

An Urban Design Proposal
for the CP Rail Yards
in
North Bay, Ontario

by
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in partial fulfillment of the requirements for the Degree of

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ABSTRACT

The railway companies have played a formative role in building our nation. Many towns and cities across Canada grew up around a railway station. Many tracks and railway lands are located along the shores of lakes or at the junction of rivers thus forming a barrier between the community and its waterfront. Now, as the transportation industry changes, many railway stations and maintenance yards have become obsolete and we are faced with the opportunity to rethink how these lands and buildings can be reurbanized.

This practicum looks at reurbanizing the CP Rail lands on the waterfront of North Bay, Ontario. The railway lands and other available industrial lands now occupy about 70 acres of property between North Bay's downtown core and Lake Nipissing's waterfront. The railway station is no longer used for passenger travel since the VIA route was discontinued through North Bay.

The intent is to develop an urban design plan for the the railway lands that would best serve the citizens of North Bay in the future. The urban design study has two goals. The first is to look at creating an urban focus for the downtown area and a strong link between Main Street and the waterfront. The second goal is to propose a pattern of urbanization that is based on more viable and sustainable urban design practices that could become the building block of a more environmentally benign city. The New Urbanism was chosen as a model for the urban design for its compact use of land, diversity, pedestrian scale and public identity. With its use of traditional town planning principles, the New Urbanism model will blend in well with the existing urban patterns and scale of the downtown context.

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INTRODUCTION

A. Scope of Study

This practicum is an urban design study for the reurbanization of 70 acres of industrial land in downtown North Bay, Ontario (see Figures 1 & 2 on page 1-2). The study site is located directly between the downtown core and Lake Nipissing. It encompasses the Canadian Pacific Railway maintenance and shunting yards. CP Rail's main rail line currently travels through the study site parallel to the lakeshore effectively forming a barrier between the downtown core and the waterfront.

Recently the Canadian Pacific Railway has made major changes to its eastern rail line between Sudbury and Ottawa. Most of their rail traffic has been rerouted south from Sudbury to Toronto and therefore significantly fewer trains are travelling through North Bay along the CP Rail line. As a result the CP Rail station and maintenance yards are no longer necessary for CP Rail's operations. The City has entered negotiations with the rail company to have the maintenance yards and line removed and to have any rail traffic redirected to the CN line.

For the purpose of this study, the assumption has been made that the rail line and yards will be removed and

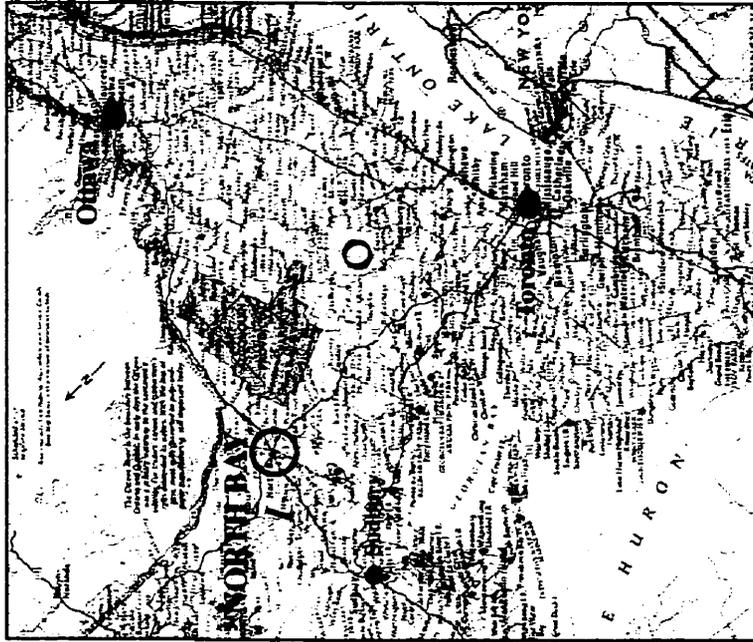
the land will become available for redevelopment. Freeing this land for reurbanization provides a rare opportunity to infuse new life into the core of the city and to redirect future development to the city centre, thereby alleviating development pressures on the environments surrounding the city. It also provides an opportunity to look toward the future and propose a new model for the design of our communities which addresses the issues of how our patterns of settlement affect the environment, our economies, and our sense of community. The structure of our physical communities can be more environmentally benign places to live.

The study is guided by two directives. The first is to address the design issues that are inherent to this specific site. The second is to apply a pattern of urbanization that is based on more viable and sustainable urban design practices than current patterns of outward growth and suburbanization.

The site is in a prime downtown location, being adjacent to the existing waterfront parkland and the Main Street shopping district. With the removal of the railway yards and line, this "freed land" in the heart of downtown offers an opportunity to create a public focus and strengthen the sense of community in the down-

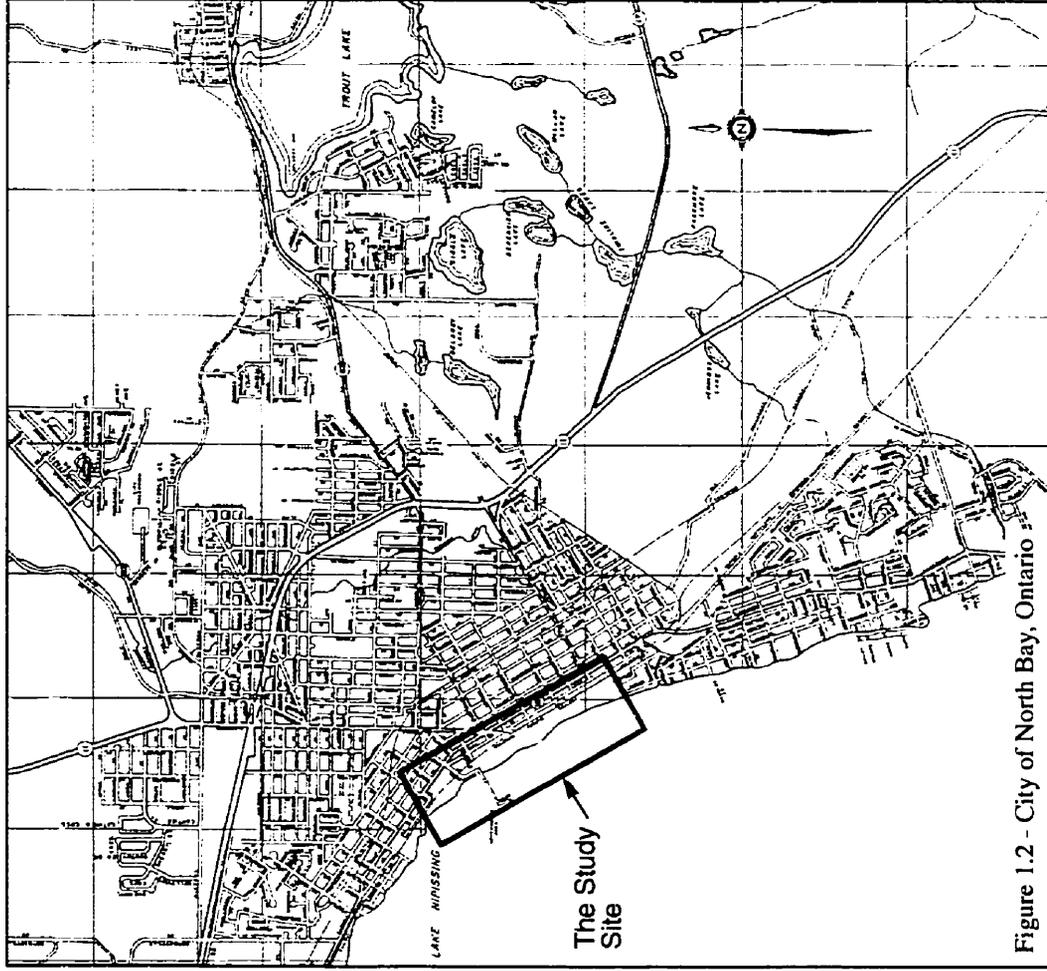
town area. With so many amenities nearby, this area will be a desirable place to live. In addition to creating a strong central focus for downtown, the study will address the need to provide more housing in the downtown area. The intent is to introduce a compact urban neighbourhood that is mixed-use, transit-oriented, walkable and diverse. Providing housing downtown will offer residents the opportunity to live within walking distance of most of their daily activities and thus rely less on the automobile. It will also help alleviate some of the pressure to expand housing developments into ecologically sensitive areas within the city such as the escarpment, Trout Lake shoreline, and the numerous wetland areas.

New Urbanism has been selected as the model for the development of the area. The following section discusses the principles and characteristics of New Urbanism communities that can be applied as an infill strategy for the CP Rail lands. Section Three is a contextual overview giving background information on North Bay and the study area. Section Four illustrates the site analysis of the study area and vicinity. Section Five discusses the site specific design issues gleaned from the site analysis, and details the site programming. Section Six illustrates the urban design master plan, design strategies and phasing implementation.



Source: National Geographic

Figure 1.1 – Map of Ontario



Source: Environmental Economic Atlas of North Bay and Area

Figure 1.2 - City of North Bay, Ontario

NEW URBANISM PRINCIPLES

A. Sustainable Urban Design Issues

One of the first objectives for this study is to propose a model for an urban neighbourhood that is more environmentally benign than our current practices of city planning. The intent is to create an urban neighborhood which offers people the opportunity to live in a lively urban setting and live more sustainably by consuming less resources and placing less pressure on the environment.

This section introduces the issues and describes the characteristics and objectives of sustainable urban design. They have been organized into three key areas of urban form, access/transportation, and the public commons.

1. Urban Form

The North American model for urbanization has been shaped by the misconception that energy and land are limitless. Today that myth has collapsed and we are seeing that nature's resources are finite and that our current lifestyles based on consumption and waste can no

longer be supported. Current urban planning concepts routinely employed in subdivision design continue to perpetuate a lifestyle which we are no longer able to sustain. Sprawling modern subdivisions with their consequent dependence on the personal automobile have inadvertently contributed to today's more far reaching environmental problems (Richardson, 1989).

The spatial extent of our cities has expanded and dispersed, consuming land and resources. This puts an unwarranted pressure on our land resource base for housing. Sixty percent of Canada's existing housing stock is made up of single-family detached dwelling units (D'Amour, 1991) which typically require more land to accommodate a given population than other forms of housing. Residential land uses, which are predominantly suburban, consume over fifty percent of the total area of a typical Canadian city (D'Amour, 1991). Along with the roads they necessitate and the auto-oriented shopping malls they tend to encourage, our living arrangements account for over 70% of land use in cities (Hodge, 1986).

The resource and energy intensity, and economic costs of the infrastructure required to service prevailing residential development patterns is not sustainable in the

long run. A single-family detached house requires at least four times more linear infrastructure per unit than a duplex (Richardson, 1990). Low density communities are less economical to service municipally. The provision of municipal services such as water, sewers, ambulance, police, snow removal and public transportation is simply less efficient in low density developments and therefore it is more costly per capita. With shrinking civic and provincial budgets for maintenance of existing infrastructure it seems prudent to look at ways of reducing our costs by building more compact and resource efficient neighbourhoods.

2. Access/ Transportation

Suburban living arrangements have encouraged, and often necessitated massive car ownership throughout Canada. Transportation is a major area of concern when looking at environmental degradation. Second only to industry in its consumption of energy, transportation accounts for one quarter of all energy used in Canada and the personal automobile is responsible for 51% of that share (Troyer/Moss, 1989). Transportation is also the country's largest source of air pollution. Every year 13.6 million tonnes of noxious fumes are released into the atmosphere, poisoning forests and lakes, contribut-

ing to global warming, and endangering human health (Troyer/Moss, 1989). According to Environment Canada, transportation sources produce 64% of total nitrogen oxides (a major cause of acid rain), 42% of hydrocarbons and 66% of carbon monoxide (both of which cause smog), 32% of the lead, 30% of the carbon dioxide, and 76% of benzene -a carcinogen (Troyer/Moss, 1989).

Our dependence on cars for personal transportation is the primary threat to sustainable development due to the immense resource demands of the car itself - both in its manufacture and its operation - and the effects of the car on our settlement patterns. With the decentralization and expansion of the urban environment (that was made possible by the introduction of the car in the first place) urban dwellers are forced to travel long distances between their daily activities, usually alone, and necessarily by car. Consequently the car places enormous spatial demands on cities in terms of roads and parking requirements. Therefore the development of supportive, enjoyable places for walking and the public life that accompanies walking, is one of the crucial challenges for making sustainable communities.

3. Public Commons

There is a lack of meaningful shared spaces in our cities. Since the introduction of the automobile, urban life has dispersed and the joys of our urban streets have

been ruined. Pedestrian streets and squares have been reduced to parking lots and throughways, public spaces have become anonymous places that lack identity, and the individual has become socially isolated as a result of the decline of public life (Kunstler, 1993).

Citizens of a community must have shared experiences, places that foster special rituals where large parts of the community come together in common pursuit, celebration and observance; places that support multiple public activities, encourage safe, everyday personal exchanges such as a main street where citizens share daily activities and the sense of community is enhanced (Hester, 1995).

B. Principles of New Urbanism

Recently several urban design movements have emerged which attempt to address the need to find an approach to building cities that is less consumptive. Collectively these movements are known as The New Urbanism. The leading authorities on New Urbanism are:

- Traditional Neighbourhood Design
– Duany Plater-Zyberk;
- Transit Oriented Development
– Peter Calthorpe;
- The Urban Village: Seattle's Urban Planning initiative - David Sucher;

- Sustainable Urban Design – The Guide to Sustainable Settlements, published May, 1995 jointly by the University of the West of England and the Local Government Management Board.

As described in the sources above, the following is a summary of the five main principles that New Urbanism promotes:

1. Neighbourhoods that are compact and walkable, and provide for a balanced mix of activities;
2. Increased residential densities and the provision of mixed use facilities in a range of low-rise building types;
3. The need to reduce the reliance on the automobile and enhance provisions for walking and public transit;
4. People-oriented communities to maximize human interaction;
5. The creation of places people will care about by enhancing public spaces and creating greater neighbourhood identity.

1. Social Objectives and Benefits of New Urbanism:

1. The compact organization makes public transit viable, and reduces the requirements for infrastructure, automobile use and its associated pollution. The cost of owning and operating a vehicle can represent a large financial burden on lower income households. Reducing car usage dependence lowers auto related expenses and also reduces the demand for fossil fuels and reduces air pollution.
2. Pedestrian and public transit systems are more efficient in per capita use of resources. They support compactness, higher densities, and mixed uses, all of which can lead toward radical reductions in resource use.
3. The provision of most of the necessities of daily life within walking distance gives the elderly and the young greater independence of movement.
4. The full range of housing types and workplaces helps to integrate all age groups and economic classes and provides opportunities to form the bonds of an authentic community.
5. Energy efficient housing stock reduces fuel poverty and helps ensure warmth, in addition to cutting fuel use and pollution.
6. An attractive, safe and well supervised pedestrian environment can contribute to social stability and the creation of a sense of community. The provision of comfortable public places allows residents to come to know each other which enhances their sense of personal safety. By creating neighbourhoods where walking is the natural and pleasurable means of access between activities, walking becomes a social activity in its own right. Thus the increased number of people on the streets and paths further heightens the collective security of the neighbourhood. The quality of the walking routes is a significant factor influencing usage.
7. Improving the local environment, reducing traffic and making walking more pleasant, enhances health and aesthetic enjoyment as well as reducing polluting emissions.
8. By creating a pedestrian oriented neighbourhood and focusing on providing attractive public spaces, neighbourly interactions that make residential areas safe and attractive will be encouraged. Traffic jams, car accidents, smog and the acceleration of global warming will be reduced.

