viewed as a positive impact.

8.3.3 Site Servicing

A number of site servicing studies were undertaken to identify the servicing requirements for the LeBreton site (Ainley Graham and Associates, 1991, 1996). These studies indicate, as a general rule, that municipal services can be provided to the new LeBreton community by connecting new lines to the existing sewer and water distribution systems. Stormwater management will be more complex to resolve due to the wider range of issues that need to be addressed. More details on site servicing matters is provided in Section 7.10. The implementation of these municipal services will be subject to the provincial environmental assessment process. Federal and municipal EA requirements will likely need to be fulfilled as well.

8.3.3.1 Sanitary Sewers and Potable Water

LeBreton Flats will be serviced by two regional trunk sewers: the Central Interceptor, and the West Nepean Collector Sewer. Although the Central Interceptor currently operates at or above capacity, a number of diversions and gate modifications are proposed in the draft 1997 RMOC Water & Wastewater Master Plan that will reduce the flow in contributing sewers, effectively creating sufficient capacity in the Interceptor for flows originating from the new LeBreton Flats community. In addition, the future LeBreton Flats community will not contribute to the combined sewer overflows into the tailrace.

Installation of a new sanitary sewer collection system will result in decommissioning a number of existing active and inactive sewer lines. In

particular, inactive sewer lines may contain contaminated substances from past industrial activities. A proper assessment of the abandoned sewer lines will be integral to the design and construction of the new sewer system.

As for potable water, the development of LeBreton Flats will not impact significantly on the water distribution system. The site benefits from its proximity to both the Lemieux Island Filtration Plant and the Fleet Street Pumping Station which will ensure steady water pressure to the site.

8.3.3.2 Stormwater Management

In 1991, Novatech Engineering Consultants completed a preliminary stormwater management study for LeBreton Flats (see Annex 1 for reference). This study explored a number of drainage scenarios, and presented a list of issues identified by the approval and regulatory agencies who were consulted on this matter.

Some of the major and minor system options identified in the Novatech study included: outletting significant flows of stormwater directly to the Ottawa River and to the open aqueduct and tailrace; location of retention ponds; and continued use of the Transitway drainage system (outletting to the aqueduct). A large passive detention facility was proposed for the Common just west of Booth Street and a detention/water quality treatment system was proposed just downstream of the pumping station just west of the tailrace. To the west, detention storage was proposed on the south side of the inlet to the aqueduct. Water quality storage was suggested for the open aqueduct or at the detention storage locations.

In light of the issues identified by the regulatory and approval agencies consulted, it was clear that more work in the stormwater management area was required. For example, the following issues were identified:

- the need for aquatic habitat assessment;
- impact assessment and incorporation of mitigative measures;
- impact on aquatic habitats and on the operation of the aqueduct;
- impact on aesthetic value of the open aqueduct; and
- conflicts between proposed detention in parks and the park uses.

In the fall of 1996, procedures to undertake a detailed stormwater management feasibility study were initiated to follow up on the above issues and in support of Official Plan Amendments for the LeBreton Flats site. Aquatic habitat assessment and sediment quality analysis for the open aqueduct and the tailrace were also carried out. The results of these studies indicate the presence of contaminated sediments in the open aqueduct and tailrace, and the possibility of a Type 1 fish habitat in the tailrace. Due to the concerns related to the

resuspension of contaminants at the base of the aqueduct (by increased stormwater flows) and the potential Type 1 fish habitat in the tailrace, the 1991 stormwater concept is being reassessed. Major tasks of this stormwater feasibility study include further assessment of sediment and water quality in the open aqueduct, a spring spawning inventory in the tailrace to confirm or refute the Type 1 fish habitat, flow monitoring during high and low flow events, and determination of acceptable water quality and quantity parameters for future stormwater effluent. (Terms of reference for this study appear as Annex 7 to this report.) Results of this work will be available in the summer of 1997. At this time, the 1991 Novatech concept will either be confirmed as environmentally viable or an alternative solution will be identified and submitted to the regulatory agencies for their approval. The additional work will also determine if the issue of contamination in the aqueduct will need to be addressed through remediation. This stormwater management study is designed to fulfil Phases 1 and 2 of the Class EA for Municipal Water and Wastewater projects, and involves public consultation and assessment of alternatives. Environmental and social impacts will be evaluated as part of this process, as well as during future design phases.

It is considered that an acceptable stormwater management scheme is achievable for the LeBreton Flat Concept Plan through the implementation of integrated designs, Best Management Practices, and mitigative measures.

8.3.4 Transportation and Circulation

The movement of people and vehicles in and around the new LeBreton Flats community will be facilitated by a network of open spaces and roads, and by the Transitway system. Transportation and circulation issues are discussed here under three headings: pedestrian and cycle movement, public transit, and roads.

8.3.4.1 Pedestrian and Cycle Movement

The LeBreton Flats plan emphasizes pedestrian-friendly design. As well, recreational cyclists and bicycle commuters will benefit from the pathway network and from the inclusion of cycle lanes on regional roads. Several key streets in the LeBreton Flats network have been equipped with commuter cycling lanes or widened curb lanes. These are Booth Street, LeBreton Boulevard, Scott-Wellington-Albert Street and Preston Street.

Pedestrian circulation will be accommodated through the open space network and through street design elements such as wide sidewalks. Street trees and landscaping will enhance the quality of pedestrian environment.

The plan also recognizes the heritage value of the existing bridges which cross the aqueduct. The Lloyd-Grand Trunk-Lett and Broad Street heritage bridges would be retained for pedestrian-cycle connections across the aqueduct. It is intended that the Booth and Preston Street heritage bridges also be protected, "under" the new bridges spanning the aqueduct, to maintain safe and uninterrupted pedestrian and cycle access across the aqueduct at these points. The connection at Preston Street is critical to access the municipal park, and the Booth Street connection will be very advantageous to transit station access.

Overall, future cycling and pedestrian movement on the site will be improved with the implementation of a more organized and functional network.

8.3.4.2 Public Transit

The Transitway crossing of LeBreton Flats is a major piece of site infrastructure. The Plan proposes a new alignment for the Transitway, to the south of its current alignment, approximately midway between Scott Street and the open aqueduct.

Since the first phase of building development is proposed to occur north of the aqueduct, buildings in the zone between Scott Street and the aqueduct will not be constructed for a period of years. Initially, the realigned Transitway and new LeBreton Flats transit station will be the only physical interventions in the zone between Scott Street and the aqueduct (building development will be occurring north of the aqueduct). During construction of the new alignment of the Transitway and the LeBreton Station/grade separation of Booth Street, the existing Transitway alignment will serve as a detour. Initially, following its construction, the Transitway and station will be at grade and visible in all directions. Some form of screening may be desirable.

When buildings are constructed in this zone between Scott Street and the aqueduct, retaining walls on the north and south sides of the Transitway will be erected to create a new grade or ground-level for buildings north and south of the Transitway alignment. This will, in effect, place the Transitway in a cut. A local street will be located running east-west along the northern side of the Transitway, both east and west of Preston Street, connecting south to Scott Street. Small bridges will connect development blocks north and south of the Transitway at four locations, two east and two west of Preston Street. New grades for the buildings (top of the Transitway retaining walls) will be created by a combination of underground parking structures and fill.

The OC Transpo bus lay-up or staging area will remain generally in its current location. Vegetative buffering is proposed to reduce visual and other impacts associated with this facility on the residential development immediately to the east.

A noise design review report was produced by RWDI (see Annex 1 for reference), wherein vehicular noise impacts associated with the recommended Transitway alignments were investigated. Criteria for traffic noise are outlined in the Ontario Ministry of Environment (MOEE) Model Municipal Noise Control By-law, Publication NCP-131, "Guidelines for Noise Control in Land Use Planning". In keeping with the MOEE protocol for noise assessments, the year 2012 traffic volumes were used to project the noise levels which would prevail in the area 10 years after construction of the Transitway. Noise levels associated with the surrounding roads (Scott, Booth, Preston, O'Keefe) were modelled as well as those of the Transitway. The study concludes that generally the noise levels exceed the criteria, especially at sampling locations south of the Transitway. Daytime noise levels adjacent to Scott Street are predicted to be above the daytime criterion. On the other hand, daytime noise levels for receptors located north of the aqueduct, far from Scott Street, would be quite low (below 50 dBA).

MOEE guidelines specify mitigation requirements when the noise impacts exceed the established criteria. Mitigation measures, when implemented, reduce noise to acceptable levels. A final noise assessment study with specific mitigation measures required to permit building development on lands adjacent to the Transitway and to regional arterials (detailing the required construction material, air conditioning and window specifications, other physical measures, etc.) will be carried out to support MOEE approval for such development. These studies will be the responsibility of the future developers, prior to development taking place.

In order to support approvals from the NCC for the Transitway realignment/station construction recommended in the concept and for the conveyances of land to the RMOC for this project, environmental impact assessment studies will be required. These will be the responsibility of the RMOC and OC Transpo, and will not deal with the concerns or issues respecting adjacent building development, as the transit project will likely precede building development in the sector for a period of several years.

8.3.4.3 Roads

In November 1996, Delcan was contracted to update their previous LeBreton/Bayview transportation studies of 1992 and 1993 (see Annex 1 for reference). Modified development statistics were incorporated along with new assumptions regarding level of service, modal split, etc. as proposed in the RMOC's draft Transportation Master Plan. Findings of this study (completed in 1997) are discussed in Section 7.9; in addition, the report is attached to this document and provides complete details on traffic impacts of site redevelopment. The 1992 and 1993 Delcan studies can also be consulted.

The major roads affected by traffic growth in the area are Scott Street and Booth Street. The right-of-way width proposed for Scott Street will enable a road widening should this be deemed necessary by the RMOC. The Booth Street impacts are not considered to be major at this time.

All future regional road construction will be subject to provincial EA requirements at the time of their inception. Federal and municipal EA requirements may also need to be satisfied. Noise impact studies will be required in particular in relation to the proposed residential components along the regional roads (refer also to Section 8.3.4.2).

8.3.5 Socio-economic Environment

General demographic information for the community south of LeBreton Flats is provided in Section 2.4.

The residential neighbourhood directly to the south of the site will be the most affected by the future development of LeBreton Flats. As indicated in Section 2.4, the housing in the "LeBreton Phase I" neighbourhood south of Scott Street, a 1970s CMHC housing demonstration project, is represented by medium density housing. This project was built in such a way that it turns inward to internal block common spaces (parking, parks). For example, the houses along Scott Street are oriented away from the street or are behind a wall.

On LeBreton Flats, there is currently little provision for recreational activities due to the physical characteristics of the site and the limited recreational infrastructure available. The recreational pathway system and campground are the only two formal activities on the site. A soccer field west side of Broad Street, was leased to the City of Ottawa and was actively used until 1995. The pathway system provides continuous access across the site and access to other parts of the city. It is well utilized by both area residents and non-residents. Walking, cross-country skiing and fishing along the river are activities that also occur on the site.

The concept for LeBreton Flats proposes a mixed use development and the re-establishment of a viable urban community with a strong residential base, large open spaces, linkages etc. The proposed LeBreton Flats community will provide a number of socio-economic benefits to adjacent communities and to the region. The proposed plan will:

- provide housing for people of various ages, with a range of income levels, special needs and tenure preferences;
- ensure innovative multi-functional spaces including cultural, institutional, residential, commercial and open space uses;
- expand the range of tourist attractions in the area;

- create a network of public walkways and parks that focus on the river and the aqueduct areas;
- minimize vehicular and pedestrian movement impacts on adjacent areas;
- ensure that development has a human scale and supports year-round, day/evening activity.

