

Greenspace Enhancement in Agro-Manitoba Communities

by

Ute Elisabeth Holweger

A practicum submitted to the Faculty of Graduate Studies in partial
fulfillment of the requirements for the degree of

Master of Landscape Architecture

**Department of Landscape Architecture
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UTE ELISABETH HOLWEGER

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree**

of

MASTER OF LANDSCAPE ARCHITECTURE

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Abstract

Canadian Prairie towns have played a key role in developing Western Canada. Most of these towns developed along the railroad which not only provided the key linkages across the prairies but also influenced, to a large extent, town form and function. Many changes have taken place across Western Canada since the initial establishment of railroads and towns. Economic trends continue to evolve while transportation methods are changing. As a result, many towns need to find ways to adapt to the changes taking place if they wish to remain a part of the prairie landscape.

This study looks at how agro-Manitoba communities are adapting to these changes in order to accommodate some of the current social, environmental and economic trends. Some of the recent initiatives within these communities include rails-to-trails, urban walkways, and habitat conservation and restoration. Agro-Manitoba communities are finding that these initiatives tend to be more cost effective and ecologically functioning than traditional landscapes. They also require less maintenance, provide greater means for environmental education and allow for more community involvement.

The intent of the demonstration project is to establish a connected network of habitat and public open space by developing a greenspace enhancement plan for the Town of Birtle, Manitoba. This plan will assist the town in developing a community walkway system that links the historical, social, and natural amenities of Birtle through a continuous network of greenspace. This initiative will provide a means for habitat conservation, recreational activities, historic preservation, and environmental education. The project draws largely on a public participation process with most of the work being carried out at the grass-roots level through local volunteers.

The need for project guidance, including governing bodies, interest groups/organizations, and professional assistance, is evident in the Birtle study. Recommendations, based on Birtle, are provided as a reference for other agro-Manitoba communities who may wish to start similar initiatives.

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1. Introduction

The Opportunity

Canadian Prairie towns have experienced numerous transformations since their establishment as primarily service centres for surrounding agricultural activities. Only a few towns have remained unchanged. Today, prairie towns are faced with many challenges that not only affect the agricultural sector (of which they remain an integral component) but also influence the social, economic, and physical structure of the community. These prairie towns need to become more diversified and adapted to maintain a dominant role in the rapidly changing agricultural sector, as well as provide new opportunities for economic growth, value-added industry, and residential development. The ability to provide opportunities and amenities is important in keeping local residents in the community and attracting others who prefer to live in rural environment.¹

In addition to improving local infrastructure, many Manitoba towns, more commonly known as agro-Manitoba communities, are actively pursuing either or both conservation and enhancement projects. These towns have been able to develop projects that are successful in accommodating local interest, enhancing the local landscape, increasing biological diversity, and maintaining regional identity. This has been made possible through community stewardship, active living, environmental awareness, and heritage initiatives. For example, the Town of Killarney established a Flora and Fauna Preserve in 1992,² the Town of Carman implemented a community pathway along the Boyne River,³ the Town of Inglis designated the local grain elevators as a historic site, and a number of rural municipalities are establishing rail-to-trail systems.

Many of these projects rely on public and private sector support through funding and partnership initiatives as the limited local financial resources often are allocated to the construction and maintenance of infrastructure in support of local economic development. Due to limited human, technical, and financial resources in rural communities, projects

must maximize on local capabilities.⁴ These are often provided by grassroots organizations or through community participation initiatives with some assistance provided by outside consultants or interest groups. In doing so, communities have to be careful that consultative input is sensitive to the physical context as well as social issues within the community. A town's characteristics of small scale, small growth, and diverse land-use situations must be recognized, and the cultural heritage and regional identity must be maintained in order for plans and designs to be appropriate.⁵ Therefore, it is important to establish design guidelines that respect the local identity. These guidelines should be flexible and adaptable in order to be applicable in different communities as they make decisions about proposed changes in their local landscape.