2. New Urbanist neighbourhoods share the following physical characteristics:

Compact, Contained and Focused

1. The neighbourhood area is limited in size, and is physically articulated with an edge and a focused centre. This combination of a focus and an limit contributes to the social identity of the community. The optimal size of a neighbourhood is 1/4 mile from centre to edge, a distance equal to a five-minute walk. Most of the dwellings are within a five-minute walk of the centre. Transit stops are located within walking distance of most homes.
 - The centre is always a public space – often a square or green, or an important street intersection – located near the middle of the neighbourhood. The centre is the focus of the neighbourhood's public buildings, shops and workplaces. Buildings at the neighbourhood centre are placed close to the street. This creates a strong sense of place. A transit stop would also be located at the centre.
 - Each neighbourhood's centre is defined by a public space and activated by locally oriented civic and commercial facilities. Their form and image are strengthened by surrounding building form, architecture and street patterns.
 - Urban rights of way such as rail lines

and boulevards typically divide communities so they are best used to define the edges of the neighbourhoods rather than transect them.

Public Space

2. The neighbourhood gives priority to public space and to the appropriate location of civic buildings. Public spaces and buildings enhance community identity and foster civic pride. The neighbourhood plan creates a hierarchy of useful public spaces: a formal square, an informal park, and playgrounds. Certain prominent sites are reserved for civic buildings. Buildings for meeting, education, religion, or culture are located at the termination of the street vistas or at the neighbourhood centre.
 - The majority of buildings are good, solid background buildings. They are used to create a backdrop to the streets and public spaces. Only a few unique, memorable buildings need to be focal points.
 - Well-placed civic buildings act as symbols of the community identity and provide places for purposeful assembly.
 - Squares and parks are distributed and designed as specialized places for social activity and recreation.
 - Architecture responds to the surrounding fabric of buildings and spaces and to

local traditions. Buildings are not conceived as objects isolated from their surroundings but contribute to the spatial definition of streets, parks, greens yards and other open spaces.

- Building size and character is regulated by the spatial definition provided by the streets and squares.

Mixed Use

3. The neighbourhood has a balanced mix of activities: shops, work, school, recreation and dwellings of all types. This is particularly useful for young, old and low income populations who, in an automobile-based environment, depend on others for mobility. The neighbourhood provides housing for residents with a variety of incomes. Affordable housing types include backyard apartments, apartments above shops, and apartment buildings adjacent to workplaces.
 - The neighbourhood is conceived as a place for living, shopping and working.
 - Each neighbourhood accommodates a range of household types and land uses.
 - Shops, workplaces, schools and residences for all income groups are located in close proximity.
 - Building types are varied enough to accommodate a range of activity and be adaptable to different uses.

- Houses are interspersed with apartments of different sizes.
- Zoning of building types reflects the principle of integration rather than separation of uses.

Reduced Auto Dependency

4. The compact organization and mixed use zoning significantly reduces dependency on the automobile. To further enhance the ease of access, the neighbourhood is broken down into blocks on a network of small thoroughfares. Streets are laid out to create blocks of appropriate building sites and to shorten pedestrian routes. An interconnecting street pattern provides multiple routes which diffuses traffic. This pattern keeps local traffic off regional roads and through traffic off local streets. Streets are sized and detailed to serve equitably the needs of the automobile and the pedestrian. The streets are relatively narrow and shaded by rows of trees. This slows down the traffic, creating an environment for the pedestrian and the bicycle. Parking lots and garage doors rarely enfront the streets. Parking is relegated to the rear of the buildings, usually accessed by alleys. Slowing the automobile down and increasing pedestrian activity encourage the casual meetings that form the bonds of community.

- streets and squares are the primary public spaces and facilitate vehicular and pedestrian movement.
- Blocks generally are no larger than 230 x 600 feet.
- New streets connect whenever possible to existing streets.
- Street layout reflects the character of the land and the designer's efforts to make a memorable network.
- Streets are a place where pedestrians feel comfortable as well as provide for automobile travel.
- Parallel parking is used to protect pedestrians by creating a barrier between the sidewalk and the street traffic.

C. Design Strategies Based on New Urbanism Principles

Medium Residential Densities:

- Provide residential densities that are greater than present suburban standards such as row housing, garden apartments - 4 story maximum; small houses, zero lot lines; thus reducing building, operating and servicing costs.
- Preferred densities for transit are 20 to 30 dwellings per gross acre - gross acreage includes private and public lands.
- At 30 dwellings per gross acre the average land area per dwelling is about 1000 square feet which is pretty tight by Canadian standards. Mixing dwelling types means some larger family dwellings are balanced by smaller one or two person units. The average family dwelling site, for three to five occupants will still be only 1500 to 2000 square feet.
- Provide housing that addresses changing socio-demographic needs – increase in smaller households of one to two persons, single parent families, aging population.
- Row housing is the most viable dwelling type for families with children - balances compactness with ground level access and

household autonomy, and is workable at these middle densities.

Let uses overlap

- Mixed use neighbourhoods are often more resilient, stimulating and interesting than single-use neighbourhoods - just as natural ecosystems are healthier and more resilient than monocultures.
- Bring work, recreation, shopping, and living within walking distance of each other.
- Provide a variety of housing types at various costs, densities, and in convenient locations.
- Incorporate places of work with housing, i.e. home offices, cottage industries, apartments above shops.
- Shopping and housing can coexist close together if their conflict points are identified. Separate parking areas for residential and commercial tenants in mixed-use buildings to diminish noise and security problems.
- Add daily shopping around transportation hubs to provide a convenience for commuters. This makes taking public transit more feasible; one can shop in the course of returning from work.

Optimize for the Pedestrian and Social Interaction

- Land use patterns, street layouts and densities should make walking, bicycling and public transit viable alternatives to driving, especially for routine, everyday trips. Streets should be safe, interesting and comfortable for pedestrians.
- Give the streets back to people by using wider sidewalks, tree planting, and providing places for relaxing and socializing.
- Design streets with lighter, slower traffic flow and wider sidewalks to create an extension of the residents' 'home' space.
- Mitigate the impact of automobiles with traffic calming measures.
- Pedestrian Network -
 - pedestrian permeability and access;
 - note key pedestrian desire lines;
 - paths through squares and parks;
 - mid-block pedestrian alleys;
 - street and sidewalk system.
- Build neighbourhoods for the social stroll allowing people to walk together.
 - They shouldn't have to drive to find a place to walk.
 - Social exercise - chatting, watching other people and being watched.
 - Continuity - create a path which forms a continuous loop - sense of departure and arrival. The route should be clean, routine and automatic. Decisions on direction shouldn't interrupt conversation.

- Length - not too long; people should pass each other more than once.
- Width - path should be wide enough for two groups to pass each other without awkward rearrangement.

“Access by proximity, not transportation”

- Strive to make most daily destinations such as work, shopping, recreation and cultural activities, within walking distance from the home.
- A five minute walk or a quarter mile on flat terrain is the maximum for easy walking between home and essential daily activities. If walking is perceived as a positive experience in itself, people will walk much farther.
- Public transit should be convenient and also within walking distance from the home.

“Green” Transportation

- Expand opportunities for alternative modes of transportation, such as provisions for walking, cycling and more efficient public transport systems.
- Encourage walking and public transit as the primary means of transportation for daily activities.
- The neighbourhood should have a pedestrian focus thus reducing the use and need for

driving. Strive to make the car unnecessary for daily activities.

Traffic calming

Traffic calming is a set of techniques of street design which involves a variety of small modifications to street geometry and dimensions to accommodate the automobile and to give the pedestrian the psychological precedence.

- Reform the environment - not the person.
- We speed because roads are designed to allow us to do so.
- There is a natural speed for any given road configuration - sight lines, lane width and shallow curves. Use these design elements to moderate vehicle speed.
- Design streets so drivers may travel but cannot feel superior to pedestrians.
- Let cars and people mix - don't ban cars but calm them.
- Give more physical space to the pedestrian.
- For pedestrians to move safely and comfortably, cars must travel at slower speeds of 30 km/h or less.

Human Scale:

- Definition of human scale: a place where the ability to have a conversation is allowed by the very size of the space.
- Design outdoor, neighbourhood spaces around the pedestrian.

- Design streets for human comfort and enjoyment instead of solely for automobile speeds of 50 kmh and fire truck radii requirements.
- Build close to the sidewalk. Ensure that each building along the street has an open, appealing ground level.

Consider the street environment as a public amenity

- New buildings should reinforce public and social spaces like streets and squares. They should be human in scale.
- Design public spaces with winter in mind. Address the combined effects of wind, sun exposure, precipitation and air temperature in an attempt to maintain human comfort through the composition of landscape and built form.

Socialability of public spaces

- Design social spaces – squares, courtyards, streets that have a neighbourly cooperative nature.
- Propose more convivial public spaces such as public squares and pedestrian streets.
- Provide public seating.
- Let people purchase food or drink.
- Offer a conversation piece - art in public places; providing an external object on which to focus opens up conversations between strangers.

- Put public space in the sun. Too much sun is better than too little. Shade can be provided with awnings, trellises.
- Encourage the chance encounter. Cities designed to be sociable will be at the advantage in the economy of the future - from convention centres to the design of sidewalks.
- Provide a place for music - small amphitheatres, concerts at noon, buskers. It should be close to but off the main pedestrian traffic route – a space for people to stop and listen.

The creation of community

- Emphasize public open spaces to create an identity for the neighbourhood.
- Emphasize the importance of the public domain in its relation to neighbourly interaction and cooperative efforts.
- The public realm will emphasize a sense of community, not a no-man's land.
- Develop shared spaces or common grounds to reestablish community and identity.
- Create public spaces with seats - one can create a public realm by simply giving people the opportunity to sit and linger.
- Create gateways for neighbourhoods. A gateway as an announcement can create neighbourhood spirit and people feel ownership of their neighbourhood.

Bumping into People

- The city provides a place of contact. It should encourage the unplanned and serendipitous encounters - the accidental meeting is what makes the city a fertile place.
- Create public places such as the bar, the pub, the tavern, the coffee shop, the deli, and in Canada - the donut shop- where one bumps into friends and neighbours in an unplanned manner. Food and drink are essential as well as proximity to home.

CONTEXTUAL OVERVIEW

A. The Site and Context

North Bay is a small city in northern Ontario with a population of 56,000. It is a four to five hour drive from such population centres as Toronto and Ottawa. It was established as a community in the 1880's as an important railway stop for the newly established Canadian Pacific Railway. North Bay has been known as 'The Gateway to the North' and it is the communication and distribution centre for northeastern Ontario. The current city motto is, "Just North Enough to be Perfect" referring to its proximity to southern Ontario and its location in Ontario's 'Near North' wilderness.

North Bay owes its creation to the Canadian Pacific Railway and the foresight of a young land speculator by the name of John Ferguson. In 1882 Ferguson arrived to lay claim to the land that would become the downtown area of North Bay. The town site was chosen by Ferguson not for its building suitability – which was characterized by swampy areas and bedrock outcropping – but for its strategic location as the next designated rail station on the CPR line. When the Canadian Pacific Railway came to North Bay in 1883, Ferguson sold 40 acres of his land holding to the railway for \$2500 for their main railway stop and station. Ferguson

subdivided the rest of his land holding and established the town site of North Bay. He became the town's first mayor.

John Ferguson donated the worst of his lots, which had bedrock outcropping, to various church organizations. This is why St. John's, St. Andrew's and Trinity United Church are built on exposed bedrock. Lots normally sold for \$100 each.

Today the City of North Bay remains surrounded by a wealth of natural resources. It is located on the north shore of Lake Nipissing, a large shallow lake which flows into the French River which connects to Georgian Bay. Trout Lake is located in the eastern part of the city. It is a deep, clear lake and the source of drinking water for the city. Trout Lake connects to the Mattawa River which flows into the Ottawa River. There is a series of wetlands between the two lakes, south east of the city's urban development. Bedrock outcrops and wetlands are characteristic of the area.



Looking southeast from the escarpment

The escarpment, a natural ridge about 500 feet in height, cuts through the north side of the city. It is mostly undeveloped with trails and natural springs and a local ski hill. The North Bay Airport, Nipissing University and Canador College campuses are located above the escarpment. Algonquin Avenue dramatically descends down the escarpment into the downtown from the north.

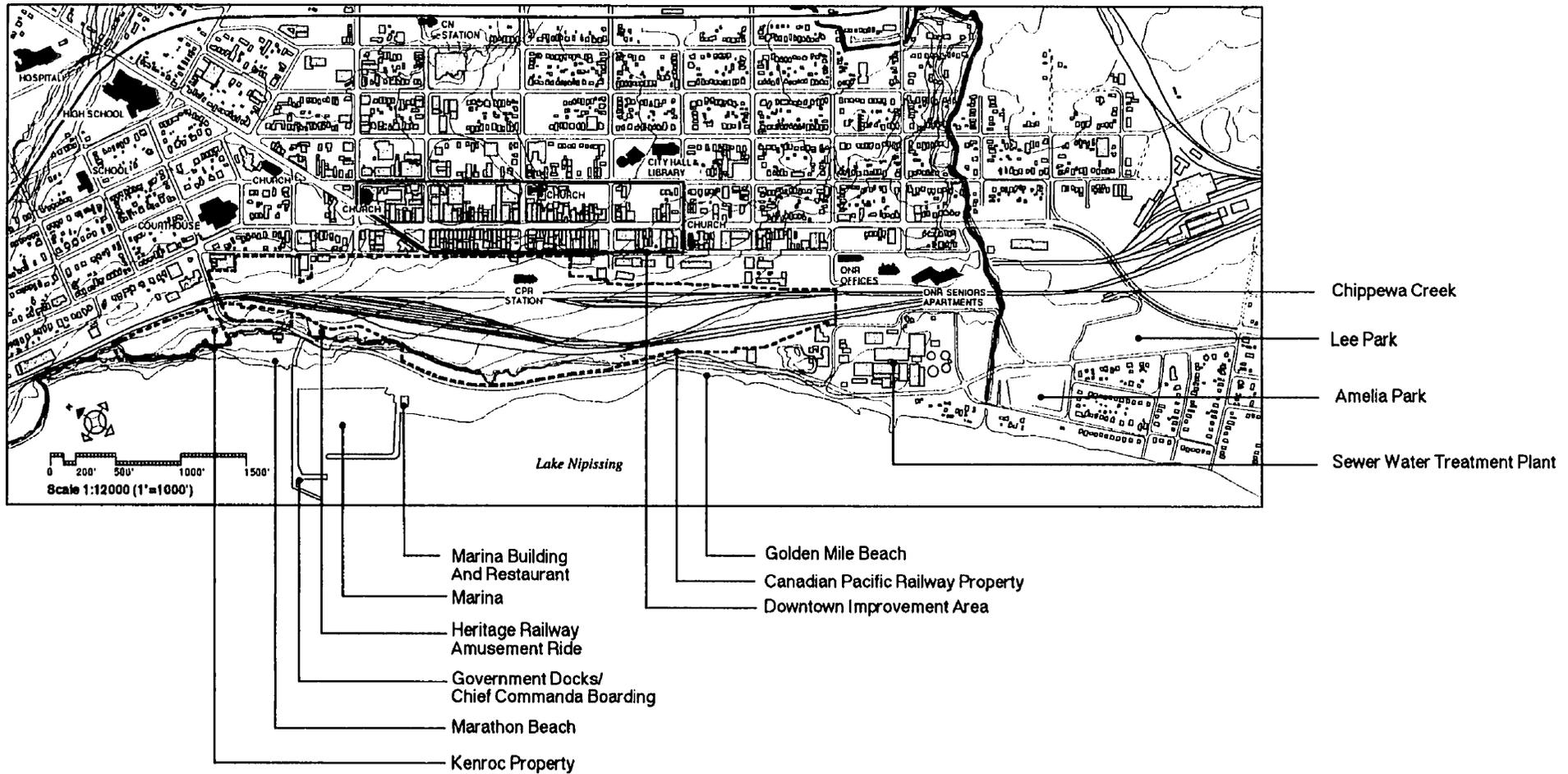


Figure 3.1 – STUDY SITE AND SURROUNDING CONTEXT

Most of the buildable land within the city core has been developed. There is pressure to develop along the escarpment and around Trout Lake, but so far these natural areas have been preserved.