The relationship of the proposed LeBreton Flats neighbourhood to the adjacent community was a consideration in the design and layout of the land uses, street pattern, pedestrian and cycling pathways, etc. It was believed that the connectivity of the LeBreton Flats to the adjacent character areas, including the Parliamentary Precinct, the Central Business District, the Islands, and the Dalhousie and Mechanicsville communities, was important. The new LeBreton Flats community will develop its own identity, and will not infringe on the liveability and identity of neighbouring communities.

It must be recognized that the busy nature of Scott Street and the form of development on its south side limits opportunities to "link" the new and the existing communities. A widened right-of-way for Scott Street is part of the proposed Regional OPA, and will provide opportunities to improve the environment of the arterial, particularly on the south side.

The street grid pattern will be similar to the pattern of the neighbouring communities. The development will aim to integrate open space, bicycle and pedestrian movement within the LeBreton Flats community and with adjacent communities.

Height controls, placement of buildings, protection of views, sensitivity to building profiles and context, and location of specific uses will be addressed through zoning. One key view of the Parliamentary Precinct located on the Ottawa River Parkway bridge over the CPR railway line is protected by City of Ottawa Official Plan policy.

Regarding the effect of the new LeBreton Flats community on existing social and community facilities, key services are provided for in the surrounding area and can accommodate new residents and employees of the new LeBreton community. This is true for services such as fire, police, health care and schools. It appears that the new community will require the provision of certain facilities and services on LeBreton Flats, including child care, community meeting space and a municipal park.

The retail and commercial component of the new community is not likely to compete directly with commercial businesses in the core area due to their smaller scale and neighbourhood focus.

Implementation of the Concept Plan will mean a number of positive benefits to businesses and municipal government: taxes, permit and application fees, direct (construction, supply) and indirect jobs during construction; business for site remediation companies; and permanent jobs in the new community.

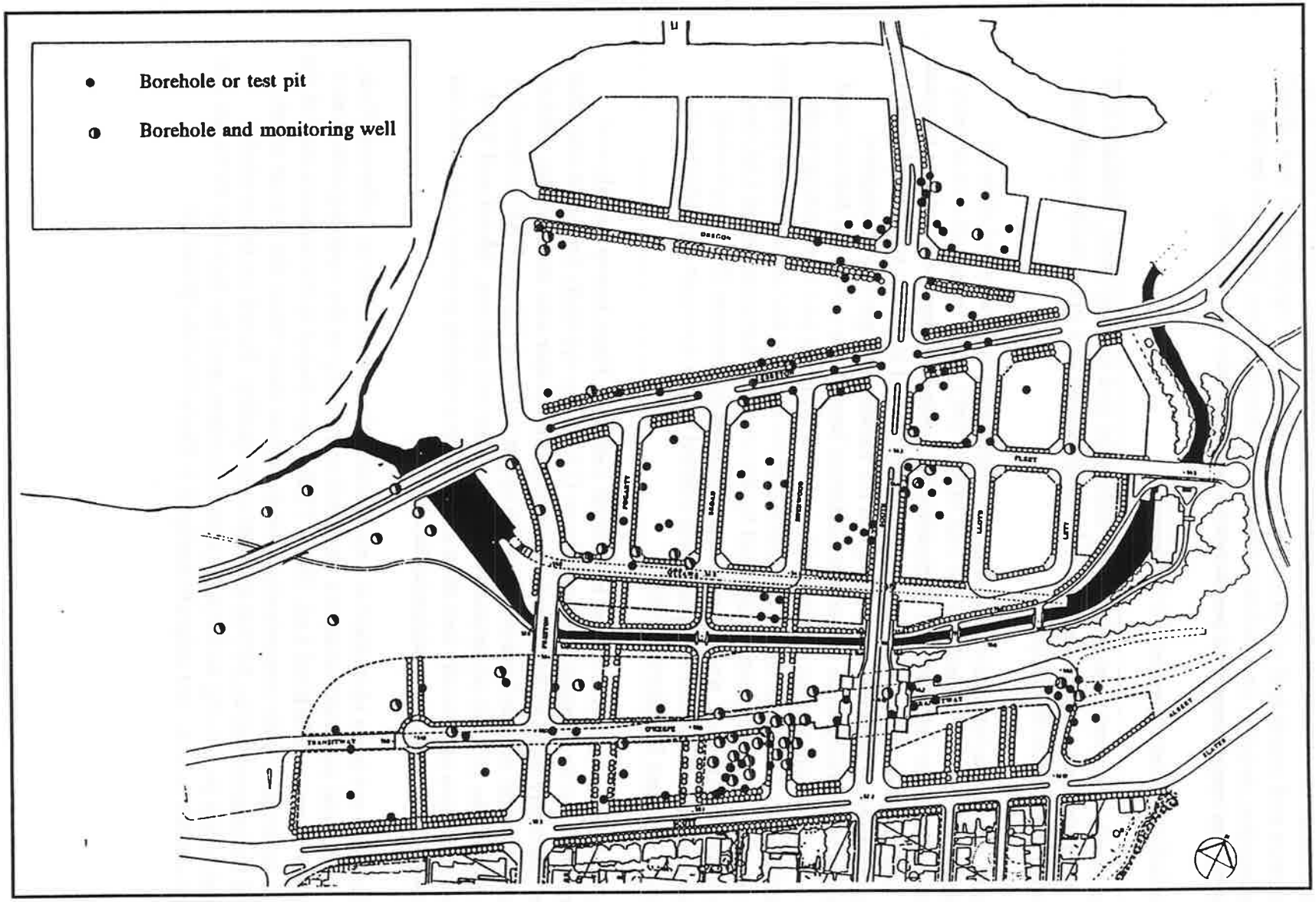
8.3.6 Soil and Groundwater Contamination

Since much of LeBreton was formerly industrial and railway land, remnant soil and groundwater contamination has been identified as a potentially significant constraint to future development.

Phase I site characterization studies were completed at 19 selected sites at LeBreton between November 1990 and March 1993. One hundred and seventy-nine boreholes or test pits and 52 monitoring wells have been completed to assess soil and groundwater conditions. Two hundred and eighteen soil samples and 55 groundwater samples were analyzed for various inorganic and organic contaminants likely to be present at LeBreton based on a review of former land use. Figure 16 shows the location of boreholes, test pits and monitoring wells completed to date. Site characterization results and the site remediation program are summarized in reports completed by Raven Beck Environmental Ltd. (see references in Annex 1, and executive summaries in Annexes 2 to 5 inclusive). More recently, sediment sampling was carried out in the open aqueduct and tailrace (Jacques Whitford, 1996).

The major contaminants found to date on LeBreton Flats, heavy metals and heavy polycyclic aromatic hydrocarbons (PAH), are typically found at sites that were formerly used as junk yards, foundries and boiler and steel works. Metal contamination is found generally in the upper 2.0 m of fill and PAH is found in pockets of the fill and occasionally deeper in the soil column. Metal and PAH concentrations are usually less than 3 times the available provincial and federal remediation criteria for residential land use.

PCBs have not been identified in any characterization studies on LeBreton Flats, except for the sediment analyses undertaken recently in the open aqueduct and tailrace (Jacques Whitford Ltd, 1996). PCBs were found in the western half of the open aqueduct, with concentration levels within three times the lowest effect level recommended by MOEE for sediment quality. Based on the available information pertaining to the site's contamination, and the fact that PCBs are not very soluble and do not migrate easily, it is likely that the presence



Source: "Raven Beck Environmental"

LeBreton Flats
Les plaines LeBreton

Location of Boreholes, Test Pits & Monitoring Wells
Forages, sondages et puits de surveillance

16 Fig.

of PCBs in the aqueduct reflects a localized case only. Further analysis of the presence of PCBs and other contaminants in the aqueduct will be undertaken as part of the stormwater management study to identify the source, the risks, and the remedial measures required.

Groundwater quality at LeBreton Flats is impaired primarily as a result of former snow dumping operations and activities at the former paint and fuel production/supply locations. Snow dumping operations at three sites have resulted in localized elevated concentrations of chloride in groundwater. The operation of the Ottawa Paint Works has resulted in a groundwater contaminant plume caused by paint solvents that is characterized by elevated concentrations of higher substituted benzenes. Minor pockets of hydrocarbon contamination of groundwater are also expected at selected sites in LeBreton Flats based on former storage and handling of petroleum-based solvents and fuels. Most of the groundwater at LeBreton Flats discharges to the aqueducts upstream and downstream of the Fleet Street Pumping Station, and eventually to the Ottawa River via the tailrace. Sampling of water in the aqueduct was completed to assess the impact of groundwater discharge into the aqueduct and results indicated that groundwater discharge does not have a detectable impact on water quality within the aqueducts (Raven Beck Environmental, 1994).

Between 1992 and 1994, an interagency steering committee, the LeBreton Site Remediation Steering Committee, was formed to guide site characterization studies and the development of remediation plans for the LeBreton area. This Committee included representatives of the National Capital Commission and the principal regulatory agencies: Environment Canada, Health and Welfare Canada, and the Ontario Ministry of the Environment & Energy. It culminated with the completion of the Preliminary Remediation Feasibility Study by Raven Beck Environmental Ltd. in 1994.

Due to the large size of LeBreton Flats and the extent of the contamination, cleanup and management of on-site contaminants will be an integral component of the development of LeBreton Flats. With respect to the development of site specific objectives for the remediation of the LeBreton Flat site, a risk reduction management approach is recommended This will be tailored to the Concept Plan ultimately approved and its implementation. The remedial actions must be protective of the environment and of human health. For environmental risk assessment, Environment Canada's draft guidelines for setting site-specific objectives "A Framework For Ecological Risk Assessment: General Guidelines", (Environment Canada, 1996) will be used.

For human health risk assessment, the overriding principle is to use standards for remediation that are sufficiently high to ensure protection of human health. The risk associated with contaminants is a function of hazard and exposure.

Thus, assessment of risk from a contaminated site involves quantification of potential hazards and an assessment of potential exposure "pathways" for contaminants to reach a "receptor". Simplified models will be developed, risk calculation will use generic equations, and overall risk to humans will be ascertained. Pathway-specific calculations will require data on a number of variables, such as leach rates or contaminant concentrations found in different components of the LeBreton Flats environment, ingestion or intake rates (Acceptable Daily Intake and Estimated Daily Intake levels), exposure frequency and exposure duration. Detailed risk-based exposure assessment remains to be conducted when precise land use designations (zoning) are confirmed.

Preliminary risk assessment conducted for LeBreton to date strongly suggests that, since the pockets of heavy metal and PAH contamination are at depth and are not exposed at the surface, the existing contamination poses a negligible risk to human health. Since LeBreton groundwater and surface water are not used for drinking purposes, issues of contaminants in water also pose no direct human health risk.

As already indicated in the IEE reports, there is potential for important environmental impacts related to the presence of contaminated soils and groundwater throughout LeBreton Flats, particularly during the construction period, but over the long term as well. The Preliminary Remediation Feasibility Study (Raven Beck Environmental Ltd., 1994) indicates that remediation of LeBreton is technically feasible through the use of on-site management, segregation, processing, reuse and off-site disposal or treatment techniques. For groundwater remediation, it is recommended that source removal be dealt with on a site-by-site basis. This can be achieved through the use of various methods. For example, clean-up of the former Ottawa Paint Works using bioremediation techniques is scheduled for 1997-98. More detailed studies will be required at other selected sites to confirm cleanup requirements and costs.