Objectives

The intent of this study is two-fold:

1. To review the transformation of physical form and social conditions of Canadian Prairie Towns in order to gain an understanding of current trends and issues that are the driving forces of town planning and development in the latter part of the 20th Century.
2. To demonstrate through design how these forces affect greenspace and community enhancement projects in agro-Manitoba towns; specifically the Town of Birtle, Manitoba.

Process

This study was initiated because of a recognized need for regional/ local design considerations (guidelines) and principles of ecology when planning greenspace enhancement projects in rural Prairie communities. The author's experience in agro-Manitoba communities suggests that a considerable amount of development taking place in these communities ignores the regional and cultural identity associated with individual places.

Once the objectives were identified, the project progressed through the following stages:

1. Literature reviews provided further analysis of prairie community development ranging from the initial establishment to modern conditions.
2. Economic, environmental, and social trends were examined to establish design requirements for future development.
3. The needs and visions of agro-Manitoba community were explored through interviews with rural residents and experts in the field, visits to rural communities (primarily Birtle, Manitoba), and analysis of existing projects.
4. Based on these explorations, greenspace enhancement and community walkways were identified as a valuable development opportunity in communities as part of their current transformation.
5. Design guidelines, suitable for rural Prairie communities, were developed for greenspace/greenway enhancement projects.
6. These design guidelines, along with other considerations pertaining to agro-Manitoba communities, were applied to a greenspace enhancement proposal for the Town of Birtle, Manitoba.
7. This is followed by an overall discussion along with recommendations for future design considerations in agro-Manitoba communities.

The work was guided by local consultations in addition to research conducted by authorities in the areas of prairie transformation and greenway development.

¹ Satadal Dasgupta, *Rural Canada: Structure and Change*, (Queenston, ON: The Edwin Mellen Press, 1988).

² Killarney Collegiate Environmental Club, *Activity Documentation*, (Killarney, MB, 1992).

³ "Carman's Community Pathway to Active Living," *Prairie Garden*, (Winnipeg, MB: The Prairie Garden Committee, 1996), p. 62.

⁴ *Community Horizons*, No. 10, (New Brunswick: Mount Allison University, 1997), p. 1.

⁵ Gerald Hodge, *Planning Canadian Communities: An Introduction to the Principles, Practice and Participants*, 2nd Edition, (Scarborough, ON: Nelson Canada, 1991), p. 305.

2. Rural Community Development

Town Establishment

The establishment of Canadian Prairie towns coincides with the transcontinental railroad construction that accompanied or preceded settlement mainly between 1871 and 1891.¹ Many towns were developed in anticipation of the railway passing through them as part of the infrastructure needed to support commercial farming, the main occupation of the settlers. According to Rees,

the railways were built through largely unsettled territory, (and) the railway companies inevitably became the chief promoters of town sites. The distance between the towns was determined by the economic distance for hauling grain at the time when local transportation was horse-drawn... These transshipment centres became the distributing points for supplies (e.g., agricultural implements, coal, lumber, and general merchandise)... The result of this method of settlement is that (Canadian Prairie) towns are arranged along the railways like beads on a string. They appear, heralded by the elevators, as regularly as clockworks—as though a giant, armed with a rubber stamp, had marched along the lines and impressed town sites at regular intervals upon the prairie.²

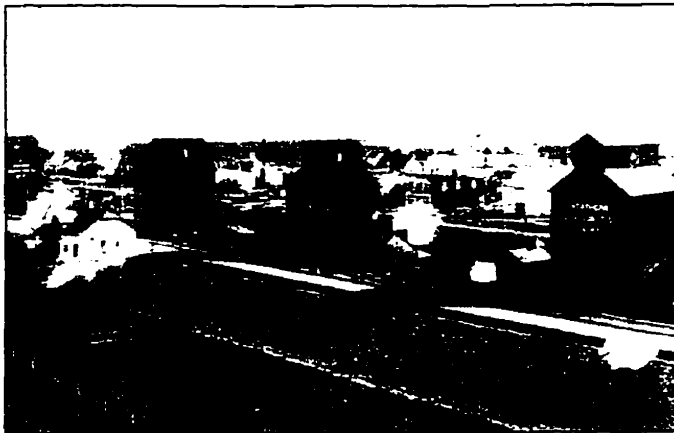


Figure 2.1 Grain Elevators in Dauphin, Manitoba in 1906 emphasizing the importance of rail transport in Prairie Towns at the turn of the century (B. Silversides)