Historical Timeline:

- 1610 Etienne Brule, Champlain's forerunner, becomes the first white man to visit the Nipissing area;
- 1615 Samuel de Champlain arrives at Lake Nipissing;
- The Nipissing Passage Waterway Route and Fort Laronde was used for the fur trade up until 1825;
- February 15, 1881 –formation of the Canadian Pacific Railway by Parliament;
- June, 1882 –the first spike - construction of the CPR begins seven miles east of North Bay;
- 1883 the Canadian Pacific Railway arrives in North Bay;
- The Grand Trunk Railway, which had several lines in southern Ontario builds a feeder line from Toronto to join up with the new CPR line. The junction point is just outside North Bay. This line eventually becomes the Canadian National Railway;
- 1891 North Bay is incorporated as a town with a population of 1726 and an area of 500 acres. At that time it was serviced by

two railroads, the CPR and the Grand Trunk Railway out of Toronto.

- 1905 –the Temiskaming and Northern Ontario Railway was established. It travelled from North Bay north to James Bay. It is now the Ontario Northland Railway which has its head office in North Bay. The ONR now travels south to Toronto.
- 1925 North Bay became the first city incorporated in Northern Ontario. The population was 13,011 and it encompassed 2100 acres.
- May 28, 1934 birth of the Dionne Quintuplets puts North Bay on the tourist map.
- 1968 North Bay amalgamates with the townships of Widdifield and West Ferris and expands to 135 square miles.
- 1989 - North Bay loses VIA passenger train service due to cuts by the Federal Government.
- present- CPR downsizes its eastern operations. Trains are rerouted south from Sudbury to Toronto resulting in fewer trains travelling east through North Bay to Ottawa/ Montreal.

Recent Events - The Proposal for the Relocation of the Railway Lines and Yards:

The country's two major rail lines bisect the downtown area of North Bay; The Canadian Pacific Railway main line runs through the city parallel to the lakeshore, and the Canadian National Railway's east-west line travels parallel to Second Street along a raised embankment bridging over through streets. The CPR maintenance yards presently occupy the study site directly between the downtown commercial district and Lake Nipissing forming a barrier between the downtown core of North Bay and the Waterfront Park.

The City is presently negotiating a price for the railway yard land with CPR. Their hope is to buy the land and sell it to various developers. The intention is to remove the CP Rail main line from the waterfront, and redirect CPR trains to the CN main line within the city.

B. The Study Site

The study site consists of approximately 67 acres of land owned by CPR and the City bounded by 9th Street, Golf Street, Oak Street and Memorial Drive as shown in Figure 3. Also included is the former 5.5 acre Kenroc property recently acquired by the City and rezoned for residential or recreational uses.

The study site is influenced by the two areas immediately adjacent to the site which are Main Street Downtown Improvement Area to the northeast and the Waterfront Park to the southwest. (See Figure 3.1)



The CP Rail shunting yards (Paul Chivers, The Nugget, June 3, 1993)

The site is within walking distance of the central business district which contains the majority of North Bay's employment, shopping, entertainment, restaurants and personal businesses. The waterfront parkway offers a wide variety of recreational opportunities which are also within walking distance of the site.

Former Kenroc Properties

- Kenroc Tools was established in 1941 and manufactured mining and construction accessories such as tungsten carbide drill bits.
- The parent company, Atlas Copco of Sweden, closed the company in August of 1994 because of a downturn in the mining business.
- The City purchased the property for \$500,000 in the Fall of 1995 and the buildings have been demolished
- The 5.5 acre property abuts the city-owned waterfront land and overlooks Lake Nipissing. One acre of the property is located on the east side of Memorial Drive which was used for employee parking.

The CPR Yards:

- The CPR station was used for passenger travel up until 1989 when VIA Rail service was cut back and passenger trains no



Canadian Pacific Railway Station in North Bay, Ontario

longer went through North Bay. The station is now used by maintenance workers.

- The locomotive shops – a major source of employment for the town used to completely overhaul steam locomotives– were closed in the 1950's.
- The yards are now used for shunting trains, refuelling, and general maintenance.



Main Street looking southeast

Main Street Downtown Improvement Zone

In the early 1980's Main Street was the focus of a major streetscaping project, creating a lively environment for shopping and outdoor cafes. Streetscaping included putting utility lines underground, interlock paving, tree planting, planters, street furniture and lighting.

The Business Improvement Zone includes Main Street from Cassells Street to Sherbrooke Street as indicated in Figure 3.1.

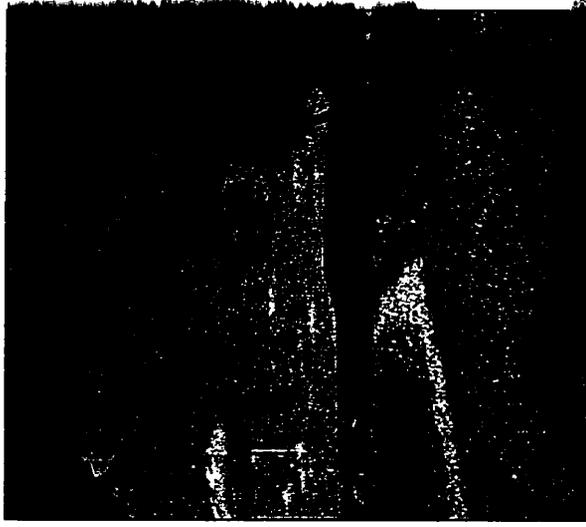
Like many North American downtown areas, it is suffering from competition from suburban malls.

Waterfront Park and Marina

In 1985 a waterfront park was developed expanding the government dock facilities, creating public park space and providing better access to the waterfront. The waterfront park includes:

- Marathon Beach, a supervised public swimming area with a playground, washrooms and picnic area;
- the Government Docks and Marina which includes boat slips, boat launch and docking for the Chief Commanda II tour boat;

- Marina Building and the renovated Chief Commanda I restaurant;
- Memorial Drive and the Kate Pace bicycle path;
- band shell, gazebos, pedestrian paths along the waterfront, landscape planting, and lookout nodes;
- Golden Mile Beach - an unsupervised beach area;
- Lee Park, site of North Bay's Heritage Festival – includes a children's playground, softball and soccer fields



The Waterfront Park looking Northwest

The Heritage Railway Company

- The Heritage Railway Company is a miniature train ride amusement attraction which consists of a miniature steam engine, diesel engine, and a dozen passenger cars which wind along a half mile of track. The project cost about \$150,000 raised mostly through donations for the cars, track, engines and materials to build the rail bed.
- Retired railroaders and inmates at the North Bay district jail volunteered their labour to build the track.

Historical Land Uses in the Vicinity

- The Golf Street area was the industrial centre of town as well as an important recreational area with tourist and water sport areas, golf course, the fall fair ground and the site for travelling circuses.

- The west side of Chippewa creek was the location of a sawmill and planing mill, the "New Ontario Brewery", foundry, slaughter house and railway stock yards.
- CPR crews quarried granite on Main Street which was used to build track beds.
- The original highway into North Bay used to follow Lakeshore Drive and cross the CPR tracks at Golf Street. This crossing was closed off after the overpass connecting Lakeshore Drive and Main Street was built.

Special Events

North Bay Heritage Festival and Air Show:

- annual event held at Lee Park during the August long weekend;
- The festival grounds stretch across the entire waterfront from Judge Avenue in the east to the end of Memorial Drive where the CP Rail tracks cross.
- In 1994 it was estimated that 160,000 people attended the Festival and Air show.
- Typically the 100 block of Main Street, from Wyld Street to Fraser Street is closed to motor traffic.
- Oak Street and McIntyre Street remain open to vehicles throughout the Festival Weekend. Memorial Drive is closed during the festival.

- Parking in the area is restricted during the festival.
- Special bus service is provided to shuttle people who park at Memorial Gardens and Canador College.
- In the past, a stage has been set up in the middle of Main Street to hold activities and the opening festival kickoff. Other events on Main street include sidewalk sales, and farmers markets.

Typical Canada Day Festivities:

- Beach volleyball tournament at Marathon Beach;
- Science North Activity Centre at the Waterfront Park and Rotary Shelter;
- Speeches and presentations by local dignitaries, and local live band performances at the Kiwanis Band shell;
- Parade Route along Memorial Drive ending at Lee Park;
- Fireworks at the Government Docks.

Other Events:

- Several fishing derbies occur throughout the summer.
- Ice fishing huts are set up on Lake Nipissing during the winter.



Waterfront Park Gazebo

SITE ANALYSIS

The following series of analysis drawings show the urban patterns of the downtown area, separated into the urban components of property lots, circulation network, figure/ground, topography, and land use.

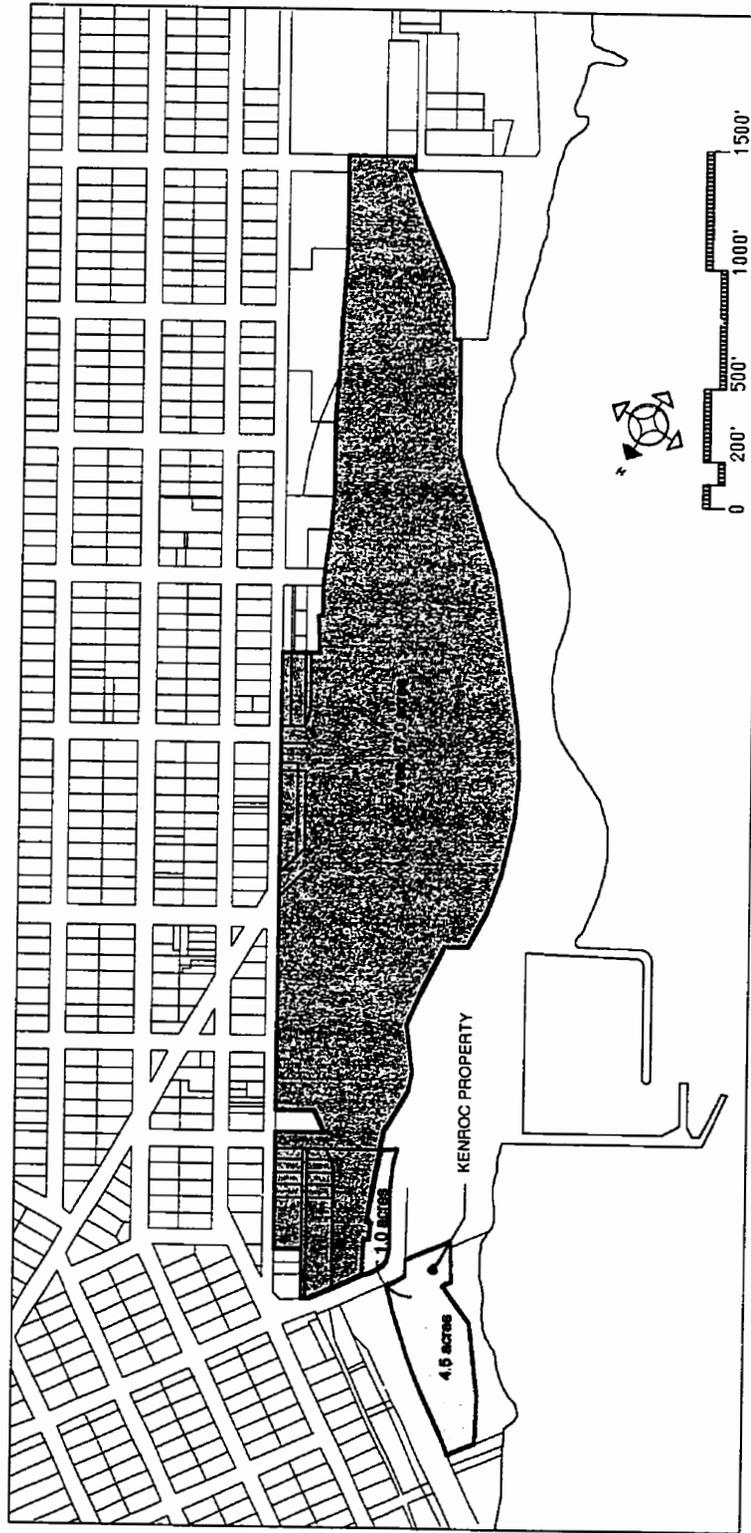


Figure 4.1
PROPERTY PLAN

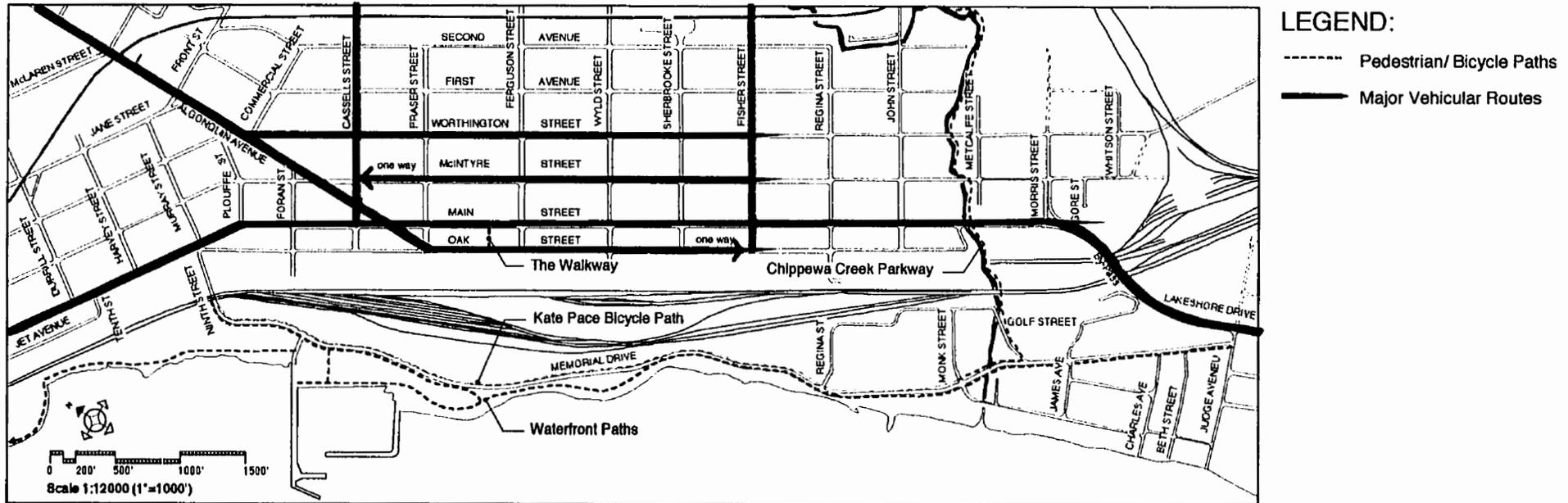


Figure 4.2 – **CIRCULATION PATTERNS**

- The major routes into downtown are Algonquin Avenue, Cassells Street, Fisher Street, Main Street and Lakeshore Drive. McIntyre and Oak Street are one way streets which divert through traffic from Main Street.
- The original route of the Trans Canada Highway used to go through North Bay along Lakeshore Drive then crossed Chippewa Creek and the rail tracks at