The designation of the Nepean Bay landfill site as a largely undevelopable open space reserve poses no risk of environmental impact at the present time. However, the proposed municipal park and related recreational facilities on the east edge of the former landfill would require that at least the top one metre of the soil profile be clean of contaminated material.

8.3.7 Heritage and Archaeology

LeBreton Flats features a number of historical elements or resources which will be respected through the implementation of the proposed Concept Plan. The Fleet Street Pumping Station, aqueduct and bridges were designated "heritage" in 1982 and 1994 under the Ontario Heritage Act. The aqueduct and bridges will

be rehabilitated and maintained for future generations, and will be integrated into future LeBreton development (see Section 7).

Though the Thompson-Perkins Mill (now the Mill Restaurant) has no official heritage designation, its use will be protected through policies of approved OPAs.

The preservation and rehabilitation of existing heritage structures is considered a positive impact. LeBreton Flats also has the potential to contain structural vestiges from past settlement and industrial activities. During site development, should works reveal archaeological artifacts, such site development will be interrupted and archaeological specialists will be notified for further assessment and direction regarding the treatment of such artifacts.

The proximity of LeBreton Flats to the Ottawa River and Chaudiere Falls initially suggests a high potential for pre-contact archaeological resources. However, this potential is largely reduced due to the presence of only a thin original soil layer on top of bedrock; in addition, this thin layer has been severely disturbed during the last century as a result of industrial activities and filling operations.

8.4 Follow Up and Monitoring

The planning process for the redevelopment of LeBreton Flats is still at an early stage. A number of unknowns are still present and will not be resolved until more detailed proposals are presented and corresponding studies undertaken. It is therefore very important to identify the key issues now that require follow up, in order that they are dealt with at the appropriate time.

The following elements require further consideration:

- soil and groundwater contamination;
- stormwater management;
- Transitway design;
- design of residential projects along regional arterials and the Transitway;
- details of the landscaping component of improvements to the aqueduct; and
- design and implementation of new regional road construction.

The NCC will lead and ensure the completion of further soil and groundwater contamination studies and remediation plans throughout the entire planning process. Remediation will be based on Ontario MOEE and CCME guidelines for the land use designations approved for the subject lands. MEEP will be required as part of the development review process.

A stormwater management feasibility study is presently being led by the NCC, with input from provincial Ministries of Environment & Energy and Natural Resources, the Rideau Valley Conservation Authority, the Region and the City of Ottawa. This study and subsequent phases of the study will follow the procedures of the Provincial Class EA process for municipal water and wastewater projects, and will satisfy federal EA requirements.

Transitway design is the responsibility of the Region. However, the NCC requires the completion of environmental assessment studies addressing noise, air quality and stormwater impacts as part of the final design for the project. Federal land use, environmental assessment and design approvals are all required for this project.

The detailed design of residential projects along regional roads and the transitway will be private sector driven and will comply with provincial regulations in respect of noise and air quality impacts and acceptable means of their mitigation. The application of these measures will be part of future, project-specific planning approvals at the subdivision and site plan stages. The municipal environmental evaluation process will apply.

Landscaping plans which will be prepared as part of the Aqueduct Improvement Project will be submitted to the City of Ottawa for their review. This project will be carried out by the Region. Any requirements for environmental assessment will be complied with; this will be dependent upon the finalization of the design of the project, to be jointly developed by the NCC and the Region.

Construction of new regional roads will be subject to Provincial EA processes. If the involvement of the NCC and the City of Ottawa is required, the federal and municipal EA processes will be triggered as well. In addition, any specific considerations to be given to improved pedestrian environments within regional road allowances, etc. will be the decision of the Region.

8.5 Conclusions

The environmental assessment of the LeBreton Flats Concept Plan was completed through an Initial Environmental Evaluation in 1991, and an Addendum to the IEE in 1994. These assessments were supported by a number of environmental and technical studies documenting various components of the site and of the proposed Concept Plan. A number of major and minor impacts were identified. In all cases of major adverse impacts, either effective mitigation measures, or further relevant studies are recommended prior to project implementation. A follow up and monitoring program has also been outlined which will guide the implementation of identified mitigation measures, and the completion of the required additional studies. The overall environmental effect

of the proposed Concept Plan for the redevelopment of the LeBreton Flats is deemed to be acceptable and mitigable with known technology.

Further studies and additional information will be required for different components of the redevelopment of the site. Depending on the situation, future environmental assessments will be required at either the federal, provincial or municipal level.

The conveyances of NCC land to the Region for the transit project will require certain environmental assessment studies to support NCC land use, environmental assessment and design approvals. Provincial class EA procedures will apply for regional road and site servicing projects.

Further studies and plans required in respect of stormwater and servicing capacity will be dictated by the Region and will be specified in the Official Plan Amendment and subsequent planning approvals. Certain municipal infrastructure is subject to the provincial environmental assessment process. Federal and municipal EA requirements may also apply.

Continued work will be conducted on the soil and groundwater contamination issue. Requirements of both provincial and federal governments for remediation or decommissioning of sites will be strictly complied with, and will be the subject of further study.

9.0 REGIONAL OFFICIAL PLAN AMENDMENT

9.1 Introduction

In order to implement the Concept Plan, as described in Section 7, the Regional Official Plan must be amended to redesignate LeBreton Flats from "General Urban Area" and "Waterfront Open Space" to "Central Area" and "Waterfront Open Space". The attached Figure 17 outlines the areas to be designated in the Regional Official Plan. The following details the policy and map changes requested to the current Regional Official Plan. These changes reflect the Plan for LeBreton Flats as described in Section 7.

9.2 Purpose of the Amendment

The purpose of this amendment is to amend the Regional Official Plan to implement the LeBreton Flats Concept Plan. Schedule B, Urban Policy Plan of the Regional Official Plan, will be amended to designate the site as Central Area and Waterfront Open Space, as shown on Figure 17.

Schedule C2 - Urban Regional Roads Rights-of-Way Protection Policy Plan will be amended to designate certain roads as regional roads and to protect rights-of-way corridors for existing and future regional roads.

9.3 Details of the Regional Official Plan Amendment

9.3.1 Schedule Changes

1. Schedule B, Urban Policy Plan of the Regional Municipality of Ottawa-Carleton, will be amended to designate the majority of LeBreton Flats as "Central Area" and to delineate the lands to be designated "Waterfront Open Space", as shown on Figure 17.

2. Schedule C2, Urban Regional Roads Rights-of-Way Protection Policy Plan, will be amended to designate the following road rights-of-way:

    a) A 34.5 metre right-of-way for Booth Street between Albert Street and the open aqueduct (incorporating the Booth Street portion of the transit station); and a 33.5 metre right-of-way for Booth Street from the open aqueduct to the Ottawa River.
    b) A 26 metre right-of-way for Preston Street from Scott-Wellington Street to LeBreton Boulevard.
    c) A 37.5 metre right-of-way for LeBreton Boulevard between Preston Street and the Wellington Street-Portage Bridge intersection.

d) A 40 metre right-of-way for Scott-Wellington-Albert Streets between Champagne Street and Empress Street.

9.3.2 Objectives and Policies

The following objectives and policies should govern the future development of LeBreton Flats.

Objectives

a) create an opportunity to increase the Capital presence in the Central Area.
b) provide an opportunity for additional mixed use, residential and commercial development in the Central Area, with a diverse range of uses and activities.
c) create an opportunity to provide public access to the aqueduct.
d) enhance the unique attributes of the waterworks facilities, including the aqueduct, bridges and tailrace.
e) preserve existing heritage structures along the water's edge.

Policies

a) support higher density development and employment in close proximity to the transit station.
b) encourage the use of LeBreton Common for the staging of regional festivals and other special events.
c) ensure the compatibility of regional road design/maintenance with the adjacent land uses.
d) encourage development which facilitates easy access to and from the transit station.
e) support the relocation of the Transitway to improve its operational efficiency and that of the regional road network, and provide a safe, accessible transit station at Booth Street.
f) promote the incorporation of wide sidewalks along regional roads.
g) preserve and protect heritage bridges when undertaking road and transit improvements.
h) ensure that appropriate design and construction methods and treatments are incorporated into development located in close proximity to regional roads and the Transitway.
i) support the relocation of the Ottawa River Parkway.
j) support the provision of cycle lanes on regional roads.
k) preserve and protect heritage public works when undertaking improvements to the site or to any infrastructure.

l) protect and enhance significant natural areas along the forebay and the tailrace.
m) protect resources that depict the natural and cultural heritage values of the waterways.
n) ensure that prior to final subdivision approval, a plan of remediation has been developed in keeping with the principles and procedures contained in the MOEE Guidelines for Use at Contaminated Sites.
o) ensure that prior to final subdivision approval, a site management plan for stormwater has been completed.

10.0 CITY OF OTTAWA OFFICIAL PLAN AMENDMENT

10.1 Introduction

To permit the Concept Plan, as described in Section 7, to proceed to the next stage of development (which would include subdividing and rezoning the site), the City of Ottawa Official Plan must be amended to change the designation of LeBreton Flats from "Central Area" to "Central Area" and "Greenway" and to introduce a Secondary Policy Plan which will guide the future development of LeBreton Flats. The current Greenway designation only applies to the waterfront lands. This Amendment will incorporate all open spaces into the Greenway designations. It is not the intention of the NCC to proceed to the subdivision and zoning stages for LeBreton Flats. Rather, it will be the responsibility of future land owners to proceed through these phases of municipal planning and development processes. The attached Figure 18 outlines the requested designation changes to the Official Plan. These changes reflect the Plan for LeBreton Flats as described in Section 7.

10.2 Purpose of the Amendment

The purpose of this amendment is to redesignate the LeBreton Flats site as Central Area and Greenway and to establish a Secondary Policy Plan to guide future development of LeBreton Flats. The Secondary Policy Plan provides a Vision and General Objectives as well as policies for: Policies for Cultural/Institutional; Greenway; Mixed Use; Residential; Transportation; Environment; and, Infrastructure for the new LeBreton Flats community.