Canadian Prairie towns had similar physical settings, layouts and functions to perform: there was little variety in the early patterns of land use.³ The traditional utilitarian form of the Canadian Prairie town emphasized railroad linkages and a central corridor—main street. Early prairie town form expressed an ‘inside-out’ development and that also was how the town was experienced.

Goods and people typically arrived at the railway station and worked their way outward through successive layers of public and social functions. The railway station and grain elevators, situated along the railroad tracks, were not only the first things that people saw, they were the social, cultural and economic focal points of the community, and were imbued with many layers of meaning and association.⁴

Based on this design, the Canadian prairie town can be described as a distinct morphological type. Despite the tendency towards standardization in the gridiron plan and building form, there were sufficient variation from town to town, and enough differences in local skills and techniques, that each town had an opportunity to develop a unique identity.⁵

Town Transformation

As the network of highways and rural roads was improved, the original 6-10 mile spacing of towns, based on horse and wagon capabilities, proved to be obsolete as farmers began to use trucks for transporting goods. Eventually a hierarchy of towns developed. A series of changes to town form and function are associated with the shift in transportation methods, contributing to what can be considered an 'outside-in' experience of the town. 'Entry' points started to provide fast-food restaurants, service centres, automobile dealerships and other businesses, causing the focus on the town centre to decrease and resulting in a decline of the original commercial main street.⁶

Spatial restructuring and modernization coincided with the period of economic growth that followed World War II and changed the appearance and function of many prairie towns. Technological change, increased ease of transportation of people and goods, and improved information transfer through innovations in communication made it possible for a wider array of expression and technique. While potentially broadening the palette of available town form, standardized technology, market forces, and modern architecture started to dominate town form. Consequently, townscapes similar to suburbs and urban centres were

produced which eliminated the functional elements and symbols of the early prairie townscapes.⁷

More recently, competition and mechanization of agricultural practices has led to a shift from small family farms to large corporate agri-businesses in response to the prairie economy experiencing a major structural transformation. Consequently, some prairie towns, along with their grain elevators (a significant economic and social symbol of the traditional prairie town) continue to disappear from the prairie landscape.⁸ The remaining towns, originally formed to respond to specific local needs are evolving into regional centres that are more closely linked to the international community as a result of economic and social changes.⁹

The shift that has taken place in agriculture is also reflected in population changes in the rural landscape. As farms increased in size, the rural population decreased. In some cases, this resulted in an increase in local town population, while in others cases, it resulted in an overall population decrease in both areas. Census data between 1961-1996¹⁰ indicates that the majority of rural municipalities in agro-Manitoba, exclusive of municipalities within the Winnipeg fringe area, have decreased in population for many years. Although the decrease in population in agro-Manitoba is not as severe as in more remote northern areas of Manitoba (Figure 2.2 - Figure 2.4), it has had a significant impact on the physical, economic, and social structure of agro-Manitoba. As a result, some communities have disappeared, some continue to decrease in size, and others stabilize or grow.

During the 1980's and early 1990's, many towns in agro-Manitoba, including Morden, Killarney, and Stonewall, took advantage of government assistance provided through the Manitoba Mainstreet Project in an effort to enhance downtown areas and the mainstreet corridor. Using standard design elements in each of the towns led to greater standardization and similarity throughout agro-Manitoba. As a result, this initiative is one of the contributors to the ongoing deterioration of the cultural heritage and local identity amongst many agro-Manitoba communities.