- Golf Street before entering downtown. Today there is an overpass built over the tracks which connects Lakeshore Drive and Main Street, eliminating the bottleneck at the Golf Street rail crossing. The Trans Canada By-pass was built to reroute highway traffic around the downtown.
- North Bay has started building bicycle paths in the city. To date, there is a bicycle path along Memorial Drive which is named after local Olympic skier, Kate Pace; and a multi-use path that follows

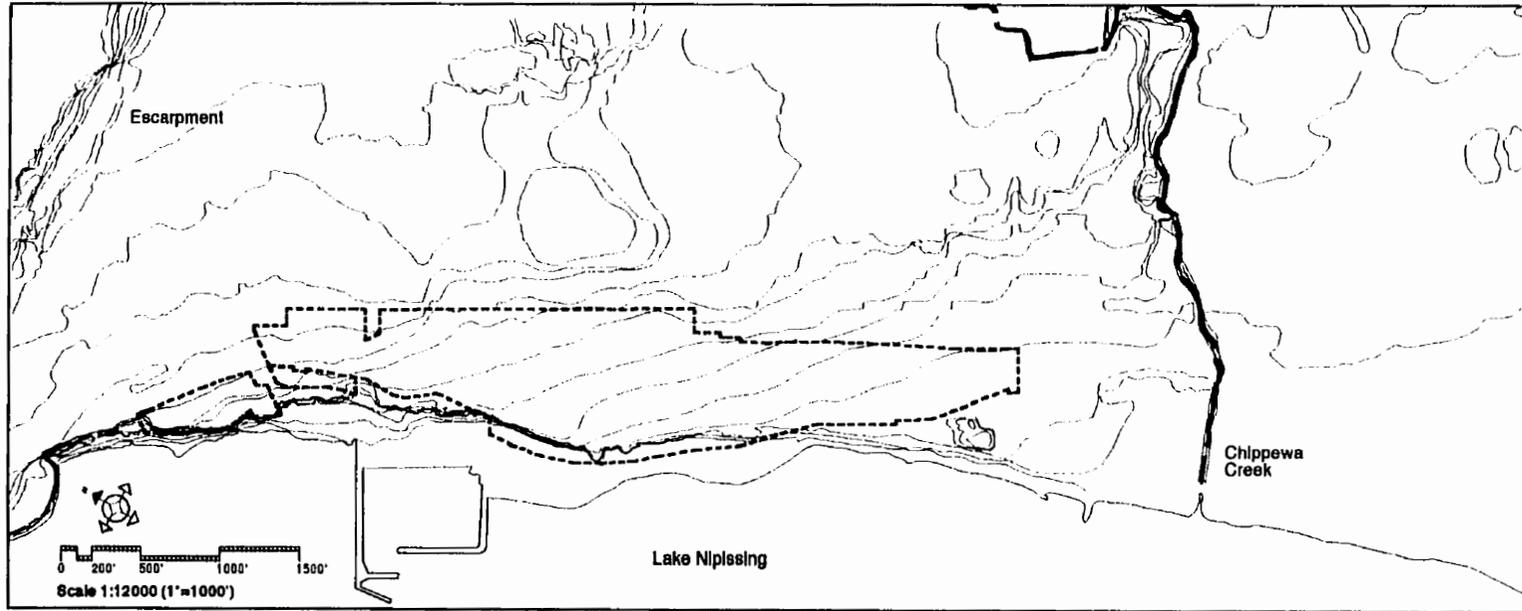
- Chippewa Creek. A pedestrian/ bicycle bridge was recently installed over Main Street to connect the Chippewa Creek path with the Kate Pace path.
- The Walkway is an interior mall that connects Main Street and Oak Street.



Figure 4.3 – **FIGURE GROUND**

- The residential areas are typically two story single family detached houses located on a grid block pattern. Large office buildings of four to seven story height, are located on Worthington Street and McIntyre Street.
- The retail blocks between Cassells and Wyld on Main Street have a distinct character of turn-of-the-century brick buildings

which range between one and three stories. They are built side by side right up to the lot lines with entrances and display windows adjacent to the sidewalk. Retail stores and restaurants are on street level with offices or apartments on the second and third stories.



Contour interval 2.5 feet

Figure 4.4— **TOPOGRAPHY**

- A steep bank delineates the southwest side of the study site along Memorial Drive. It ranges from 25 feet at the northwest to 5 feet at the southeast area of the site. Most of the site is generally flat. The natural vegetation has been kept along the bank north of Marathon Beach but most of the bank along Memorial Drive has been cleared of natural vegetation. Some replanting in the form of large shrub beds has been done.
- The lake shore was built up with land fill to create the Waterfront Park and Memorial Drive between the Government dock and Regina Street.
- There is a large bedrock outcrop northwest of Regina Street along Memorial Drive.

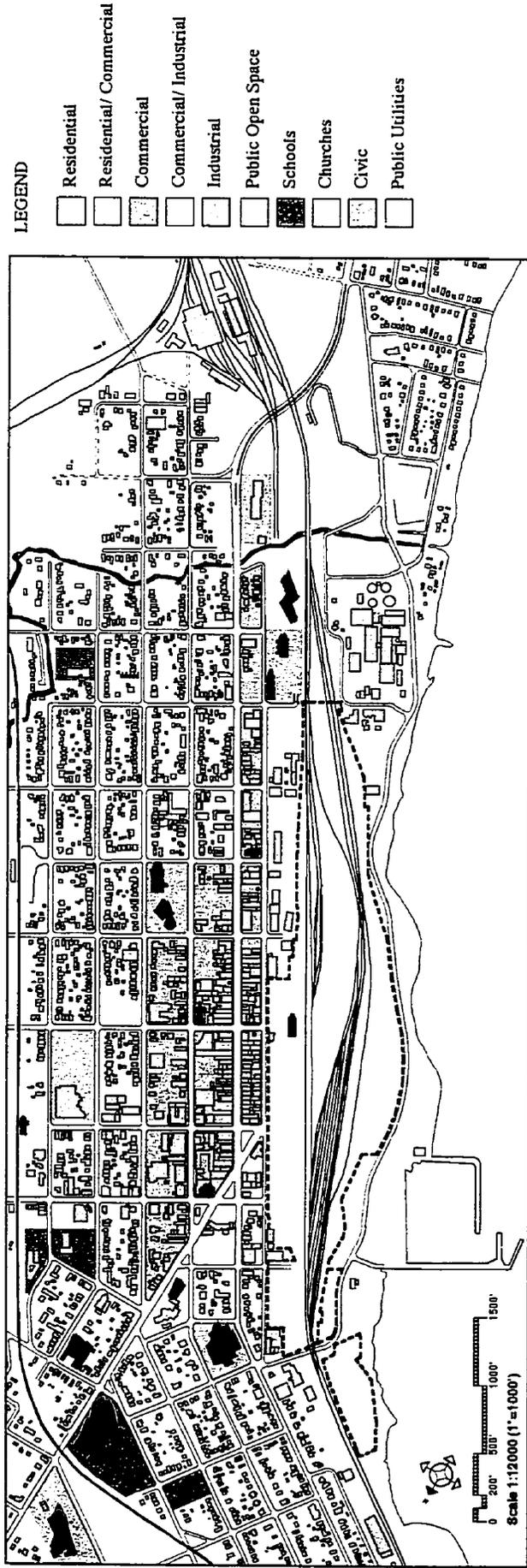


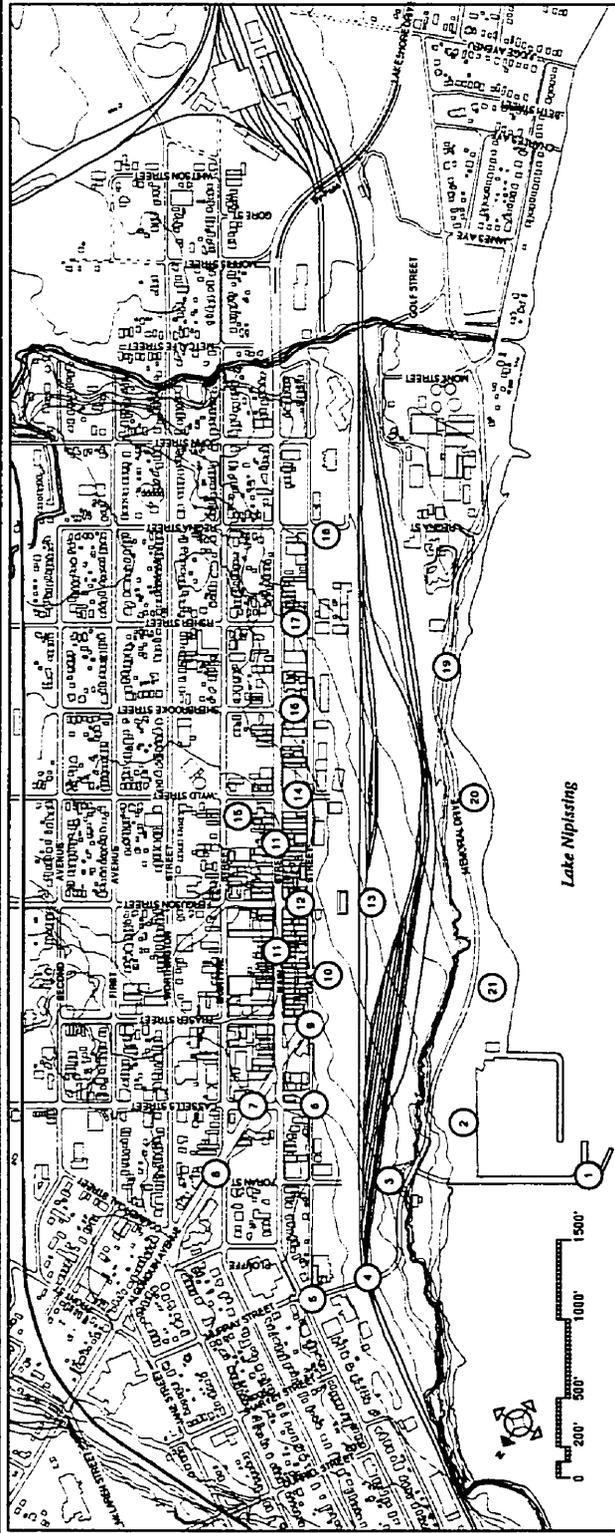
Figure 4.5- LAND USE

- The downtown area is primarily business and commercial land use with some residential apartment buildings.
- Most of the retail shops are located on Main Street between Cassells Street and Sherbrooke Street.
- The residential area to the northwest has some large, well preserved turn of the century houses.

- The Waterfront, Lee Park and Amelia Park provide a variety of recreational opportunities such as playgrounds, sport fields, public beaches, the Chief Commanda tour boat, marina, and the government dock which is a popular fishing spot.
- Located on the rail road side of Oak Street are many businesses that cater to the rail way such as distributing warehouses and building supply stores. Oak Street has a back alley relationship to Main Street. Many of the stores on Main Street have

- back entrances that are accessed from Oak Street. Discount and second hand stores occur along Oak Street between Cassells and Ferguson.
- The land between the tracks and the waterfront is light industrial. The city's sewage treatment plant is located in this area.
- The area to the south is primarily single family residential.

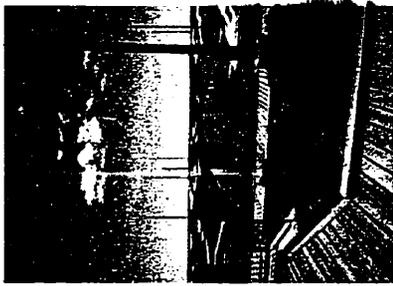
PHOTO INVENTORY



Station 1 - Government Docks



Station 2 –Band Shell and Boardwalk



Station 3 – Foran Street looking northeast



Station 4 – Memorial Drive at Railway Crossing



Station 5 – Memorial Drive at Oak Street and Main Street



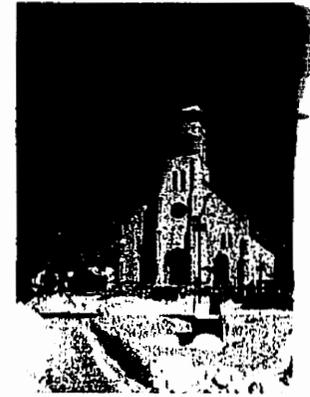
Station 6 - Cassells Street looking northeast



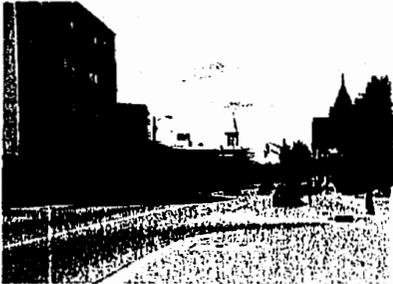
Station 7 – Cassells Street looking southwest and south



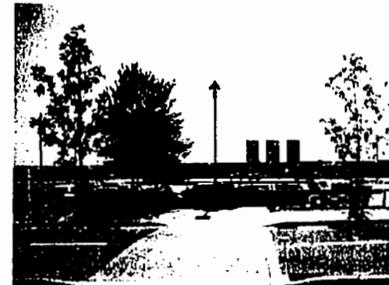
Station 8 – The Cathedral on Algonquin Avenue



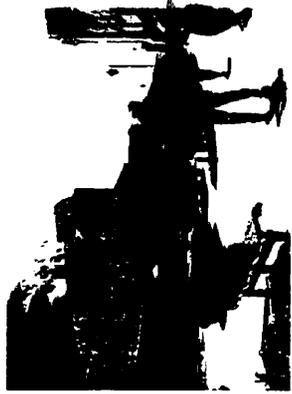
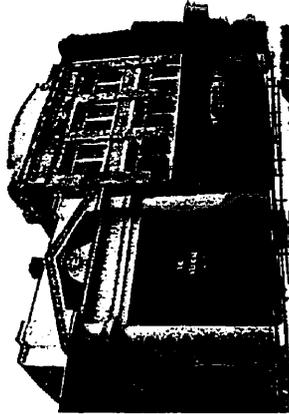
Station 9 – Fraser Street at Algonquin Avenue



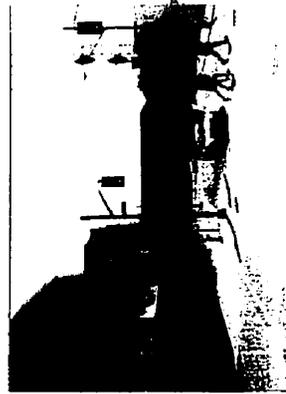
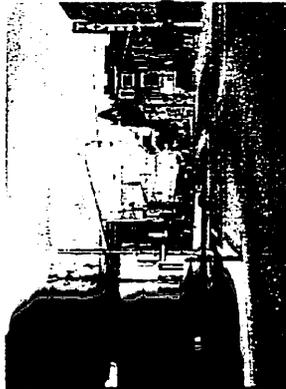
Station 10 – Oak Street and City Transit Terminal



Station 11 – Main Street



Station 12 – Ferguson Street



Station 13 – CP Rail Station

Station 14 – Wyld street



Station 15 – Walk Through to Main Street



Station 16 – Sherbrooke Street



Station 17 – Fisher Street



Station 18 – Regina Street



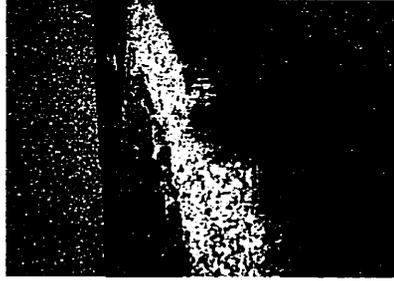
Station 19 – Golden Mile Beach



Station 20 – Waterfront Park



Station 21 – Waterfront Park



IDENTIFICATION OF PLANNING ISSUES & OBJECTIVES

A. Site Specific Urban Design Issues

North Bay's existing urban pattern in the downtown area follows the same model of the quintessential 'small town' with its main street, old residential districts and mixed land use that is advocated by New Urbanists. Main Street embodies the characteristics of an Urban Village that are described by David Sucher in his book *City Comforts*. The buildings are built right up to the sidewalk with parking lots in the rear and store fronts that are permeable and inviting to pedestrians.