10.3 Details of the City of Ottawa Official Plan Amendment

10.3.1 Schedule Changes

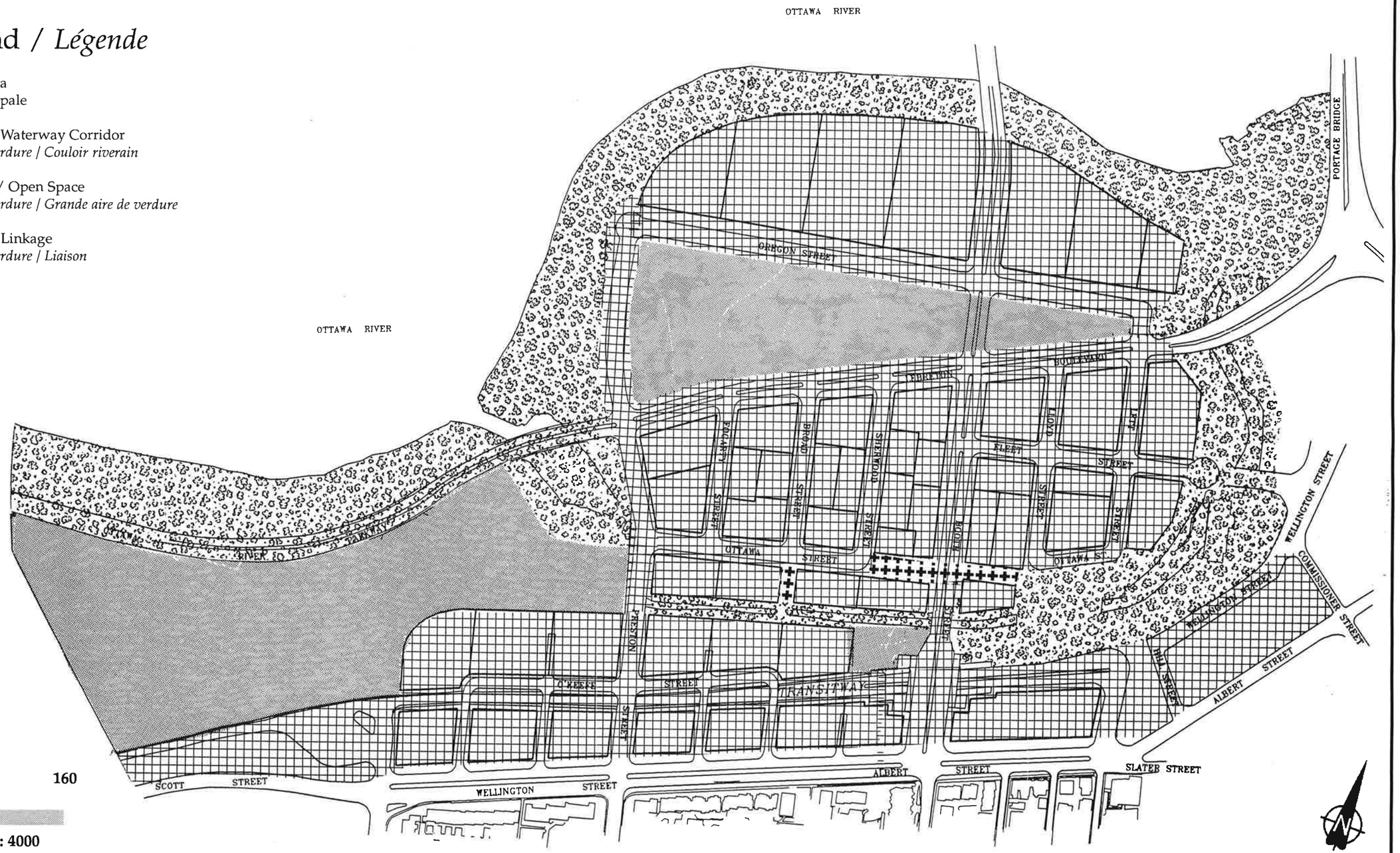
Schedule A - Land Use of the City of Ottawa Official Plan is amended by designating the majority of the site as "Central Area" and by designating parts of the site as "Greenway - Waterway Corridor"; "Greenway - Major Open Space"; and "Greenway - Linkage", as shown on Figure 18.

10.3.2 Official Plan Document Changes- Secondary Policy Plan

A new chapter, including text, will replace Chapter 1.11 entitled LeBreton Flats in Volume II: Secondary Policy Plans of the Official Plan. The land uses are shown on Figure 19. The text is as follows:

Legend / *Légende*

- Central Area
  Zone principale
- Greenway/Waterway Corridor
  Réseau de verdure / Couloir riverain
- Greenway / Open Space
  Réseau de verdure / Grande aire de verdure
- Greenway/Linkage
  Réseau de verdure / Liaison



LeBreton Flats
Les Plaines LeBreton

City of Ottawa Official Plan Amendment
Ville d'Ottawa - Modification du plan directeur

18
Figure

1.11 LeBreton Flats

This chapter applies to the lands known as LeBreton Flats and generally bounded by the Ottawa River to the north, the Canadian Pacific Rail Corridor to the west, Commissioner Street and the tailrace to the east and Scott-Wellington-Albert Streets to the south, as shown on Figure 19.

1.11.1 The Vision

LeBreton Flats is a site like few others. Its size and location next to the Ottawa River adjacent to Chaudière and Victoria Islands and next door to Parliament Hill, in the heart of the Nation's Capital, makes it unique and extremely important to the future of the National Capital Region.

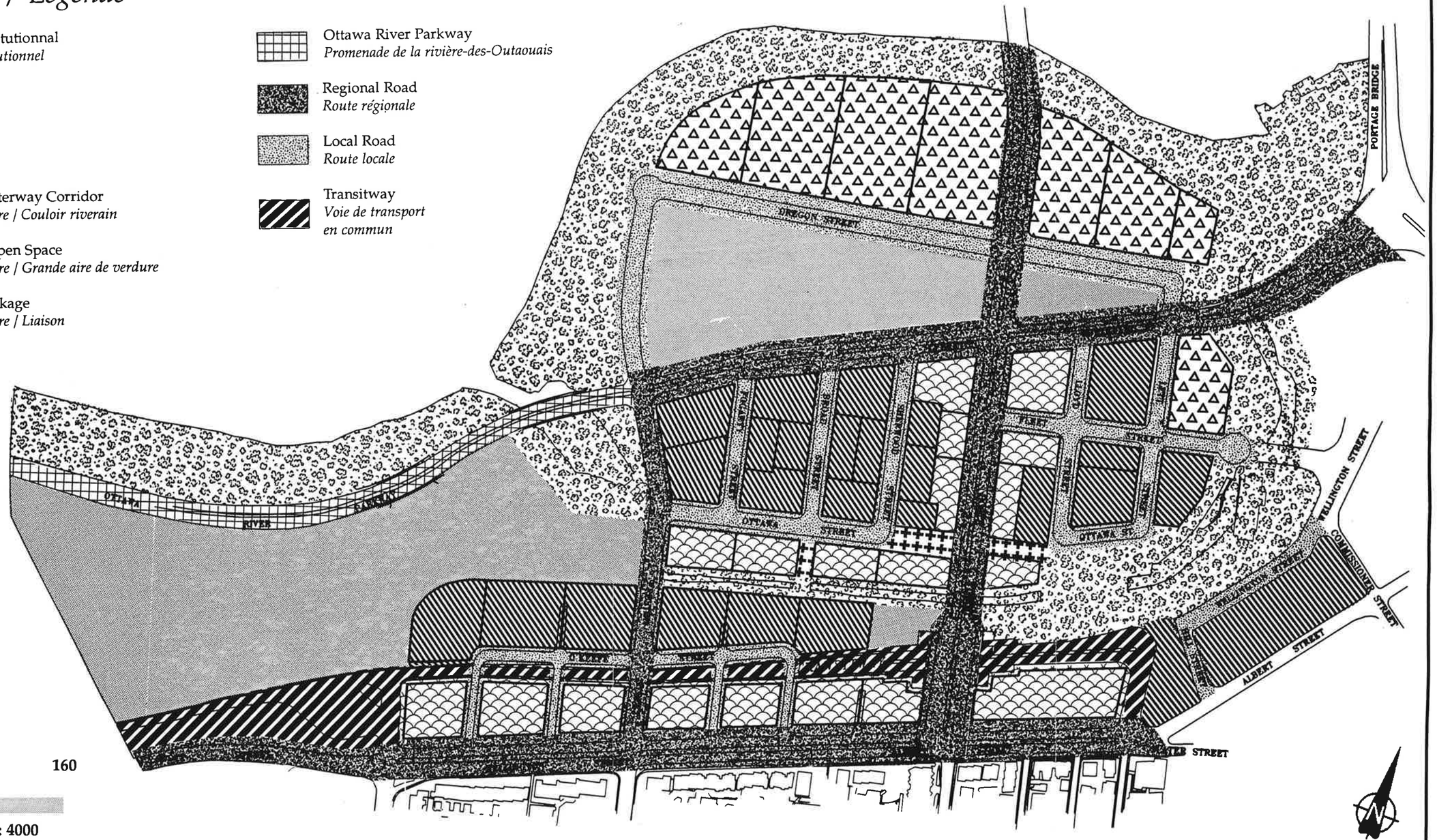
LeBreton Flats has had a rich and varied past. Today many remember how the former LeBreton Flats community was cleared in the early sixties as part the urban renewal frenzy of those days. Since the mid-sixties, this site has sat idle, save for the campground, the former snowdumps and the parking lots. The Transitway, the Ottawa River Parkway and regional roads move people through, but few stop to enjoy this space in the heart of the region.

There is a destiny for LeBreton Flats, other than as idle lands, and there is the potential to create a vibrant community again. Planners, designers, environmentalists, engineers, politicians, community leaders and members of the public have worked long and hard since the early seventies to bring life back to LeBreton Flats, to create a future. The philosophies and approaches to the planning of LeBreton Flats have been as varied as the participants, but a common ideal amongst the majority is that the time is now for LeBreton Flats.

The tripartite planning process that was initiated in 1989 has resulted in the Concept Plan that is the basis of the Secondary Policy Plan . The Vision for this Plan is to make LeBreton Flats the community of the next century, to challenge the developers of the future to create an urbane neighbourhood in the Central Area where people can live, work and play. It is a community where the principles of sustainability will shape neighbourhoods. It will be a community of mixed uses, surrounded by open spaces, it will consist of compact neighbourhoods which are linked together with pathways, it will be supported

Legend / *Légende*

- Cultural / Institutionnal
  Culturel / Institutionnel
- Mixed-Use
  Mixte
- Residential
  Residentiel
- Greenway/Waterway Corridor
  Réseau de verdure / Couloir riverain
- Greenway / Open Space
  Réseau de verdure / Grande aire de verdure
- Greenway/Linkage
  Réseau de verdure / Liaison
- Ottawa River Parkway
  Promenade de la rivière-des-Outaouais
- Regional Road
  Route régionale
- Local Road
  Route locale
- Transitway
  Voie de transport en commun



80 40 0 80 160

Scale / *Échelle* 1 : 4000

LeBreton Flats
Les Plaines LeBreton

City of Ottawa Official Plan Amendment
(Secondary Policy Plan)
Ville d'Ottawa - Modification du plan directeur
(Plan de politique secondaire)

19
Figure

by on-site public transit. It will be a community which attempts to address the concerns of today and tomorrow.

This Vision is echoed by the current plans and policies of the City and the Regional governments. The Central Area must offer more housing for those who wish to live close to the downtown. Much more efficient use of valuable urban land and services must now be achieved. Cities cannot continue to only build further and further out from their centres, at continuously low densities, served by longer and more congested roadways. People must be able to live close to where they work, if they so choose. There should be an attempt to improve the balance of jobs and housing in the same general area where people live. This is critical for the region's Central Area and to meet the challenges of the Regional Municipality's Regional Development Strategy.

The population is changing and dramatic changes will continue over the coming decades, as the baby boomers become senior citizens. The need for different types of housing units and locations to meet this need continue to grow. A unit sized "right", proximity to a wide range of amenities and services, viable transportation choices for getting around - these are the locational advantages that will matter to many in the near future, as much as the four bedroom house on a large lot matters to today's suburban families.

Business and employment development in the Central Area is also key to the city's economic vitality and diversity. LeBreton Flats offers an opportunity for such uses to be planned and integrated with other uses, primarily residential, from the outset of its redevelopment. This will not mean a duplication of the business uses of the core on LeBreton Flats. Instead, office, retail and institutional uses will be of a different scale, both in terms of buildings and the space requirements of individual business occupants. This is because the amount and configuration of commercial development in mixed use areas proposed for LeBreton Flats will naturally integrate more easily with other uses. LeBreton Flats will offer the opportunity for residents to work in their own neighbourhood and nearby; at the same time, business employees may choose to secure an apartment just down the street from their workplace.