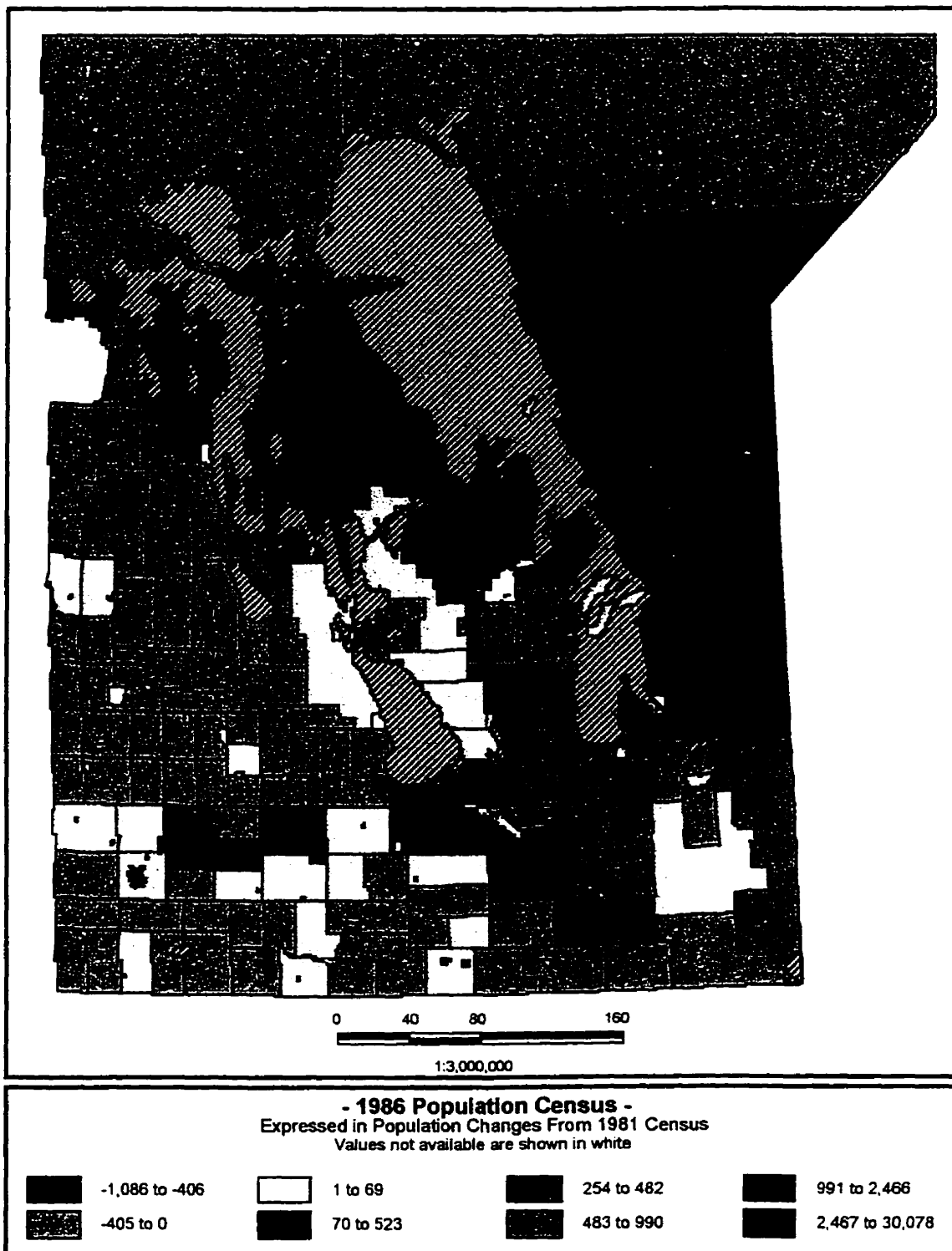


Figure 2.2 Census Data on Manitoba Population Changes 1981-1986 (PFRA GIS Unit)