But like all modern cities, North Bay is suffering from the growing pains of suburbanization. The disbursement of the urban fabric has brought a dependence on the automobile for daily life and many of those endearing small town qualities are compromised by the attempt to accommodate the automobile instead of designing for the people.

With the reclamation of approximately 70 acres of land in the centre of the city, North Bay has the opportunity to reverse the trend of urban disbursement and return to traditional town building that produces endearing places to live. The biggest change to traditional town

planning today is incorporating and balancing the car without sacrificing the pedestrian qualities.

This site provides the opportunity to concentrate some of the future urban growth within the downtown area rather than continued suburban expansion. Developing underutilized land or "lost space" in the urban core will help alleviate the pressure of development on ecologically sensitive areas around the city such as the escarpment, the wetlands, and the Trout Lake watershed which is the source of drinking water for the city.

The objectives of the urban design plan are to:

- Create an urban framework which strengthens the existing fabric of the downtown and adds components that are missing to create vital and convivial public areas.
- Develop a pedestrian-oriented community which maximizes human interaction and minimizes automobile use.
- Define a 'sense of place' by capitalizing on the neighbourhood's unique location between the lakeshore and the existing downtown.

- Develop housing within walking distance of the central business district – this provides opportunity for people to live close to where they work. Development should be concentrated in compact arrangements where a mix of households, businesses and recreational activities can locate in proximity to each other and the existing business district and waterfront recreation.
- Continue the pattern of integration of activities that exists in the downtown area – business, commercial residential, civic and institutional land uses are all present.

The following site specific urban design issues have been identified as important:

1. Maintain the memory of the Canadian Pacific Railway and its importance in the founding of the city. With the removal of the CP Rail main line and shunting yards and the reurbanization of the area, the historic role of the station as a gateway between the city and rail travel needs to be redefined. Just as the automobile replaces the train, the tracks are replaced by a street. The traditional approach and views of the station should be retained. The new role for

- the station is a gateway between the proposed urban area and the existing downtown. The relationship of arrival and departure could be reinforced by the placement of the main downtown transit stop for where daily commuters arrive and depart.
2. Create a focus for the downtown area by developing an urban plaza which fosters shared experiences for residents of North Bay. Create a centre for public life and activity.
 3. Develop the CPR station as

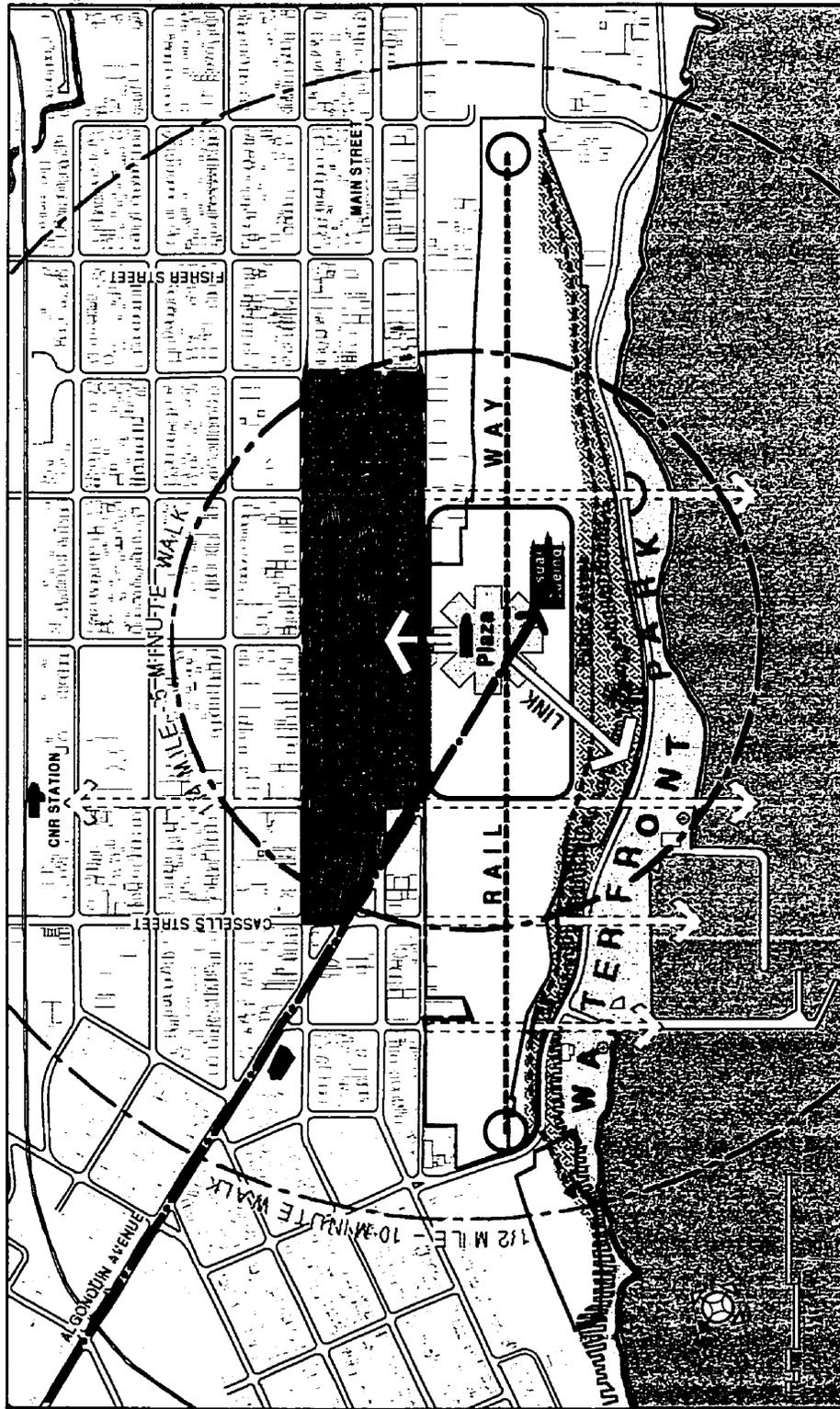


Figure 5.1 – DESIGN STRATEGIES

the keystone of the design of the plaza. Its form and image should be strengthened by surrounding building form, architecture and street patterns.

4. Develop the area around the plaza as the focus of activity for the area. The plaza should be surrounded by civic and commercial facilities. Concentrate program elements of high activity around the plaza such as the city transit stop, farmers market, restaurants and cafes, and retail expansion. The proposed hotel and Heritage North Tourist Attraction should be adjacent to the plaza.
5. Develop a direct pedestrian connection between the Downtown Improvement Area and the Waterfront with a minimum number of street crossings. Design the access link for both pedestrians and cyclists.
6. Create a terminus at the end of Algonquin Avenue that acts as a visual cue to lead people into the site from the north.
7. Extend the existing street grid pattern into the site.
8. Retain the character of Memorial Drive by keeping new intersections and through traffic to a minimum.
9. Maintain visual links to the waterfront from the downtown area by extending visual corridors at the end of existing streets. Accurate orientation, even unconscious, gives us a sense of comfort, safety. Bodies

of water help orient people in cities. Keep views to Lake Nipissing open for orientation.

10. Develop a strip of land along the bank as public open space. Create pedestrian/ bicycle access points to the waterfront at the end of streets.
11. Revegetate the bank to screen the new development from the waterfront park.
12. Provide a gradient of housing densities in the neighbourhood. Locate higher density and mixed use housing near the centre, intermixed with multi-family, townhouses and small lot detached development moving out from the core.
13. Develop two neighbourhood nodes, one at each end of the site, to provide services to the residents of the immediate neighbourhoods.

B. Site Programming

The site program was derived from the site analysis, the concept of New Urbanism, and several proposals put forth by the City of North Bay that would preferably be located downtown on the CP Rail lands should they become available for development.

The existing on-site activities and/or elements that are to be retained and incorporated into the design are the CP Rail Station, the city transit transfer stop, and the Heritage Railway amusement ride. The City has proposed to locate three projects on the site:

- the Heritage North Tourist Attraction, preferred to be located near the waterfront and slated to open in 2001;
- a hotel with convention facilities,
- a pedestrian access link between the Downtown Improvement Area the waterfront.

The urban design also proposes:

1. to create a compact urban neighbourhood to serve the need for more housing in the downtown area that follows the characteristics of New Urbanism – compact, walkable with a diversity of land uses and housing types;
2. the development of a central core that provides an urban focus for downtown and the city at large;

1. CP Rail Station

The North Bay and Area Museum have expressed interest in moving into the CP Rail Station. They intend to preserve the station as much as possible and to keep the exterior intact. The museum would benefit by having the Heritage North Tourist Attraction located nearby.

- historic/ cultural value
- reuse as museum/ art space with railway theme, North Bay Area Museum
- symbolic entrance to new area recalling historic role of gateway to rail travel.

criteria:

- visibility and visitor parking

opportunities:

- outdoor interpretive elements adjacent to station
- civic plaza with public art or fountain celebrating the history and founding of the city reflecting the formative role the CPR played in North Bay's development.

2. The City Transit Transfer Terminal

All city bus routes currently converge at this transfer stop adjacent to the station. This is the point where passengers transfer onto different routes. It is also the main bus stop for downtown and the closest access to the waterfront park.

criteria

- comfortable waiting area and seating
- climactic considerations for comfort
- large heated bus shelter
- buses arrive from the north or south then loop back through downtown.

opportunities:

- locate other amenities nearby – build the bus shelter with public services - espresso bars, newspaper and magazine kiosk, bank machine, flower shops, video rental, public phone.

3. Heritage Railway Company

This existing amusement attraction is to be retained and incorporated into the overall plan of the site. It is located on the bank across from the marina.

criteria

- parking and access

opportunities

- potential to develop other public facilities nearby such as a model train community club or community centre.

4. Heritage North Core Attraction

The Heritage North project is a partnership of the region's tourism leaders whose purpose is to develop and market a network of attractions in "Ontario's Near North", each capitalizing on unique historical, environmental and technological aspects of the area. The Heritage North Core Attraction, viewed to be a major regional tourism, recreation/ entertainment and education facility, will be housed in a building complex located in North Bay. It is planned to open in the year 2001. The core attraction will be designed and built as the hub of the regional network of attractions, guiding tourists to other regional heritage satellite facilities. The intent of Heritage North is that it is a network of interrelated tourist attractions depicting different historical themes pertinent to the region. Currently there are 19 partners located throughout the region.

The preferred site for Heritage North Core Attraction is near the CP Rail station and the surrounding downtown area. It will utilize advanced technological multi-media applications to convey several heritage themes related to the area. This high-tech media centre will portray simulations of various historic times and events using virtual reality, holographic and IMAX projection technologies. The intent is to build a multi-faceted complex that will also include the North Bay and Area Museum.

- an Interactive Education centre similar in scope to Sudbury's Science North;
- a building or cluster of buildings to be constructed in the vicinity of the waterfront;

- It will house heritage and eco-tourism programming and attractions.

A consultant group has been hired by the city to develop the programming for the facility. Their report is being written concurrently with this study.

preliminary criteria for the centre:

- 48,000 s.f. building which will house high tech interactive displays, exhibition galleries, an IMAX theatre with a 5 story high screen; office spaces, entry admissions area, coffee shop/ restaurant, gift shop;
- tourism information kiosk - one of the purposes of the core attraction is to direct visitors to other sites in the region;
- may also include the development of interactive outdoor activity displays;
- visitor parking: 1 stall per 300 s.f. exhibit space = 160 stalls.

Opportunities

- Heritage plaza - physical orientation pointing visitors to other sites, information kiosk.
- Cyber cafe - a place where visitors can explore North Bay's critically acclaimed web site and find information on other Heritage North attractions. Neighbourhood

residents can have access to the web to also get information about City Hall and upcoming community events.

5. Hotel and Convention Centre

- a city centre hotel - medium grade, approximately 100 rooms
- convention centre will include meeting rooms and a banquet hall.

criteria:

- 100 to 125 rooms
- 75,000 to 80,000 s.f.
- gross area 2 to 4 acres
- 10,000 s.f. main floor includes entrance lobby and front desk, dining room, bar coffee shop, administration offices, conference banquet rooms, service and circulation.
- guest floors 6000 s.f. per 17 rooms x 6 floors; two wings, three stories high
- parking: 1 stall per room = 100 stalls plus additional 25 stalls for convention centre
- parking garage, surface parking.

opportunities

- central location close to Heritage North and civic plaza
- entrance lobby, restaurant/ bar, meeting rooms accessed from plaza
- outdoor gardens and patio overlooking the lake

6. Pedestrian Link between Main Street shopping district and the waterfront park

- Heritage Festival activities
- everyday access
- tie into existing sidewalks, mid block walkway on Oak, and pedestrian and bicycle paths along the waterfront.
- Keep street crossings to a minimum. Design pedestrian crossings where paths cross streets.

opportunities

- develop a lookout and grand stairway access on embankment
- provide ramps for bicycles.
- create a series of connected outdoor spaces along link, each with different character and functions.
- Incorporate civic plaza into the linkage network.

7. public plaza

- focus for downtown area
- night life, noon hour activities
- farmers market during summer weekends, and permanent specialty grocery retailers.

8. Housing

- small lot single family with ancillary unit
- townhouses
- manor homes - asymmetrical duplexes
- garden apartments - four stories max.
- apartment blocks with retail on ground floor.

9. Green Space

- pedestrian access network
- revegetate existing bank to provide a visual screen between the new development and the waterfront.
- community centres
- community gardens.

THE URBAN DESIGN

A. Site Organization

There are two distinct components to the site development plan:

1. residential neighbourhoods that provide a mix of housing types at varying densities and costs
2. the core area that is an extension of the downtown public domain.

The centre part of the site will be developed as the core and it will have more civic oriented activity belonging to the entire city of North Bay. It will also be a primary destination for visitors to the city.

The residential areas will be located on either side of the core area. Higher density housing will be placed close to the core. Two 'Neighbourhood Corners' that provide space for business and retail services that cater to the immediate neighbourhoods, will be developed on either side of the site. Other community facilities, such as a community centre, day care, and community gardens, will be scattered throughout the site.