LeBreton Flats represents one of the last pieces of waterfront real estate in the core area of the Capital. The role of this City as the nation's Capital has also found a prominent place in the future LeBreton Flats community. Part of the future Capital Vision for LeBreton Flats involves reclaiming the riverfront and access to it for the public. The northern riverfront of the site has been virtually inaccessible to the public, except by car on the elevated parkway, for almost thirty years. Reclaiming it means moving a section of the parkway further south, but the gains are formidable: a public waterfront corridor, a large capital park, and sites for future development of publicly-oriented uses of Capital significance.

These northerly lands will belong to the LeBreton Flats community, but they will also belong to all Canadians, and give enjoyment to visitors from near and far.

This is the Vision for the future LeBreton Flats community. In seeking to provide something for everyone, it has struck many compromises. These compromises have fostered many of the plan's strengths. The NCC believes that it successfully offers a realistic blueprint, balancing certainty of purpose with flexibility, with which future decision makers can build a quality mixed use, sustainable community in the heart of the Capital.

1.11.2 Objectives

In support of the Vision and of the Concept Plan for LeBreton Flats, the following objectives establish the basis for the policies of the Secondary Policy Plan.

a) to provide a unique community in the Central Area where people can live, work and play.
b) to provide an opportunity for mixed use development in the Central Area, by providing a diverse range of uses and activities.
c) to create an opportunity to increase the Capital presence in the Central Area.
d) to promote compact development in the Central Area by encouraging an efficient use of land in close proximity to the transit station.
e) to provide an opportunity to increase the number of dwelling units in the Central Area and to provide a range of housing options.
f) to promote increased employment in the Central Area.
g) to enhance the unique attributes of the existing site.
h) to encourage the public use and accessibility of the Greenway System.
i) to facilitate increased enjoyment of the waterway corridors of the Ottawa River and the aqueduct.
j) to ensure that infrastructure improvements are identified and undertaken as development occurs.
k) to protect and integrate the existing heritage features in a sensitive manner.

1.11.3 Policies

The following policies apply to the land uses as shown on Figure 19. The land use categories include: Cultural/Institutional; Greenway System; Mixed Use; and, Residential. These policies include direction for the Transportation, Environment, and, Infrastructure for the future development of LeBreton Flats.

Cultural/Institutional Uses

The Cultural/Institutional area is reserved for primarily governmental and non-governmental organization uses, with the exception of one site south of LeBreton Boulevard and east of Lett Street. These lands will be retained by the National Capital Commission to ensure that there are sites available in the future for uses of Capital importance. The lands reserved for this purpose will anchor the western end of Confederation Boulevard and the Parliamentary Precinct. The uses envisioned could include: small scale museums; offices of national/international organizations and special agencies; and accessory commercial uses such as shops and restaurants. The commercial uses shall be at grade to serve both the employees and the visitors. The development will be in the form of low to medium profile buildings.

City Council shall:

a) support the location of new nationally significant governmental or non-governmental organization uses and supporting uses such as commercial uses such as shops and restaurants, without amendment to the Plan.
b) encourage the creation of Canadian themes and expand the range of tourist attractions.
c) ensure that development of the cultural/institutional uses occurs in the form of low to medium profile buildings.
d) promote commercial/restaurant uses at grade.
e) encourage generous building setbacks from lands that abut the open space to provide for public outdoor spaces.
f) support and encourage shared parking facilities.
g) accommodate the needs of persons with disabilities and other special needs groups.

Greenway System Uses

The Greenway System is divided into three distinct areas: waterfront open space, major open spaces and linkages. The proposed open space system is founded on the principles of public waterfront access, protection of natural areas, provision of major park spaces and linkages of the system, both internally and to the wider Capital open space network. Together these areas will dedicate forty percent of LeBreton Flats to open space. The open space network will: create a capital park (LeBreton Common) and a local municipal park; preserve and enhance the recreational pathway network throughout the site; make the banks of the Ottawa River accessible; preserve the wooded areas along the forebay and tailrace; and, enhance the aqueduct corridor.

City Council shall:

a) work with the National Capital Commission to facilitate public access to the waterfront and to promote a continuous system of recreational pathways along the Ottawa River and the aqueduct.
b) ensure that the minimum width of the waterway corridor from the Ottawa River is 40 metres and along the open aqueduct is 5 metres.
c) encourage uses which animate and serve the users of the waterfront areas, the LeBreton Common and the municipal park.
d) encourage the use of LeBreton Common for the staging of national and regional festivals and special events.
e) support and promote the continued use of LeBreton Common as a year round focus for ceremonial and leisure activities.
f) protect resources that depict the natural and cultural heritage values of the waterways including the aqueduct, the pumping station, and the bridges.
g) recognize the heritage significance of the aqueduct, the pumping station, and the bridges.
h) allow the continued use of the Thompson-Perkins Mill for commercial uses.
i) ensure the protection of natural features along the tailrace.
j) promote linkages between the community and the aqueduct and other open spaces.
k) ensure that recreational pathways are included in the future development.

Mixed Use

The principal philosophy and foundation of the new LeBreton Flats community is one of mixed use. This will translate into a residential and commercial neighbourhood with a density of development similar to parts of Centretown. Mixed use development is proposed along Regional roads to take advantage of siting and accessibility. As well, mixed use will be encouraged along the north side of the aqueduct, where at-grade commercial uses, including retail, personal service and restaurants, will animate the area. Mixed uses will be compact and in medium to high profile buildings (up to approximately 12 storeys) to make more efficient use of land and infrastructure, including a proposed transit station. This area will facilitate the integration of home and work. Mixed uses will be encouraged at the building, parcel and neighbourhood block scale. A diversity of uses will enhance the role of LeBreton Flats in the Central Area. As well, both residents and visitors will be attracted to various parts of the site outside normal business hours, ensuring safer streets.

City Council shall:

a) permit a broad range of uses including: residential, retail; office; entertainment; cultural; institutional and recreational, in medium to high profile buildings.
b) support the integration of residential and commercial development in the same blocks or in the same buildings.
c) promote and permit residential uses within mixed use development or as a primary use, and other complementary uses which generate evening and year round activity.
d) promote the efficient and compact development of LeBreton Flats.
e) encourage pedestrian oriented uses at grade along Booth Street and Scott Street and along the aqueduct.
f) permit development to occur up to the lot lines and to promote wide sidewalks to create a safe and pleasing pedestrian environment.
g) encourage the development of higher density development (both residential and commercial) in close proximity to the transit station.
h) ensure that noise and air pollution have been addressed in the design of units located in close proximity to the Transitway and regional roads.
i) support the provision of reduced parking for uses in close proximity to the transit station.
j) support and encourage the sharing of parking facilities between uses with differing parking demands to efficiently use land.

Residential Uses

The residential lands will allow a range of dwelling types appropriate for the Central Area. The provision of housing on LeBreton Flats will encourage people to live in close proximity to where they work, decreasing the reliance on the automobile. Residential development should be compact to provide for a more efficient use of land and services. The types of dwellings anticipated will range from stacked townhouses to apartment buildings and will be medium to high profile (up to approximately 12 storeys). In general, medium profile buildings will be located in the general vicinity of the aqueduct, while higher profile buildings will be located along Regional roads.

City Council shall:

a) support the provision of a range of housing forms in medium to high profile buildings.
b) support the provision of a variety of residential units and forms which are affordable and accessible to all incomes, ages and household types.
c) encourage efficient and compact development.

d) support the provision of reduced parking in close proximity to the transit station.
e) encourage the development of higher density and high profile buildings in close proximity to the transit station.
f) ensure that noise studies are undertaken prior to the approval of a subdivision plan.

Transportation

City Council shall:

a) support the relocation of the Transitway.
b) support the relocation of that portion of the Ottawa River Parkway to be replaced by LeBreton Boulevard.
c) ensure that a traffic impact study is undertaken prior to the approval of a subdivision plan to ensure that traffic can be adequately accommodated or that measures are undertaken to ensure traffic is accommodated.

Environment

City Council shall:

a) ensure that, prior to subdivision approval, site remediation and site management plans be approved in accordance with federal and provincial regulations in force at the time.
b) ensure that, prior to subdivision approval, stormwater design plans or acceptable plans be completed to the satisfaction of the City of Ottawa.
c) ensure the protection of natural features along the tailrace.
d) ensure the retention, wherever possible, of the existing vegetation in healthy and vigorous condition.

Infrastructure

City Council shall:

a) require, that prior to rezoning approval, servicing plans have been completed to the satisfaction of the City of Ottawa.

11.0 CONCLUSION

This comprehensive document and its attached reports constitute the application and supporting information for City of Ottawa and Regional Official Plan Amendments. The proposed City and Regional OPAs appear in Sections 9 and 10.

The concept plan deserves support for many reasons. By proposing the redevelopment of an "orphaned" downtown site, the LeBreton project advocates a sustainable city approach and efficient use of urban land. Overall, this philosophy is environmentally conscious as are many features of the LeBreton Flats plan. The sustainable city philosophy places an emphasis on mixed use development, streets and pathways which accommodate walking and cycling, accessible public transit, urban greenery and the integration of home and work opportunities which reduces the need to travel. These will all be features of the new LeBreton community. In contrast to the LeBreton Flats plan, low density suburban development (urban sprawl) has resulted in numerous adverse environmental impacts, such as congestion, air pollution, job-housing location imbalances, longer commuting times, natural resource costs, economic costs, loss of agricultural land, etc. A choice to develop LeBreton Flats is a choice of urban intensification over suburban development and its effects both on the nature of communities and on the rural-urban fringe.

List of Annexes

1. List of Technical Reports Supporting this Application

2. Executive Summary: "Mapping, Assessment and Prioritization of Former Land Uses in the LeBreton/Bayview Area", Raven Beck Environmental Ltd., December 1992

3. Executive Summary: "Site Remediation Program Plan for LeBreton", Raven Beck Environmental Ltd., June 1992

4. Executive Summary: "Summary Report: Phase I Site Characterization - LeBreton Flats, Ottawa", Raven Beck Environmental Ltd., March 1993

5. Executive Summary: "Preliminary Remediation Feasibility Study - LeBreton Flats, Ottawa", Raven Beck Environmental Ltd., September 1994