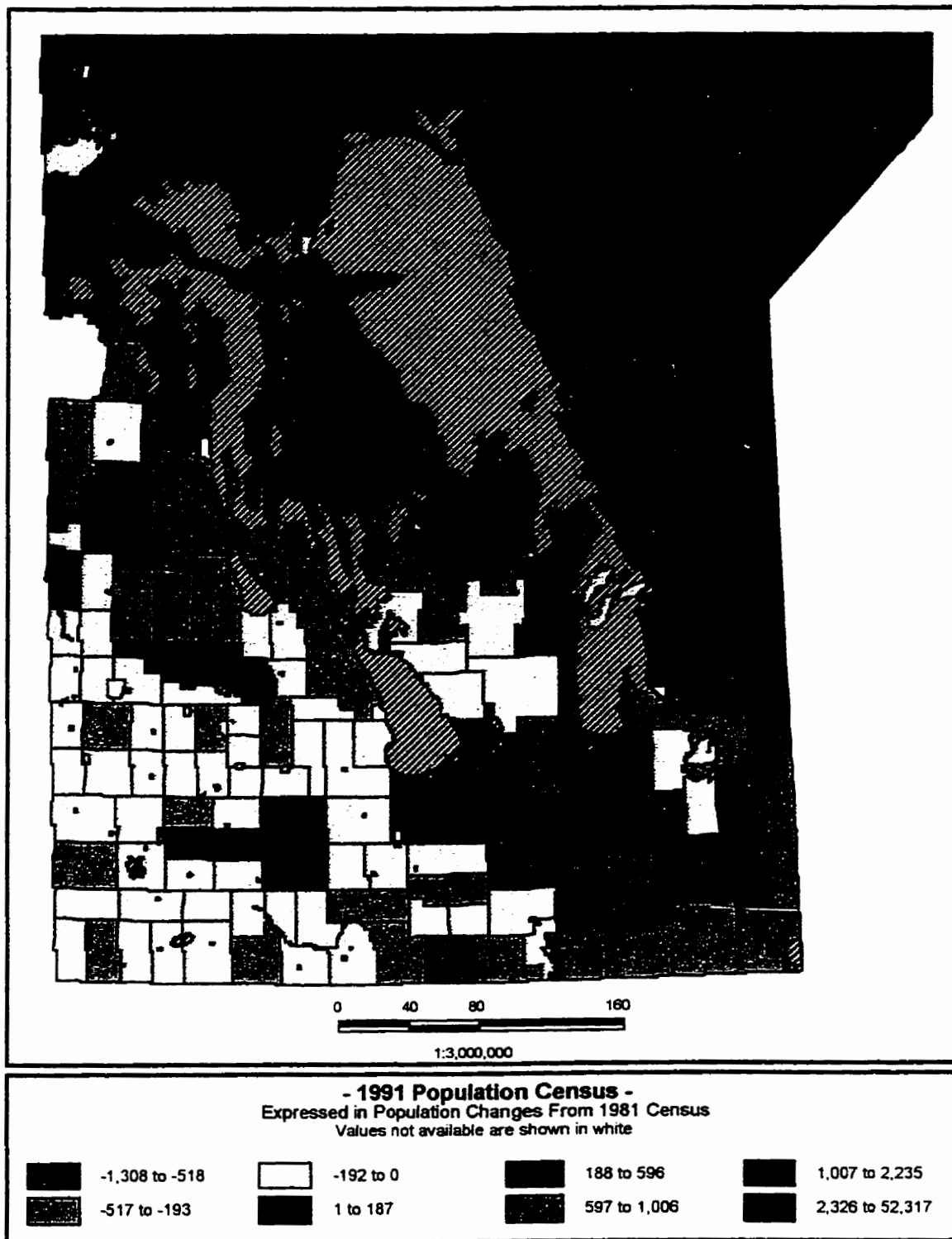


Figure 2.3 Census Data on Manitoba Population Changes 1981-1991 (PFRA GIS Unit)