The former Kenroc property at the northern part of the study site will be developed as a multi-unit housing

development. Its secluded location makes it ideal for a more segregated, self-contained community. Proposed housing for this site will be attached townhouse condominiums clustered around courtyards. The layout will take advantage of views to the lake.

Where the residential component will address the needs of the people living in the area, the core will be developed for the use of the entire city's population. It will be the location for more highly public activities such as the Heritage North tourist attraction, the hotel and convention centre, and the market / plaza. This area will be centrally located around the CP Rail Station. Its layout will enforce the desired pedestrian linkage between the shopping district and the waterfront.

An urban plaza will be located in the front of the historic CP Rail Station. It will form a gateway and linkage between the existing downtown business and retail area and the existing waterfront park along the shore of Lake Nipissing. Heritage North and the hotel/ convention centre will form a backdrop around the plaza.

Algonquin Avenue is the direct route down the escarpment into downtown from the north and west highways entering the city. It is distinct because it forms a diago-

nal spine that connects the two street grid patterns present downtown. The Heritage North building will be used as a visual cue to terminate Algonquin Avenue and lead visitors into the site.

The city transit transfer terminal will be located within the plaza and will serve as the arrival point for commuters into downtown. Bus access will flow through an extension of Algonquin Avenue into the plaza space. The intent is that this access road will be only for buses and access to the parking lots.

Rail Way

- A new street will replace the railway tracks, in an effort to preserve the memory of the past railway line.
- The relationship of arrival/ departure at the station will be retained however, the automobile will replace the train.
- The name 'Way' was chosen to evoke a sense of journey to distant destinations and cities.

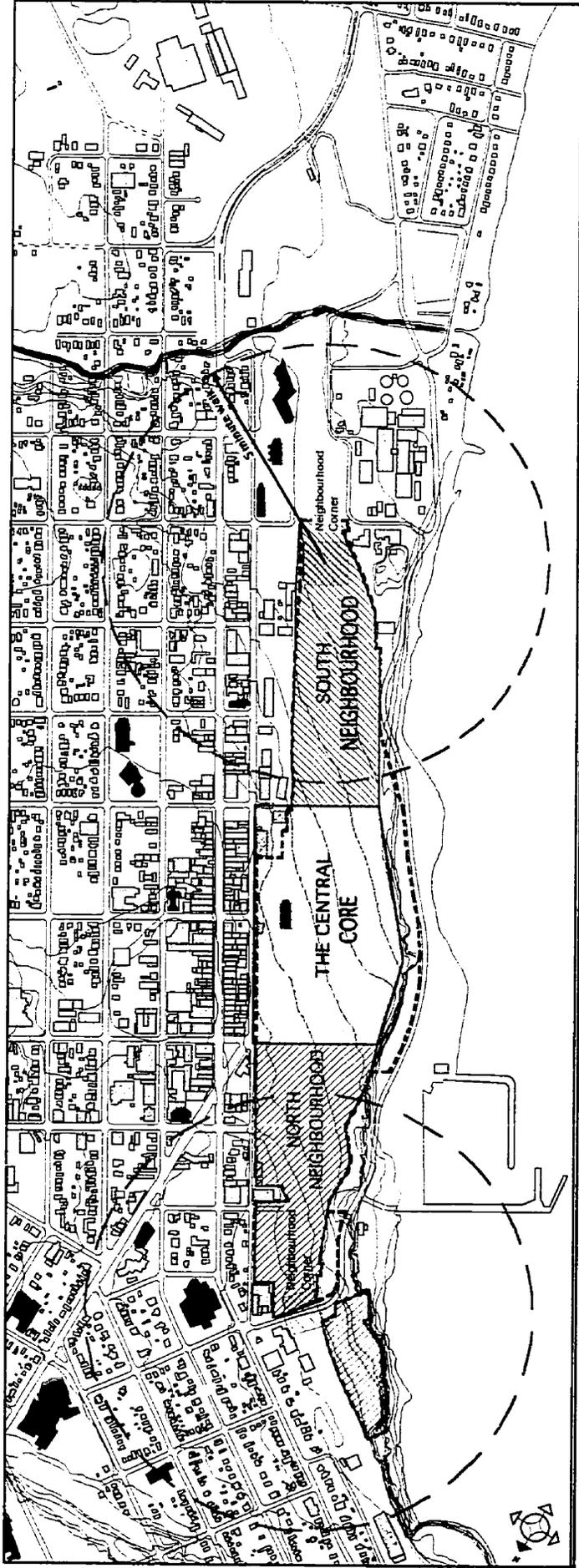


Figure 6.1 – SITE ORGANIZATION

The North Neighbourhood

This area is characterized by the steep embankment along Memorial Drive. The Heritage Railway is located on the bank across from the marina.

- East of Rail Way - detached houses on 40 x 120' lots with ancillary units - apartments

above detached garages facing the back alley. Townhouses and small apartment buildings are placed on the side streets between Oak Street and Rail Way.

- West of Rail Way - park land along the narrow section of land north of the Heritage Railway, and higher density garden apartments.
- Neighbourhood corner at the intersection of Memorial Drive and Rail Way. Develop

retail on the main floor fronting the street with apartments above.

The South Neighbourhood

The embankment is lower with a much gentler slope. This area is close to grade with Memorial Drive.

- Apartment buildings and townhouses along east side of Rail Way.

- On west side of Rail Way there will be small lot single family houses along side streets and duplex manor houses around modified cul-de-sacs. End of cul-de-sacs will be open and provide public access to waterfront. Traffic circles are introduced as a traffic calming device.
- Wyld Street will be extended to connect with Memorial Drive. Another neighbourhood corner will be developed at the intersect of Fisher Street extension and Rail Way.
- A community centre and/or day care would be developed at the south end of the site.
- Potential to develop seniors apartments in this area which could include medical services such as doctor's offices, pharmacies, orthopedic products.

B. Design Description

URBAN PLAZA

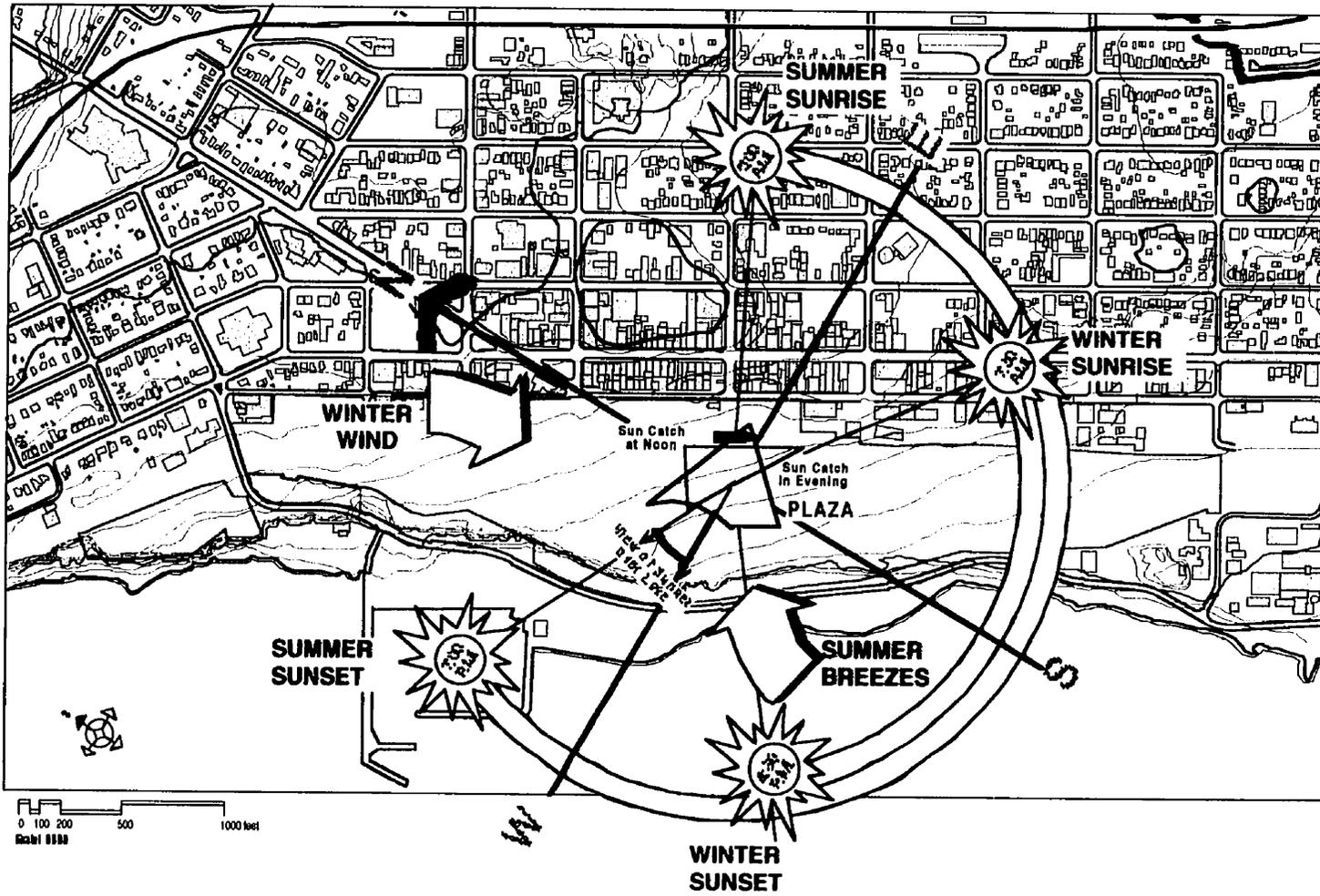
The proposed central plaza is a key component of the urban design. The location of the plaza responds to two strong elements existing on the site – the historic CP Rail Station and the terminus of Algonquin Avenue, a major route into downtown. The plaza becomes the conceptual anchor point which links the downtown district and the waterfront park.

The plaza is intended as an activity focus, to create a heart for the downtown area. This identity will be strengthened by the intensity of use. The most frequently used plazas are those located in areas of greatest land diversity. The strategy is to propose many different activities to occur in the space and to locate the plaza within walking distance of the downtown core and the proposed residential neighbourhoods. The plaza should be located where it is easily accessible and can be seen by potential users.

The proposed activities and uses are the main downtown transit stop, farmers market, restaurants/cafes, the Heritage North tourist attraction and IMAX theatre, the North Bay and Area Museum (to be located in the CP Rail Station), and a hotel/convention centre. The plaza

will be used by office workers at lunch time and after work, visitors to the museum and Heritage North or tourists staying at the hotel, local residents and city residents shopping or dining in the area, IMAX theatre patrons, and transit users arriving at the plaza. During special civic events such as Canada Day and the Heritage Festival, the plaza will be an important location for festivities and will link the activities happening on Main Street and along the waterfront.

- The buildings are oriented to face into the plaza with main entrances and outdoor extensions located around the plaza. Parking has been consolidated into parking lots located at the back of the buildings. Walk-throughs are proposed in between buildings to connect the parking lots and the plaza, similar to the existing walk-through between Main Street and the public parking lot on McIntyre.
- Heritage North is located at the terminus of Algonquin Avenue. The five story IMAX theatre will serve as a strong visual cue leading travellers down Algonquin Avenue into the central plaza.
- The plaza is designed to be physiologically comfortable at peak use times in regard to sun, shade and windiness given the limits of the northern climate. The restaurant outdoor seating areas are located to catch the sun at noon and evenings. The plaza is open to summer breezes off the lake, while



The Forks Plaza – Winnipeg, MB



Old Market Square – Winnipeg, MB

Figure 6.2 - Plaza Analysis

- northern winter winds are blocked by buildings where possible. Farmers market and related permanent specialty grocery retailers such as a bakery, deli, butcher, fruits and vegetables, fish market (offering Lake Nipissing catch of the day), bulk foods and liquor vendor or wine store. In the summer, outdoor kiosks will be set up for local farmers selling fresh produce, homemade foods and artisans selling crafts. North Bay has several existing specialty food stores but they are scattered all over the city. The plaza offers the opportunity to consolidate these stores in one area.
- The city transit stop - downtown commuters will arrive and depart at the plaza. The bus stop and market make good partners - locating the market near the bus stop conveniently offers commuters the opportunity to pick up groceries on their way home.
- Retail stores and cafes will attract people into the space and thus enliven it. Fifty percent of the total frontage will be allocated to retail or service establishments. Twenty percent of the plaza area will be allocated to restaurant outdoor seating.

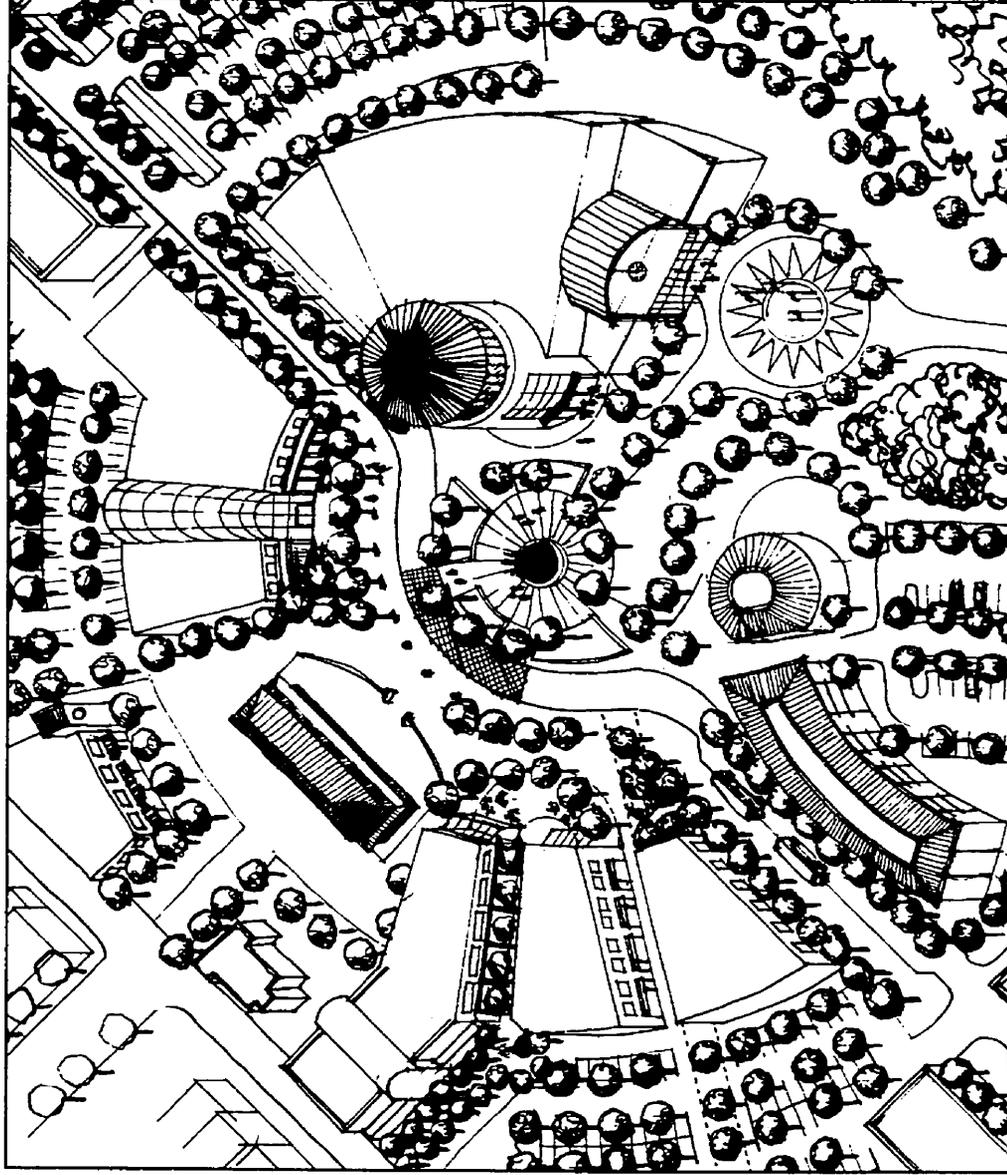


Figure 6.3 - Axonometric of Plaza

STREETS

Pedestrian Friendly Street Networks:

- a network of sidewalks and crosswalks that connect the residential areas with shopping, transit, workplaces, and parks
- pedestrians will be provided with their own space, safe from the nuisance and danger of passing cars:
 - sidewalks in residential areas are to be at least 5' wide;
 - sidewalks in commercial areas are to be at least 8' wide.
- for pedestrian safety, sidewalks will be separated from moving traffic either by using planters, green belts, extra wide sidewalk width, or a row of parked cars.
- crosswalk distances will be minimized wherever possible by:
 - narrowing traffic lanes at intersections
 - shortening curb radii
 - extending sidewalks into the intersection with safe crosses - raised sidewalks that project out into the end parking space at the intersection
 - important crosswalks will be clearly defined with striping or different paving material.

traffic calming techniques:

- Space street trees at 25 feet. Increasing the number of street trees reduces the perceived width of the street.
- Install traffic circles in the centre of an intersection to discourage through traffic in residential neighbourhoods – 18 foot diameter, mounded in the centre, planted with trees and enclosed by a curb.
- At major intersections, bulb the sidewalk corner for more pedestrian space. Decrease the turning radius to reduce cornering speeds. In residential areas the radius will be 15' instead of the typical 25' radius.
- Create congestion by expanding on-street parking. With on-street parking, drivers have to be more alert for vehicles parking or pulling out, thus they tend to reduce their driving speed.
- Short blocks (240') provide more intersections to slow traffic movement and provide more opportunities for pedestrians to cross the road.