6. Summary Description of Five Alternate Concepts: LeBreton Tripartite Planning Process

7. Terms of Reference: LeBreton Flats Stormwater Management Feasibility Study, NCC, 1996

8. Summary of Land Conveyances: LeBreton Flats Master Land Agreement

Annex 1

Supporting Technical Reports Not Forming Part of the Application

1. LeBreton: Assessment of Social & Community Facilities and Services, September 1993, updated November 1996, NCC
2. LeBreton Flats Development Infrastructure Needs Assessment Study, Ainley Graham and Associates, 1991 (original) and 1993 (update)
3. LeBreton Flats Stormwater Management Study, Novatech Engineering, June 1991
4. LeBreton/Bayview Transportation Study, Delcan, February 1992
5. LeBreton Flats Transportation Review, Delcan, April 1993
6. Ecological Inventory Update of the LeBreton Flats Site, Ecological Services Group, December 1996
7. LeBreton Flats Aqueduct Sediment Sampling, Jacques Whitford Environmental, October 1996
8. LeBreton Flats Aqueduct Fish Habitat Assessment, Jacques Whitford Environmental, November 1996
9. Economic Analysis- LeBreton Bayview Development, Regional Real Estate Consultants, July 1994
10. LeBreton Flats Master Land Agreement, , March 1996, NCC, Regional Municipality of Ottawa-Carleton, City of Ottawa
11. LeBreton Flats Master Land Agreement, Environmental Screening, March 1996, NCC
12. Ottawa Waterworks: The Aqueduct & Bridges at LeBreton Flats, Inventory and Assessment of Heritage Resources; Padolsky Architect, Commonwealth Historic Resource Management, McNeely Engineering; December 1992
13. Mapping, Assessment and Prioritization of Former Land Uses in the LeBreton / Bayview Area, Raven Beck Environmental Ltd., December 1991
14. Site Remediation Program Plan for LeBreton, Raven Beck Environmental Ltd., June 1992
15. Summary Report: Phase I Site Characterization, LeBreton Flats, Ottawa; Raven Beck Environmental Ltd., March 1993
16. Preliminary Remediation Feasibility Study, LeBreton Flats, Ottawa; Raven Beck Environmental Ltd., September 1994
17. LeBreton/Bayview Noise Monitoring, Rowan Williams Davies and Irwin Inc., November 1992 (LeBreton Option D Noise Design Review, March 1993
18. Inventaire des composantes environnementales du Secteur central ouest. Beauchemin Beaton Lapointe, March 1990
19. Mapping and Assessment of Former Industrial Sites, City of Ottawa, Intera Technology Ltd. 1988

Annex 2

Mapping, Assessment and Priorization of Former Land Uses in the LeBreton/Bayview Area
Raven Beck Environmental Ltd., 1991

Executive Summary

Mapping of the former land use in the LeBreton/Bayview area for the period 1870 to present has identified 51 sites with potential to contaminant soil and groundwater. The 51 sites have been categorized based on similarity of site operations and likely nature of remnant wastes. The resultant 8 categories are:

1) Primary Metal and Fabricated Metal Product Industries (16 sites)
2) Waster Materials, Metal Scrap yards and Metal Storage (12 sites)
3) Automotive Vehicle Sales and Service (16 sites)
4) Railway lands (7 sites)
5) Builders Supply, Miscellaneous Warehouses and Storage Facilities (16 sites)
6) Municipal landfills (3 sites)
7) Municipal snow dumps (4 sites)
8) Miscellaneous industrial sites (10 sites)

Several identified sites had multiple uses.

The identified sites within each category were assessed considering the likely site contaminants and potential for environmental impact. A priority listing of 3-5 individual sites within each category was made based on site characteristics including size, nature and duration of operations as well as available results of site investigations performed in the LeBreton/Bayview area and at similar sites in other jurisdictions. Remnant wastes and therefore potential environmental impact during redevelopment is likely to be greatest at these priority sites.

Overall prioritization of all identified land use sites in the LeBreton sector for subsequent investigation and assessment was completed considering the potential for environmental impact during site redevelopment and NCC phasing for development of the LeBreton sector.

The priority listing of sites for the Phase 1 development area is:

High Priority:

Ottawa Paint Works

Medium Priority:

CPR Yards
Unknown Bus Garage and Service Station

Low Priority:

Ottawa Brass Manufacturing Co.

High Priority Sites Identified in the Phase 2 and 3 development areas:

Phase 2:

Sachs Brothers Junk Yard
J.H. Connor and Sons Foundry

Phase 3:

Dibblee Asphalt Plant
Baker Brothers Ltd. Junk Yard/Service Station

Annex 3

Site Remediation Program Plan for LeBreton
Raven Beck Environmental Ltd., 1992

Executive Summary

The results of site characterization studies completed at LeBreton have identified the occurrence of heavy metal and hydrocarbon contamination at concentrations above available provincial and federal remediation criteria. These occurrences demonstrate the need for further investigation and development of a site remediation program plan for LeBreton. To assist in developing such a plan, this report reviewed the 1992 NCC proposed development plan, former land use in LeBreton and the results of site characterization studies completed in 1990-1992.

Site characterization:

Identification of zones of remnant soil contamination at high priority sites selected from review of former land use suggest that the approach of targeting areas for investigation based on site history, is useful at LeBreton. The results to date suggest that contamination is most likely to be significant at the following categories of former land use: municipal landfills; waster material, metal scrap yards and metal storage sites; primary metal and fabricated metal product industries. There are 21 of these sites in LeBreton. In addition to these major land use categories, contamination occurs at selected miscellaneous industrial sites (i.e. Ottawa Paint Works, Dibblee Asphalt Plant) and in pockets on former railway lands and other miscellaneous sites. Snow dumps, automotive vehicle sales and services sites and warehouse and storage facilities appear less likely to have contaminated site soils. However, groundwater contamination in the form of elevated chloride levels has been identified at snow dump sites.

The soil sampling and chemical characterization completed t date shows that metal contamination, primarily by heavy metals (i.e. lead, copper, zinc) and hydrocarbon contamination primarily by PAH are the principal types of soil contamination in LeBreton. Both of these contaminants groups are environmentally persistent and several members of the groups are human health concerns. Heavy metal contamination was found typically in the upper 1.5 metres of fill at concentrations usually less than 3 times remediation criteria. PAH contamination was detected at similar concentrations in pockets of surficial fill. At the Dibblee Asphalt Plant site, higher concentrations of PAH were found at greater depth. No PCBs were detected at LeBreton. With the exception of the Ottawa Paint Works, volatile aromatic hydrocarbons, including benzene were not detected at significant levels in soils at LeBreton.

Site Remediation Program Plan

A site remediation program plan was developed for LeBreton based on 11 sequenced components or tasks:

1) Initial Environmental Evaluation
2) Review of Former Land Use
3) Phase 1 Site Characterization
4) Establish Remediation Objectives
5) Preliminary remediation Feasibility Study
6) Phase 2 Site Characterization
7) Preparation of Soil and Groundwater Management Plans
8) Approvals
9) Final Remedial Investigations
10) Site Remediation
11) Verification and Documentation

To date, the first two components have been completed and parts of the Phase 1 site characterization work have been performed. Future activities should focus on completion of supplementary Phase 1 characterization studies, establishment of remediation objectives and performance of a preliminary remediation feasibility study. These activities would provide the NCC with an early indication of the likely remediation methods suitable for LeBreton and a range of approximate remediation costs. These remediation costs would b preliminary because the Phase 2 site characterization work necessary to accurately calculate waste volumes would not have been completed.

Annex 4

Summary Report: Phase I Site Characterization, LeBreton Flats, Ottawa Raven Beck Environmental Ltd., 1993

Executive Summary

Redevelopment of LeBreton Flats to an integrated community with mixed residential, commercial, institutional an open space/recreational land use is proposed by the National Capital Commission (NCC). Since most of LeBreton was formerly industrial and commercial land, remnant soil and groundwater contamination has been identified as a potentially significant constraint to future development.

To address these concerns, the NCC developed a site remediation program plan for LeBreton. This plan based on review of former land use, available site characterization studies and similar remediation programs in other jurisdictions, defines an overall approach to development and implementation of a site remediation program for LeBreton.

Work undertaken to date as part of the remediation program plan has focused on completing the tasks necessary to prepare a preliminary remediation feasibility study. A significant component of this feasibility study will be the results of initial or Phase 1 site characterization studies that define the quality of soil and groundwater at LeBreton. This report summarizes the results and significance of the results of Phase 1 site characterization studies completed at LeBreton.

Phase 1 site characterization studies have been completed at 19 selected sites at LeBreton from November 1990 to March 1993. One hundred seventy-nine boreholes or test pits and 52 monitoring wells have been completed to assess soil and groundwater conditions. 218 soil samples and 55 groundwater samples were analyzed for various inorganic and organic contaminants likely to be present at LeBreton based on a review of former land use.

The results of Phase 1 site characterization studies show that heavy metals (i.e. lead, cadmium, mercury, copper and zinc) and heavy polycyclic aromatic hydrocarbons (PAH) are the principal types of soil contamination at LeBreton. These contaminants are typically found at sites in LeBreton that had former use as junk yards, foundries and boiler and steel works. Metal contamination is found typically in the upper 2.0 metres of fill and PAH is found in pockets of the fill and occasionally deeper in the soil column. Metal and PAH concentrations are usually less than 3 times available provincial and federal remediation criteria for residential land use.

The occurrences of metal and PAH contamination are more frequent north of the aqueducts than south of the aqueducts. South of the aqueducts, east of Booth Street, fill either imported for initial development of LeBreton or placed following demolition in 1964-65 was found to contaminated with elevated levels of lead, cadmium, mercury or zinc. North of the aqueducts soil mounded on several LeBreton blocks is free of contamination that would classify the fill as waste.

Groundwater quality at LeBreton is impaired primarily as a result of snow dumping operations and activities at the former Ottawa Paint Works. Three snow dumping operations at LeBreton have resulted in elevated concentrations of chloride in groundwater. The operation of the Ottawa Paint Works has resulted in a groundwater contaminant plume caused by paint solvents that is characterized by elevated concentrations of benzene, toluene, ethylbenzene and xylenes. Minor pockets of hydrocarbon contamination of groundwater are also expected at selected sites in LeBreton based on former storage and handling of petroleum based solvents and fuels. Most of the groundwater at LeBreton discharges to the aqueducts upstream and downstream of the Fleet Street pumping station.

Annex 5

Preliminary Remediation Feasibility Study, LeBreton Flats
Raven Beck Environmental Ltd., 1994

Executive Summary

Redevelopment of LeBreton Flats to an integrated community with mixed residential, commercial, institutional and open space/recreational land use is proposed by the NCC. Since much of LeBreton was formerly industrial and commercial land, remnant soil and groundwater contamination has been identified as a potentially significant constraint to future development.

To address these concerns, the NCC in 1992 developed a site remediation program plan for LeBreton. This plan defines an overall approach to development and implementation of a site remediation program for LeBreton.

One of the important milestone reports in the LeBreton site remediation program plan is the completion of a preliminary feasibility study. This report is the preliminary remediation feasibility study for LeBreton. This provides an early indication of the likely cost and success of cleaning up LeBreton to allow for the proposed future land use. Although the feasibility study is preliminary because not all site characterization and related studies are complete, the study is required because of the large size and scope of the proposed LeBreton development.

The results of the available characterization studies show that heavy metal and heavy polycyclic aromatic hydrocarbons (PAH) are the principal types of soil contamination found in LeBreton. These contaminants are typically found at sites in LeBreton that had former use as junk yards, foundries and boiler and steel works. Metal contamination is found typically in the upper 2.0 metres of fill and PAH is found in pockets of the fill and occasionally deeper in the soil column. Metal and PAH concentrations in soil are usually less than 2 times available provincial and federal generic remediation criteria for residential land use.

Groundwater at LeBreton has been impaired in selected areas by snow dumping operations and former land use. The significant areas of groundwater contamination detected to date, relate to spillage or leakage of aromatic solvents and petroleum hydrocarbons at the Ottawa Paint Work site and Colonial Coach Lines site.

A preliminary determination of environmental risk at LeBreton under existing and proposed future land use, indicates that groundwater discharge does not

presently cause a detectable impact to the aqueducts, that off site soil quality is somewhat elevated relative to Ontario norms and that risk based exposure assessment would be a useful method of determining remediation objectives for LeBreton. Review of available data suggests that contaminants of concern at LeBreton are antimony, arsenic, barium, cadmium, copper, lead, mercury, zinc and heavy PAH.