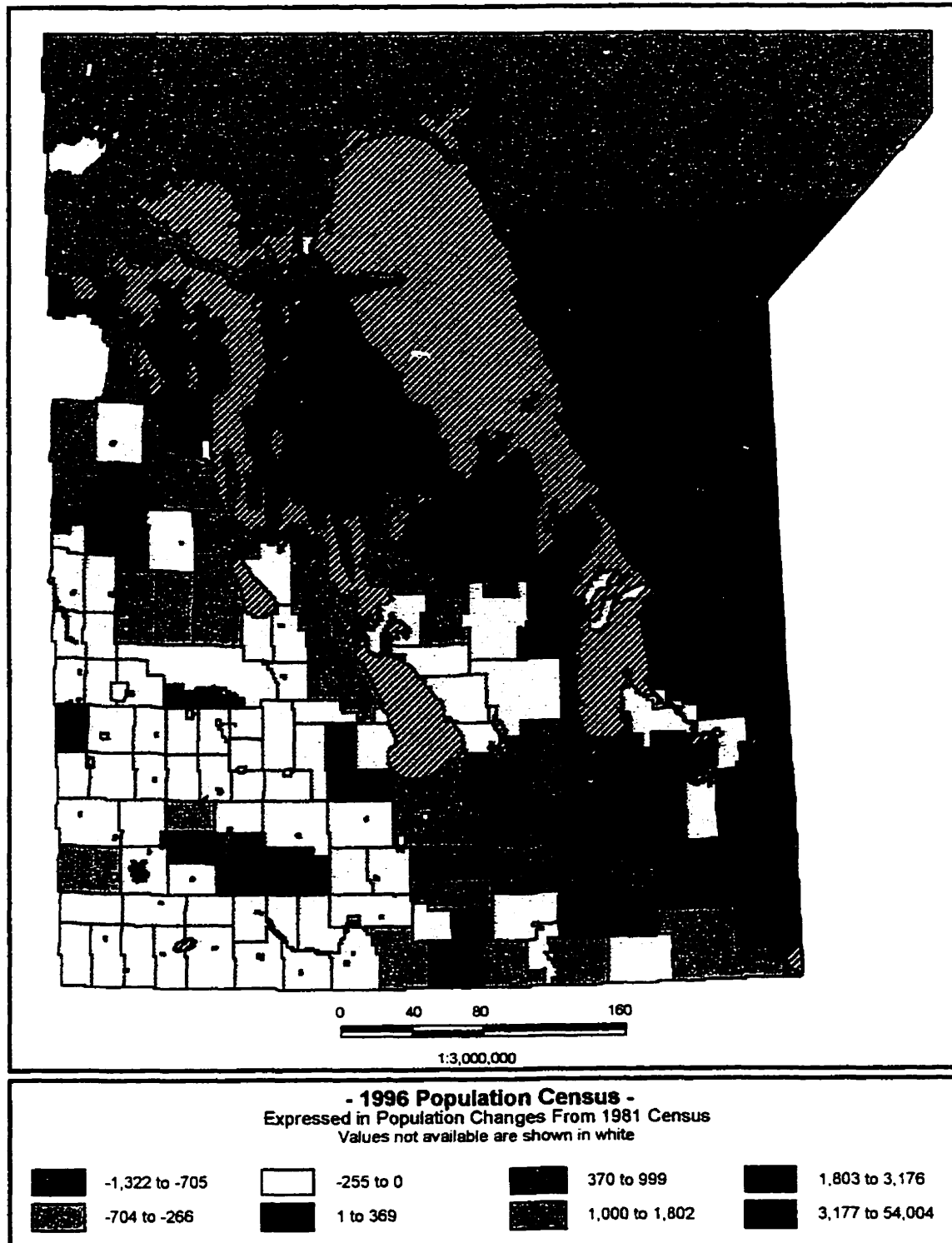


Figure 2.4 Census Data on Manitoba Population Changes 1981-1996 (PFRA GIS Unit)