Circulation system

- The street pattern is simple, legible and direct, avoiding long, illegible circuitous routes.
- A grid pattern versus arterial hierarchy provides more route options between destinations, dispersing traffic. Clear, formalized, and inter-connected street systems provide

the shortest and most direct path for pedestrians and bicyclists. A street pattern which is circuitous and complex will discourage pedestrians.

- Street connections should be designed to keep through trips on arterial streets and local trips within neighbourhoods.
- On-street pedestrian and bicycle paths are provided to allow residents to walk to all local destinations, rather than segregated off-street paths.
- Back alleys are used to locate residential parking at the back of houses thus creating a stronger pedestrian environment on the street.

Residential Setbacks:

- In residential areas building setbacks are to be between 10 and 15 feet from the property line at the sidewalk. Porches and balconies are allowed to project into these setbacks.
- In residential areas, minimal front yard setbacks encourage recessed garages and dedicate a greater portion of the lot to private back yards.

Commercial Setbacks:

- In commercial areas the sidewalk is the main pedestrian activity centre because it channels pedestrian movements and forces people into closer proximity.

- Buildings in commercial areas are to be built up to the sidewalk edge to enliven commercial areas by encouraging window shopping and street side activity.
- larger setbacks of no more than 20 feet are permitted for multi-story office buildings and street side outdoor cafes and patios in commercial areas.

Make the Street Fronts Permeable

- Place windows and openings along the sidewalk.
- Place front doors where they are visible from and directly face the sidewalk.

Street Trees

- Neighbourhood identity will be enhanced with street trees. Different species will be used to indicate hierarchy of streets and paths, and to distinguish special places.

PARKING REQUIREMENTS

General:

- Parking lots are to be located behind the buildings rather than in front. Street fronts are to be reserved for pedestrians.

- It supports orienting building entries to the street by providing convenient access for guests and patrons.
- On-street parking on local streets is compatible with bicycle travel provided that auto speeds are slow enough to allow cyclist to travel in the street at the same speed as the cars.
- Provide enough width for bicycle lanes on streets with higher speed traffic where on-street parking is retained.

Parking Lots

- All parking lots will be planted with sufficient trees so that within 10 years 70% of the surface area of the lot is shaded.
- Asphalt areas are to be limited by converting the peak parking areas to permeable surfaces such as gravel.
- In large parking areas aisles are to be oriented to the entrance in order to minimize the number of aisles crossings by pedestrians.

On-Street Parking

- On-street parking is encouraged on all streets except in front of plaza.
- Parking lanes will be 7 to 8 feet wide to accommodate parallel parking.
- On-street parking helps to create street activity - focus is on the street rather than on the interior of lots.

- Entrances will be 25 feet minimum for two-way traffic.
- Driveway entrances and exits are not to be located near street intersections. The minimum distance between driveway and intersection will be a minimum of 50 feet.
- A minimum of two access points is desirable. Small lots can have one entrance.

Parking Structures

- Parking structures should not dominate the street frontage. Retail uses should be encouraged on the first floor of street-side edges of parking structures.

Shielded parking

- Put all large parking lots or parking garages behind some kind of natural wall so that the cars and parking are screened. The 'wall' may be shops, connected houses, or earth berms.

Neighbourhood Parking Lots

- In the neighbourhood districts, parking lots are to be small, serving no more than five to seven cars, each lot surrounded by a garden walls, hedges, fences, slopes or trees

Parking Requirements

museums	1.0 per 300 s.f.
hotels	1.0 per room
offices and banks	3 per 1000 s.f.
business and prof. services	3.3 per 1000 s.f.
community shopping centres	5 per 1000 s.f.
neighbourhood centres	6 per 1000 s.f.
restaurants	0.3 per seat
medical and dentist offices	1 per 200 s.f.

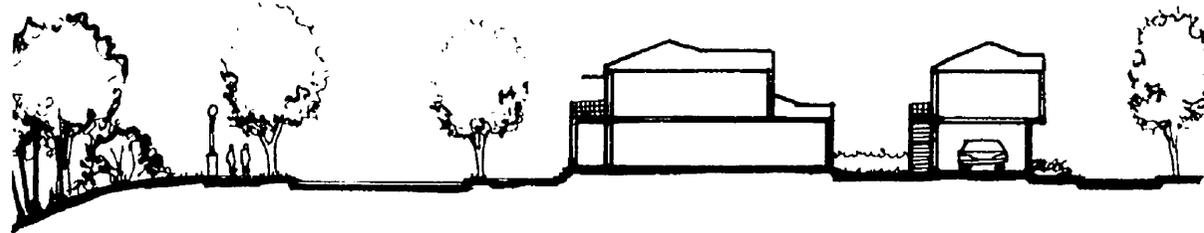
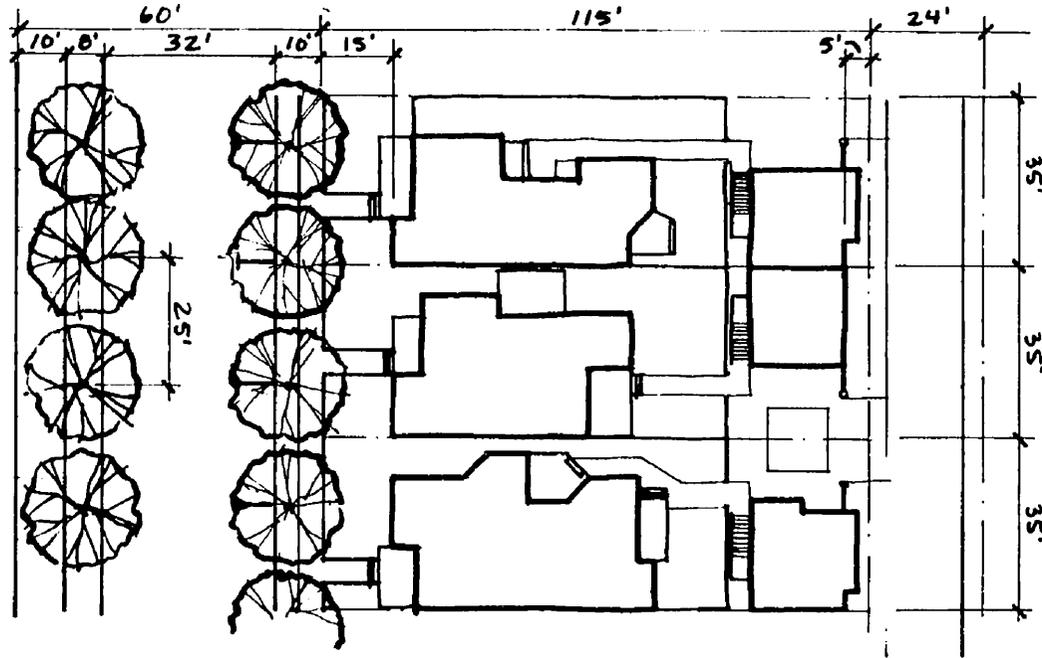


Figure 6.4—Zero Lot Housing with Ancillary Units - Northwest Neighbourhood

HOUSING

Diversity and flexibility are keys to the housing program. The emphasis is on higher-density forms of housing that provide affordable alternatives to conventional single-family housing. New types of housing such as small-lot single family, zero lot lines, and ancillary units, along with traditional townhousing, maintain ownership patterns and private yard features of the single family home. By providing a broad range of housing types the residential area can respond to many dimensions of the housing market.

Small Lot Single Family Housing

Small lot single family homes will range from 7 to 10 units per acre (residential densities are measured in net densities). A 50'x100' lot can achieve a net density of 7u/ac while a 33'x100' lot would have a net density of 11u/ac. A study done by the City of Ottawa on small lot housing standards concluded that lots could be as small as 26'x75' with a house-to-house separation of 72.5' (10' front yard and 52.5' r.o.w.) and still be functional in Canadian cities.(Cappe, 1992)

Ancillary Units

Ancillary units or "granny flats" are apartments that are either part of the primary home or situated above a detached garage on a single family lot. These units provide rental housing opportunities or provide additional

room for a teenager or elderly family member. Single family homes with ancillary units are feasible between 12 and 17 units per net acres. A lot size of 33'x100' with an ancillary unit on the lot would have a net density of 22 u/ac.

Zero-Lot-Line Housing

Zero lot line housing allows one side of the house to be built on the property line. They can achieve comparable densities to duplexes while still being detached housing. Typically they have a private side yard orientation next to a windowless wall on the adjacent house. Many have a linear plan with side entrances. Use of landscape elements such as garden walls and entry gates, help direct visitors to the front door.

Manor Homes

Manor homes are disguised duplexes that negate the typical mirror image. From the curb they have a grand unified appearance of large single family homes. There are typically two to four units per building stacked vertically, horizontally, back to back or side by side. Front door entrances are separated and are placed at alternate front/side elevations for privacy and individuality.

Townhouses

Townhouses can provide between 18 and 29 units per acre. They are a very good model for medium density housing because they still provide private outdoor yards and separate entrances while achieving higher densities. Higher densities can be achieved by using the stacked townhouse model which combines the familiar two level townhouse stacked over a single level apartment. All units share a common entry level.

Attached townhouses are also more energy efficient than conventional single family housing because they limit the exposed perimeter surface to heat loss. Townhouses that are oriented east and west receive sun on both faces and in their yard spaces. Steeply pitched roofs maximize solar exposure in gardens.

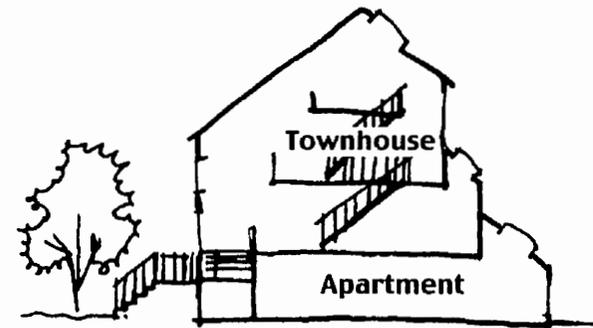


Figure 6.5–Stacked Townhouse

Apartment Buildings

Apartment buildings up to three stories high can provide densities of 35 to 50 du/net acres. Courtyard buildings have a courtyard orientation to concentrate entrances at one well defined central area while private exterior orientations focus out on the building perimeter. The central entrance evokes feelings of security and community. Individual doors or porches may be grouped into portico areas. Access to second level units may include a common grand stairway leading to a common balcony with private interior stairs.

Courtyard buildings can have subsurface parking below the building footprint or a parking roof deck which forms a platform.

Apartments Over Retail

In the neighbourhood corners, apartments will be located over first floor commercial space. Entrances to residences will be separate from the commercial entrances to avoid conflicts.