Approaches to development of remediation objectives for LeBreton are reviewed based on existing and proposed federal and provincial guidelines, policies and protocols and work completed or proposed at Pacific Place, Vancouver and in the Lower Don Lands, Toronto.

This review clearly indicates that for large development projects like LeBreton, site specific remediation objectives should b e developed using a detailed risk based exposure assessment. Such an assessment would allow for identification of critical exposure pathways and therefore potential use of on site management methods to reduce of block such pathways.

Suitable options for remediation of soil and groundwater in LeBreton includes on site management, processing and reuse, removal, segregation and disposal, treatment technologies and groundwater management. Since large volumes of overburden comprise primarily of fill must be excavated and handled to accommodate underground parking the recommended remedial plan for LeBreton soil is on site management, segregation, processing, reuse and off site disposal or treatment. Estimated cost to implement this plan is $6,696,000. The recommended remedial plan for groundwater is site specific at LeBreton and includes source removal an in-situ bioremediation of contamination by petroleum hydrocarbons and aromatic solvents. Assuming five of these sites exist at LeBreton the estimated cost for groundwater remediation is $820,000.

Future studies and actions that are key to implementation of the site remediation program plan are identified and include supplementary site characterization, detailed risk based exposure assessment and preparation of soil and groundwater management plans. Estimated costs for these key activities are $375,000.

The total costs for soil and groundwater remediation/management and supplementary studies are estimated based on current knowledge and conditions at $7,891,000. These costs may change based on the results of supplementary site characterizations studies, revisions to remediation objectives based on risk-based exposure assessment, technological developments in remediation methods and regulatory guidelines.

Annex 6: Five Alternative Concepts for LeBreton Flats

The following are brief summaries of the five alternative concepts for the redevelopment of LeBreton Flats, which were developed in the early stages of the tripartite planning process. Concept Five - The Agora was chosen as the preferred concept in 1991.

Concept One - Consolidating the Capital

For this proposal, the key objectives included: defining a cross-roads; extending the Capital Lands; reconstituting the urban edges; creating a unique meeting of town and crown; and improving the quality of the built and natural setting. This would be accomplished through clear organization of a series of buildings which reinforce both the qualities of the Capital urban core and the natural setting. This concept created a strong visual image, preserved the Ottawa River shoreline as an open space, provided a major park and local open spaces, and provided water activities, national program buildings, and pedestrian access across the aqueduct.

The concept did have constraints which resulted in the distinction between national and local areas being too marked. The proposed infrastructure changes would have been costly and the modifications to the aqueduct extensive. The number of housing units proposed was low, and placed in an area with difficult soil conditions. As well, this concept did not include the possibility of relocating the Ottawa River Parkway, which resulted in no increase in the amount of useable space along the waterfront.

Concept Two - A Symbolic Bridge

This concept featured a symbolic bridge of public open space linking the two sides of the Ottawa River in the core of the Capital. This would have created the opportunity to enhance the role of the Ottawa River. Other features included the preservation of lands for national needs, the preservation and rehabilitation of the natural character of the shoreline, the replacement of the Ottawa River Parkway by an urban boulevard within a green corridor and the retention of the Transitway in its current location.

This plan called for an extensive mix of land uses. It provided for a continuous pedestrian system with an open space corridor, passive and active parks and a large reserve of land which was to be available for future uses. The land use was not finalized for this latter area, but until the land use was finalized, the land was to be used for recreation purposes. This plan created identifiable neighbourhoods with a variety of land uses.

It was concluded that this plan lacked cohesion since there was no strong order to the site. The capital park lacked a focus, the amount of housing proposed was low and there was too much floor space proposed above the aqueduct. As well, pedestrians would have had to cross the Ottawa River Parkway from the transit station, which would have created an unsafe pedestrian environment.

Concept Three - A Multi-Use Node

This proposal built upon the sites physical characteristics resulting in what some termed an orderly development of uses. This plan, like the second concept, featured the realignment of the Ottawa River Parkway and its reestablishment as an urban boulevard. This resulted in a greater emphasis being placed on the waterfront character of LeBreton Flats. This plan demonstrated good visual and spatial integration and manageable residential uses, prominent sites for landmark buildings and a strong aqueduct image. There was the potential for a high number of dwelling units and the Parkway character was transformed to an urban boulevard, with a good pedestrian network. A redeveloped City Centre (an existing project to the south west), would link to a strong commercial focus.

However, in this plan a number of the buildings were proposed to be located above the Transitway. The resulting technical and legal difficulties proved to be expensive and created an impediment to the type of housing that could be constructed. As well, in this plan the aqueduct would have been bordered by roads leaving little public or usable open space adjacent to the aqueduct. The Capital Park was bisected by a major road (Booth Street) which also would have resulted in a reduction of the useable area and created a concern about safety. Some development would have been on the landfill area which was not acceptable.

Concept Four - Creating an Urbane Capital

This concept proposed to integrate the LeBreton Flats site with the Parliamentary Precinct's open, 'green' character which, over the years, has become a key part of the urban fabric of the Capital. At the same time, it provided for an institutional and cultural presence of national and international stature.

Elements of this proposal depended on the role of the urban grid. This plan proposed to extend Wellington Street and the neighbouring grid street pattern to create a community that was an extension of the existing community surrounding LeBreton Flats. Ample open spaces, a tailrace park and the Ottawa River shoreline were the key features. This concept resulted in a familiar street pattern grid. Urban parks were well defined and had a distinct character. Allowances were made for activities and open spaces adjacent to the River and

ends of the aqueduct. There was a large amount and variety of housing and urban uses extending north of the aqueduct

One of the difficulties with this plan was that the road system was fragmented and the relationship between the Transitway station and remainder of the development was poor. Housing was proposed over the covered aqueduct and the former landfill which was unacceptable. As well, only a minimal amount of space was proposed for national program buildings. Since one of the objectives of the LeBreton project was to ensure that there are lands available in the future for national programming, this was not acceptable.

Concept Five - An Agora

The concept of "An Agora" has been around since the Hellenic times. This concept has as its basis two distinct functions: an Acropolis or a place of reverence and authority representing power and order and the Agora, a meeting place. The Agora was usually in close proximity to the acropolis but lower in elevation. The Agora was where the daily business of the city was conducted but also included festival activities such as parades and cultural events. In the Ottawa context, the Acropolis is the Parliamentary Precinct, and LeBreton Flats, the Agora.

The spirit of the Greek Agora was captured in this concept by a triangular shaped space - which was to eventually be framed by buildings - which provided a transition from the Parliamentary Precinct to the vistas of the Ottawa River. The geometry of this space was shaped by vistas, movement, the configuration of the natural landscape, and the fabric of the city that surrounded it. It was envisioned that as the Capital grew this space would develop a life of its own.

This concept called for the realignment of the existing Ottawa River Parkway away from the river's edge, road improvements, relocation of the Transitway, and the establishment of a north-south axis to strengthen access to and perception of the assets that fall within the study area.

This plan created a strong visual image. Some parcels would be made available for early construction and the infrastructure costs could be relatively low. As well, the Capital Park was clearly related to Confederation Boulevard and the Parliamentary Precinct. The aqueduct, as a green linear park, created a well-defined pedestrian loop. Regional-scale recreational lands were provided, national program lands were capable of incremental growth, the development provided a strong commercial/economic base for the area and urban/residential uses extended north of the aqueduct.

The difficulty with this concept was that the uses are segregated (i.e. there was an unnecessary amount of space between the urban and national programming lands) and the road system was discontinuous and the at-grade Transitway created a north/south movement barrier and a possible noise/pollution problem. Housing numbers were relatively low and there was little activity along the aqueduct.

Annex 7

Terms of Reference - LeBreton Stormwater Management Feasibility Study

INTRODUCTION

The National Capital Commission (NCC) requires professional services to complete a stormwater management feasibility study for the LeBreton Flats redevelopment proposal (Figure 1). A concept for the redevelopment of the LeBreton Flats featuring a mixed use community was completed in 1992. The Concept Plan will be submitted to the City of Ottawa and the Regional Municipality of Ottawa-Carleton (RMOC) for Official Plan Amendments (OPAs) in 1997. Due to the long delay expected between the OPAs and future Zoning and Subdivision applications, a detailed Master Drainage Plan or a Stormwater Design Plan would be inappropriate at this time. The present study should however demonstrate the feasibility of achieving an acceptable storm drainage scheme for this site in view of the proposed Concept Plan. Although no specific federal, provincial, or municipal EA requirements have to be fulfilled at this stage, it is the intent of this study to satisfy Phases 1 and 2 requirements of the Class EA for Municipal Water and Wastewater projects (Municipal Engineering Association, 1993). This EA framework will provide the basis for any future stormwater EA requirements. This study will also respect the NCC Stormwater Management Policy where applicable.

A stormwater management study was completed by Novatech Engineering Consultants Ltd. in 1991, which identified preliminary drainage options for the site, along with a number of issues to be addressed. Other environmental and technical studies were completed during the planning of the LeBreton Flats redevelopment. Of interest are site characterization studies undertaken for this site (see Raven Beck Environmental Ltd., 1994), and the most recent aquatic and sediment analyses of the aqueduct conducted by Jacques Whitford Ltd. (1996). LeBreton Flats is the site of former industrial and railyards activities, where low level soil contamination is present throughout (mostly PAH and heavy metals at levels slightly above guidelines). As for the recent sediment analyses of the open aqueduct and tailrace, they indicated the presence of PCB, PAH, and heavy metals at levels above the 1996 MOEE guidelines. A good understanding of the state of contamination of this site will therefore be necessary to carry on this study. In particular, further analysis concerning contamination in the aqueduct will be required.

In terms of aquatic habitats, the open aqueduct upstream of the Fleet Street Pumping Station sustains a degraded Class 3 fish habitat. A Class 2 (and possibly a Class 1) fish habitat has been assessed along the tailrace. A more

detailed inventory of the tailrace will be required in the spring of 1997 to assess its spawning characteristics and to confirm the fish habitat class. These studies, and particularly the Novatech Report, will form the basis of the present study.

The objectives of this study are:

- to resolve the stormwater management issues identified in the 1991 Novatech Report, as well as other related issues referred to in this document;
- to gather additional data on water quality and quantity, aquatic habitats, and on the state of contamination in the aqueduct;
- to refine or modify the stormwater management alternatives proposed by Novatech (1991), or if required, to recommend other alternatives;
- to satisfy provincial and municipal requirements, and to secure their approval of the proposed stormwater management schemes in support of an Official Plan Amendment.

The following Terms of Reference have been prepared as a guide for the required services.

SCOPE OF WORK - TASKS

As indicated above, this study should build upon the stormwater management study completed by Novatech in 1991, as well as other related studies (environmental and technical) completed for the LeBreton Flats redevelopment project. The Novatech report and the LeBreton Flats concept brochure are attached to these Terms of Reference to provide a better understanding of the scope of work. A complete list of references is presented at the end of this document.

In light of new information, the present study should confirm or modify the 1991 approach to stormwater management for LeBreton Flats. In the event that the aqueduct or tailrace are too sensitive to be used for stormwater management purposes (related to the presence of Class 1 fish habitat or contaminated sediments), an option of directing stormwater elsewhere in the Ottawa River should not be overlooked. The study should also satisfy the requirements of phases 1 and 2 of the Class EA for Municipal Water and Wastewater Projects (1993).