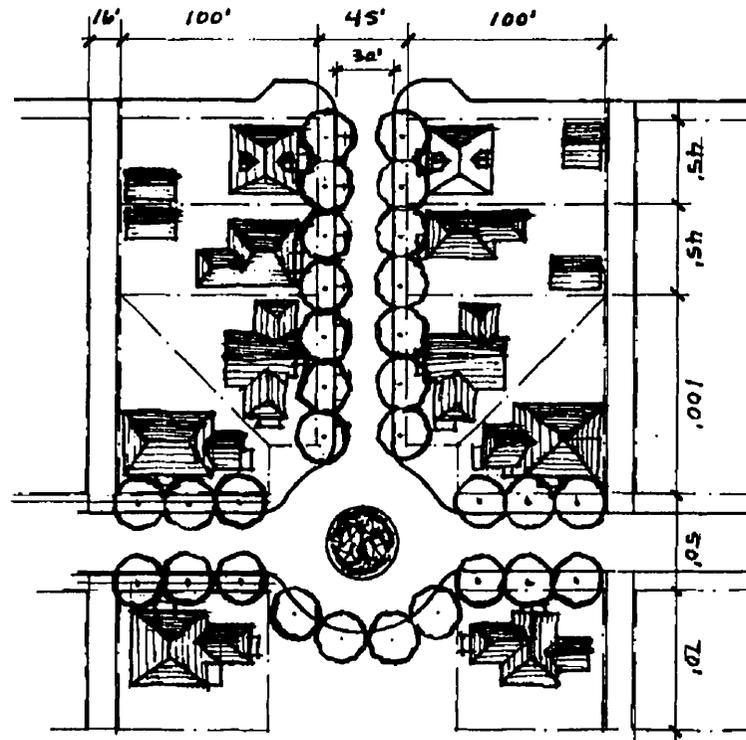


Figure 6.6—Small Lots and Manor Homes on Cul de Sacs - Southeast Neighbourhood

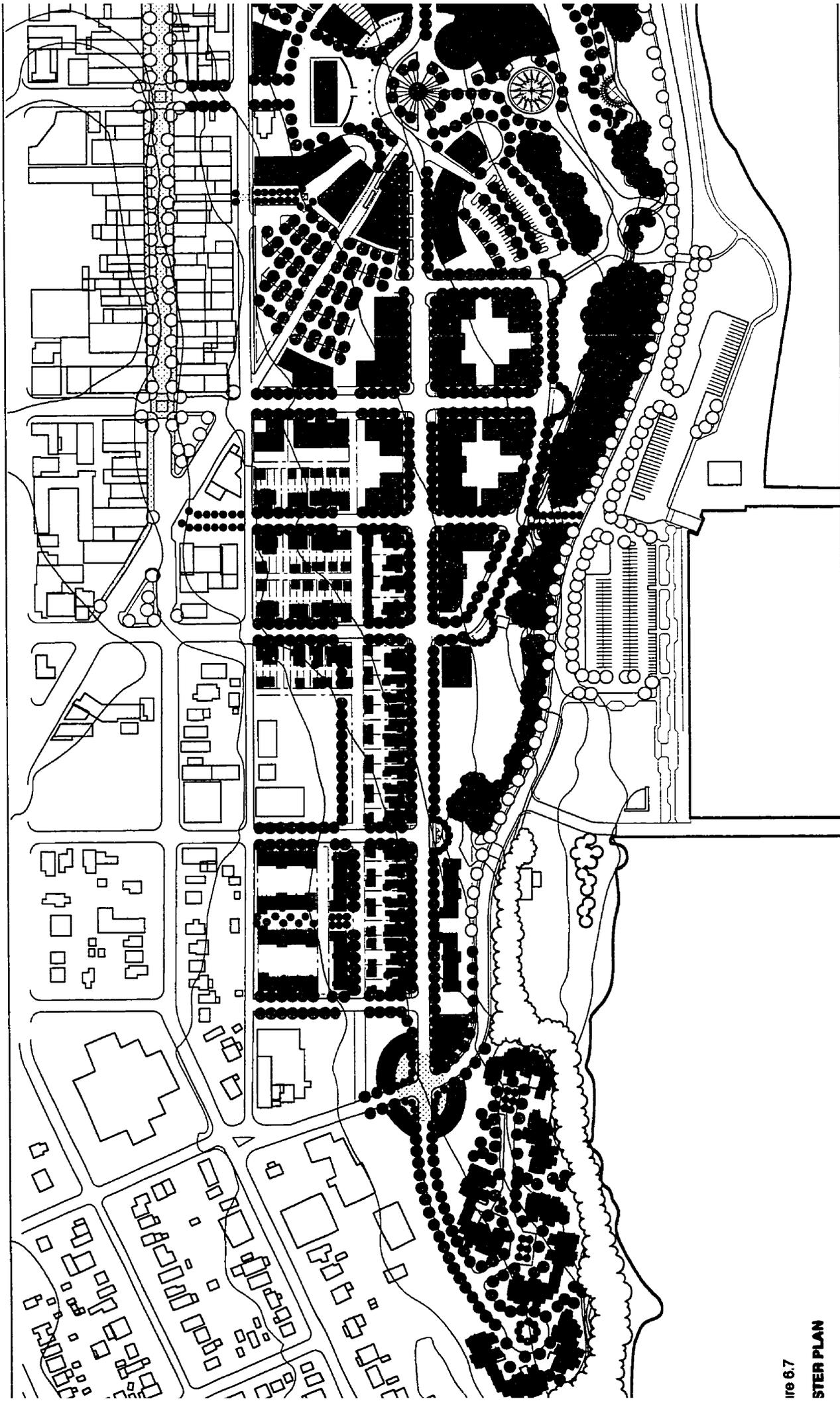
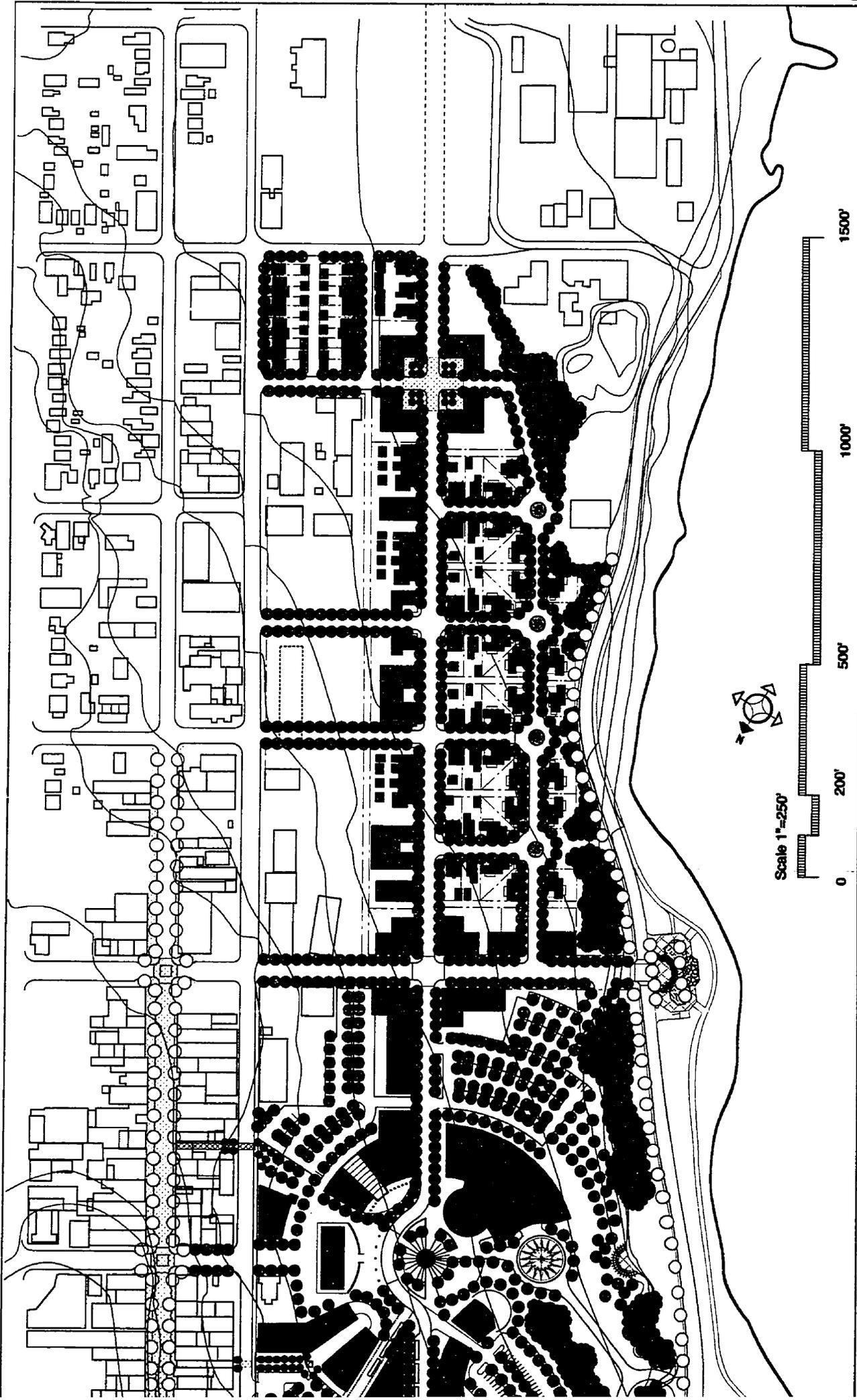


Figure 6.7
MASTER PLAN



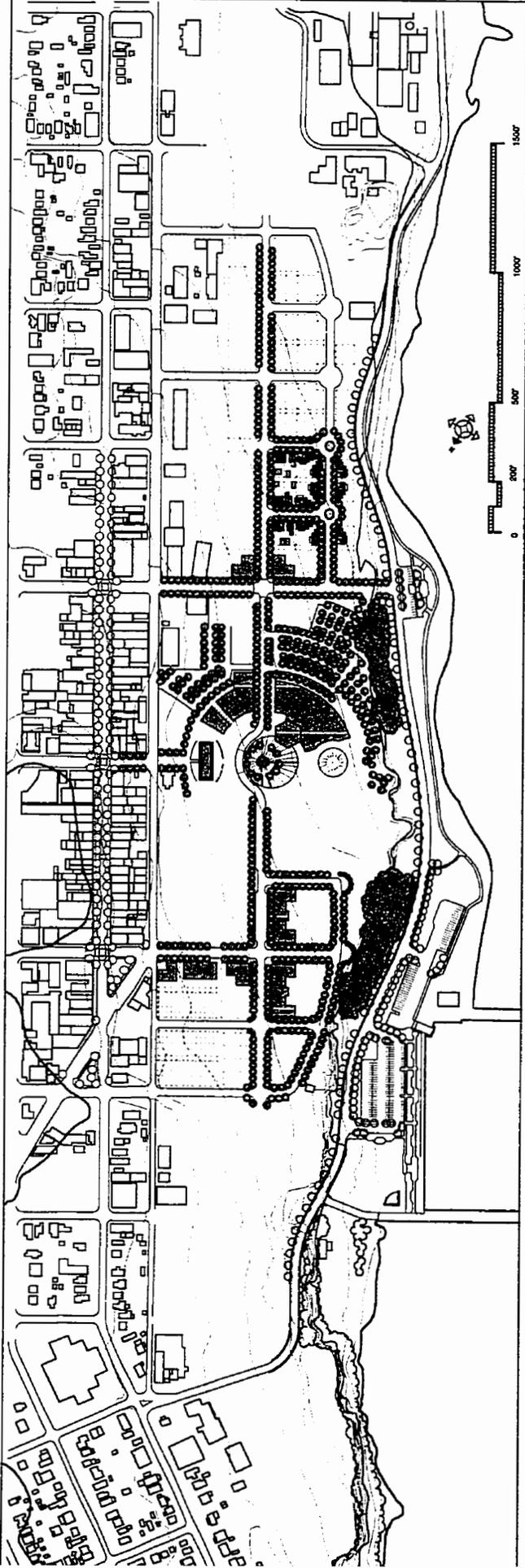


Figure 6.8 – Development After Two Years

C. Conclusion: Implementing the Plan

The following plans show a possible phasing strategy for the development of the site over a ten year period. It should be noted that this urban design has dealt only with the CP Rail and Kenroc properties and adjacent vacant parcels. It is reasonable to assume that development of this land will influence the adjacent existing

land uses and property values. For example, with the removal of the railway tracks, many of the businesses along Oak Street may wish to relocate and seize the opportunity to sell or redevelop their properties. As this happens the urban design model proposed by this study can be used to expand the neighbourhood/ community into these areas as well.

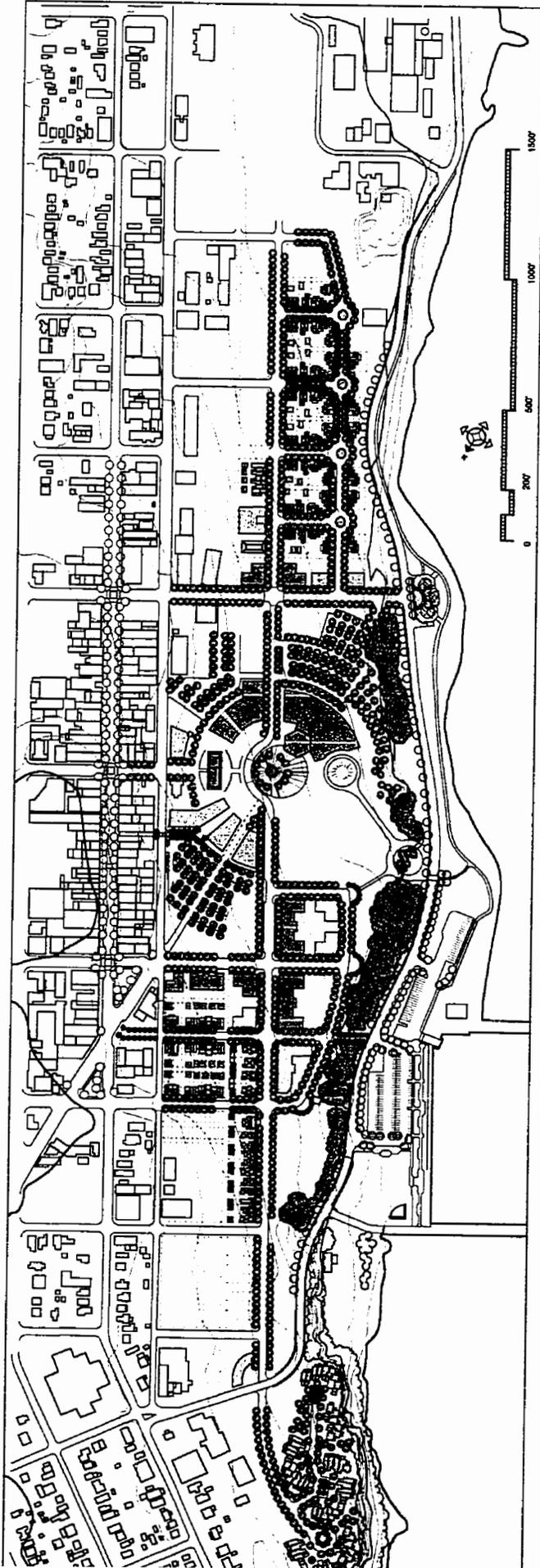


Figure 6.9 – Development After Five Years

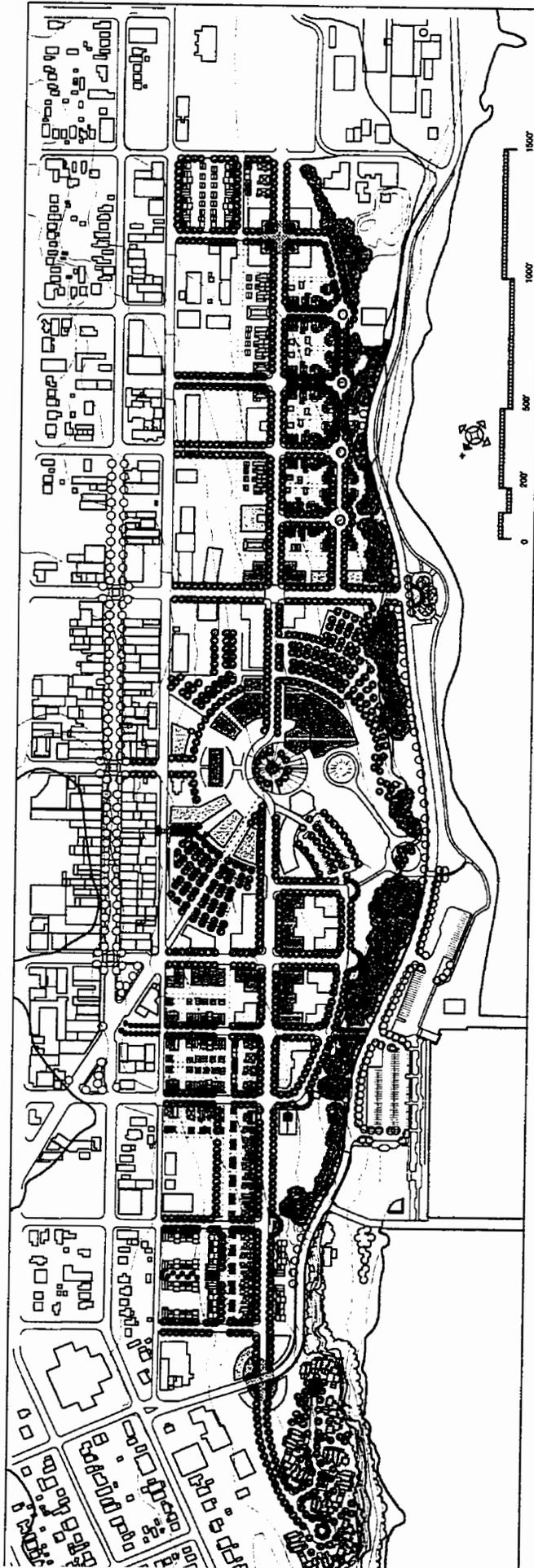


Figure 6.10 – Development After Ten Years

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