More specifically, the following tasks are to be completed:

- Review the Concept Plan for redevelopment of LeBreton Flats to understand proposed land use and servicing schemes. Also, review Concept Plan in consideration of any recent proposals for infrastructure improvement in the area (e.g. diversions proposed along the West Nepean Collector Sewer, modifications to sewer regulators on the Flats, etc.);

- Review existing background studies on the environmental and technical characteristics of the site, and identify the need for additional data to satisfy the scope of this study. In particular reports on soils quality, and on groundwater flow and quality should be reviewed to provide guidance to the surface drainage strategies. The existing information on soil and groundwater quality is generally sufficient for the purpose of this study;

- Review the 1991 Novatech report and the other background reports identified herein to confirm or modify the proposed storm drainage options, or to recommend other options;

- Liaise with regulatory and approval agencies (MOEE, MNR, RVCA, RMOC, City of Ottawa) to aim for a consensus amongst all parties on water quantity and water quality of the receiving watercourse and on the related stormwater discharge criteria to be adopted in the stormwater design plans for the LeBreton Flats redevelopment scheme. On-going communication with the NCC Project Officer will also be required throughout the study;

- Based on the existing aqueduct sediment results, undertake additional analysis sufficient to determine if the source of contamination in the aqueduct is on-going or not, and to ensure that the recommended stormwater management scheme does not encourage the release of these contaminants in the aquatic system. In particular, the information on PCB needs to be augmented as it was never tested for in past groundwater and surface water analyses. Sediment analysis along the Ottawa River may also be required if an outlet to the Ottawa River is considered;

- Undertake spring fish spawning inventories in the tailrace sufficient to determine if the site is used by species with stringent spawning requirements or by endangered, threatened or vulnerable fish species (Class 1 fish habitat). The use of a variety of methods throughout the potential spawning period will be required, and will be subject to MNR approval;

  An optional aquatic habitat and spring fish spawning inventory along the Ottawa River should also be planned in the event that the tailrace supports a Class 1 habitat, and that an outlet to the Ottawa River is considered;

- In consultation with the regulatory and approval agencies and the NCC Project Officer, gather water quality and quantity data of receiving waters sufficient to determine the existing conditions, and to provide the basis for stormwater design requirements. Water quality and quantity data will be required to characterize existing conditions of the Ottawa River, the open aqueduct, the tailrace, stormwater discharges, and the combined sewer overflow (North of Fleet Street at the tailrace). Monitoring should be undertaken during the spring fish spawning inventory as well as during summer low flow and storm events. The number of samples should be sufficient to achieve reasonable representativeness of the data. Water quality parameters, sampling methods and locations should be discussed with the regulatory and approval agencies and the NCC Project Officer, and would include Total Suspended Solids (TSS), nutrients, selected heavy metals, E. coli, PAH and PCB. Additional parameters such as water temperature, pH, and flow velocities would also need to be measured as part of the spring fish spawning inventory to support discussion on fish spawning results.

  The aqueduct levels are controlled at the Fleet Street Pumping Station but there are no records of the flows through the system under low flow and wet weather conditions. In order for the aqueduct to be used as a stormwater facility, modifications may be required to the Pumping Station to facilitate retention in the aqueduct. Thus some flow data will be required.

- Refine or modify Novatech's modelling and simulations if required;

- Review, confirm or modify Novatech's stormwater drainage options in light of new information and current standards, or if required, recommend new alternatives. Integrated stormwater management methods (BMP's, site level, end of pipe methods, etc.) and innovative technologies (specialized manholes and catchbasins, filter beds, etc.), especially those methods or technologies which might reduce the areal extent of stormwater management facilities should also be considered in the evaluation of alternatives. Review of alternatives and methods should include discussions on benefits/costs, pros/cons, advantages/disadvantages, etc.;

- Identify and evaluate potential impacts, along with mitigating measures, of the stormwater management options on receiving waters (water quality, flow, aquatic habitats, etc.), on terrestrial habitats and on infrastructure such as the Fleet Street Pumping Station turbines;

- Participate in and provide expertise for one public consultation session. Public consultation, in the form of an Open House or Public Meeting, will be organized by the NCC. The consultant will be required to present the results of the preliminary analysis of the stormwater management drainage

alternatives, and to incorporate the comments received at this session into the work completed to date, including required adjustments to the recommended solution. Bilingual staff will be available during this public consultation;

- Identify the optimum stormwater management scheme for the site to comply with all current applicable regulatory requirements, objectives and policies. Since there will be a long delay between this study and implementation of the study recommendations, the assumptions and the basis used for selecting and studying any option or scheme should be clearly defined and presented for future references;

- Confirm or modify land requirements and locations for the recommended drainage scheme.

SCHEDULE

The study is to commence immediately after award of contract.

The LeBreton Flats Concept Plan and Plan of Development will be submitted to the City of Ottawa and the RMOC in early 1997 for Official Plan Amendments. Due to the time constraints imposed by the OPA application review process, the preliminary analysis of the stormwater drainage alternatives should be completed by the end of April 1997. This preliminary analysis is to form the basis of a public consultation to be held in May 1997. The objective of the public consultation is to satisfy Phase 2 of the Class EA process. It is not anticipated that summer water quality and flow monitoring will have a major impact on the selection of alternative stormwater management schemes. Summer monitoring will help in defining impacts and mitigation measures of the selected options. Completion of the study is required for mid-summer 1997.

DELIVERABLES

Ten copies of a progress report to be delivered by the end of April indicating: results of aquatic inventory and monitoring, a preliminary analysis of the alternative solutions considered, and the likely potential environmental impacts and mitigation measures. This progress report and corresponding tasks will form the basis for the public consultation planned for May 1997.

Graphic material for the public consultation.

Ten copies of a draft version of the final report for review and comments by the regulatory and approval agencies.

Ten copies of the final report and one unbound original.

The report should document succinctly all aspects of the study including:

Agency and public consultation results; background research and review, baseline conditions, new data and analysis on fish spawning and water quality monitoring, proposed land use concept, methodology and approach, modelling and simulations, stormwater drainage alternatives and analysis, potential environmental impacts and mitigation measures, conclusions and recommendations.

Drawings at a 1: 2,000 scale to illustrate the various elements of this study should be provided for the progress report, draft and final reports. An NCC digital file of the subject area in AutoCad DXF format will be available upon request. The NCC will require that the digital file be returned at the end of the project with the added information provided by the consultant, and with the original NCC co-ordinate values.

The progress report, the draft and the final reports are to be produced in English. A French-English bilingual executive summary of the study should appear at the beginning of the final report. Graphic materials for the public presentation must be bilingual. Relevant technical information, and raw or computer generated data should be included in appendices.

PROJECT MANAGEMENT

Project management for this study will be lead by the NCC LeBreton Flats Project Team, and in particular by Livain Michaud, Project Officer for this study. Continuous contact with the other agencies (MOEE, MNR, RVCA, RMOC and City of Ottawa) will also ensure the success of this study.

PROPOSAL

The proposal is to include: curriculum vitae's of personnel who will be directly involved in the project, a clear and concise statement of the proposed approach, additional data/monitoring/testing proposed, schedule, allocation of human resources, a total upset cost, a cost breakdown for the work to be performed including unit costs for each task and optional tasks, an estimate of expected disbursements and per diem rates for the proposed personnel. It is very important in this cost proposal to clearly identify a cost breakdown for each task and for each optional task that may be required.

For the engineering component of the study, the firm must be qualified to practice engineering in Ontario and must have staff member of the Association of Professional Engineering of Ontario.

BACKGROUND REPORTS

This study shall build upon studies already undertaken for LeBreton Flats. A copy of the 1991 Novatech report and the Lebreton Flats concept brochure are provided as part of this package. The remaining studies listed here and other related studies can be consulted at the NCC during normal business hours. They are as follows:

Ainley Graham and Associates Limited. 1993. *LeBreton Flats Development Infrastructure Needs Assessment Study*. National Capital Commission. 25p + Appendices (+ 1997 update).

Beauchemin - Beaton - Lapointe Inc. 1990. *Inventaire des composantes environnementales du Secteur central ouest*. National Capital Commission. 104p + Appendices.

Beauchemin - Beaton - Lapointe Inc. 1991. *LeBreton Flats / Bayview Concept Plan : Initial Environmental Evaluation - Final Report*. National Capital Commission. 77p + Appendices.

Ecological Services for Planning Ltd. 1996. *Ecological Inventory of the LeBreton Flats*. National Capital Commission

Jacques, Whitford Limited. 1996. *LeBreton Flats Aqueduct Sediment Sampling*. National Capital Commission.

Jacques, Whitford Limited. 1996. *LeBreton Flats Aqueduct Assessment of the Aquatic Habitats*. National Capital Commission.

Marshall Macklin Monaghan Ltd. 1994. *Stormwater Management Practices Planning and Design Manual*. Ontario Ministry of the Environment and Energy.

M. M. Dillon Ltd. 1996. *Class Environmental Assessment Pilot Stormwater Guidelines*. Surface Water Quality Branch, Regional Municipality of Ottawa-Carleton.

National Capital Commission. 1994. *LeBreton Concept Brochure*

National Capital Commission. 1994. *The LeBreton Project - Initial Environmental Evaluation Addendum*. 39p.

National Capital Commission. 1996. *Stormwater Management Manual*. 6p.

Novatech Engineering Consultants Ltd. 1991. *LeBreton Flats Stormwater Management Study - Final Report.* National Capital Commission. 19p + Appendices.

Raven Beck Environmental Ltd. (now Intera Consultants Ltd.) 1994. *Preliminary Remediation Feasibility Study - LeBreton Flats, Ottawa.* National Capital Commission. 108p. + Appendices.

Annex 8

Summary of Land Conveyances: LeBreton Flats Master Land Agreement

The following lists the conveyances of land which will occur between the NCC, the City of Ottawa and the Regional Municipality of Ottawa-Carleton, following the approval of Official Plan Amendments.

Lands will be conveyed by the National Capital Commission to the Regional Municipality of Ottawa-Carleton for:

i) widenings of regional road rights-of-way along Booth Street from Albert Street to the Ottawa River, and along Scott-Wellington-Albert Street, in accordance with the right-of-way widths specified in the Official Plan Amendment;
ii) the Transitway realignment project, including lands required for the Booth Street Bridge and transit station, and the bus lay-up, in accordance with the terms of the Land Agreement and the OPA approvals;
iii) lands east of the Transitway, south of the forebay to the aqueduct, west of Commissioner Street and north of Albert Street (termed "Parcel A");
iv) lands comprising the tailrace waterway, from north of Pooley's Bridge to the south side of the culvert.

Lands will be conveyed by the Regional Municipality of Ottawa-Carleton to the City of Ottawa for:

i) the portion of the Broad Street Bridge owned by the Region.

Lands will be conveyed by the Regional Municipality of Ottawa-Carleton to the National Capital Commission for:

i) Duke Street between Booth and Fleet Streets;
ii) Fleet Street east of Booth Street;
iii) Wellington Street between Scott-Albert and the realigned transitway east of Booth Street;
iv) lands lying along the north and south sides of the aqueduct.

Lands will be conveyed in fee simple by the City of Ottawa to the National Capital Commission for:

i) Broad, Oregon, Duke (part), Sherwood, Ottawa, Lett (part), Fleet (part), McAuliffe, Montreal, and Pooley Streets;

ii) portions of old lanes crossing the aqueduct.

Lands will be conveyed in fee simple by the City of Ottawa to the Regional Municipality of Ottawa-Carleton for:

i) Hill Street, and parts of Broad Street, Lloyd Street, Lett Street, and Wellington Street;
ii) portions old lanes crossing the aqueduct.