In addition to province-wide initiatives, individual agro-Manitoba communities also have a history of jeopardizing their heritage and identity by approving development that does not respect the regional character and the scale of the community. For example, recent construction of apartment blocks and senior citizen complexes within the Towns of Killarney and Winkler have ignored the local scale of these communities. As developers or interest groups propose development projects, many communities see the financial growth and the employment opportunities associated with the project and feel that they have no choice but to accept such offers. Due to many developers lacking a more comprehensive understanding of rural conditions, design skills applicable to large urban centers often are imposed on the rural situation¹¹ where they fail to respond to local conditions.

Current Trends

The function of prairie towns has changed because of the physical, economic and social transformations that have taken place. Yet, towns remain as an integral part of the agricultural milieu and physical structure of the Canadian Prairies. Some people continue to be attracted to small towns and the lifestyle they present.¹² Towns that have been able to grow and diversify due to changes in legislation and the rural economy are able to offer greater opportunities for employment and financial investments allowing those who prefer rural environments to either stay in, or relocate to them.¹³

Economic Diversification and Adaptation

Agro-Manitoba recently has seen significant changes in the agricultural economy. In 1995, the Western Grain Transportation Act Fund (WGTAFF) was eliminated which stopped grain transportation subsidies to farmers. The greatest impact was on the Province of Manitoba because of its location in central Canada. Consequently, grain transportation costs in Manitoba became the highest in the nation. This change provided an opportunity for diversification and value-added industries to expand within Manitoba's agricultural sector. To assist with the process, adaptation councils such as the Manitoba Rural Adaptation

Council (MRAC), were established throughout Canada. These changes promote expansion and diversification of both livestock and crop production. Through the production of specialized crops such as herbs and vegetables, and the raising of different livestock such as bison and elk, rural communities are in a position to attract industry that focuses on processing, packaging, and marketing of the raw products. A number of communities have worked hard to develop infrastructure including natural gas and water distribution systems, water treatment facilities, and roads to support these new industries. Some rural communities have made use of Community Futures Corporations or have hired Economic Development Officers to assist in identifying and pursuing new economic development opportunities.

Population Changes

In response to the decrease in rural population, some towns in Manitoba have made an effort to bring people back to rural Manitoba. A number of innovative approaches have been used to accomplish this task. For example, some communities have held advertising campaigns on a national basis in order to sell local real-estate and bring new residents to the community. The Town of Rosburn, Manitoba is one community that has carried out such a campaign. The combined population of the town and the surrounding farm community rose from 1289 in June of 1993 to 1332 in September of 1994.¹⁴ Since population is an important indicator of community and economic development, the growth in some of the rural population may be attributed to investments being made in rural development by all levels of government.¹⁵

Very recent population growth is evident in a few areas of agro-Manitoba. Economic growth in the Winkler-Morden, Swan River and in the Brandon area; recreational activities in the Interlake and Whiteshell regions; and rural residential development in proximity to the greater Winnipeg Region have been identified as the key factors in population growth. An aging rural population accompanies the population changes, especially in small towns.

Tourism

In a 1996 task force report, rural Manitobans indicated that they would like to see more initiatives in identifying, developing, and promoting rural Manitoba's potential and actual tourist attractions. Tourism was ranked as the second highest opportunity for development, following food processing and preceding the cattle industry (Figure 2.5).¹⁶ Rural communities realize that tourism expenditures impact the retail and service sectors especially restaurants and overnight accommodations. In fact, most rural businesses are affected by visitor spending.¹⁷ In attracting tourism, many communities can make use of their local landscape. For example, Crowsnest Pass in Alberta restored its historic mine site and established hiking trails throughout the area. As a result, tourism makes up one-third of the local economic base.¹⁸

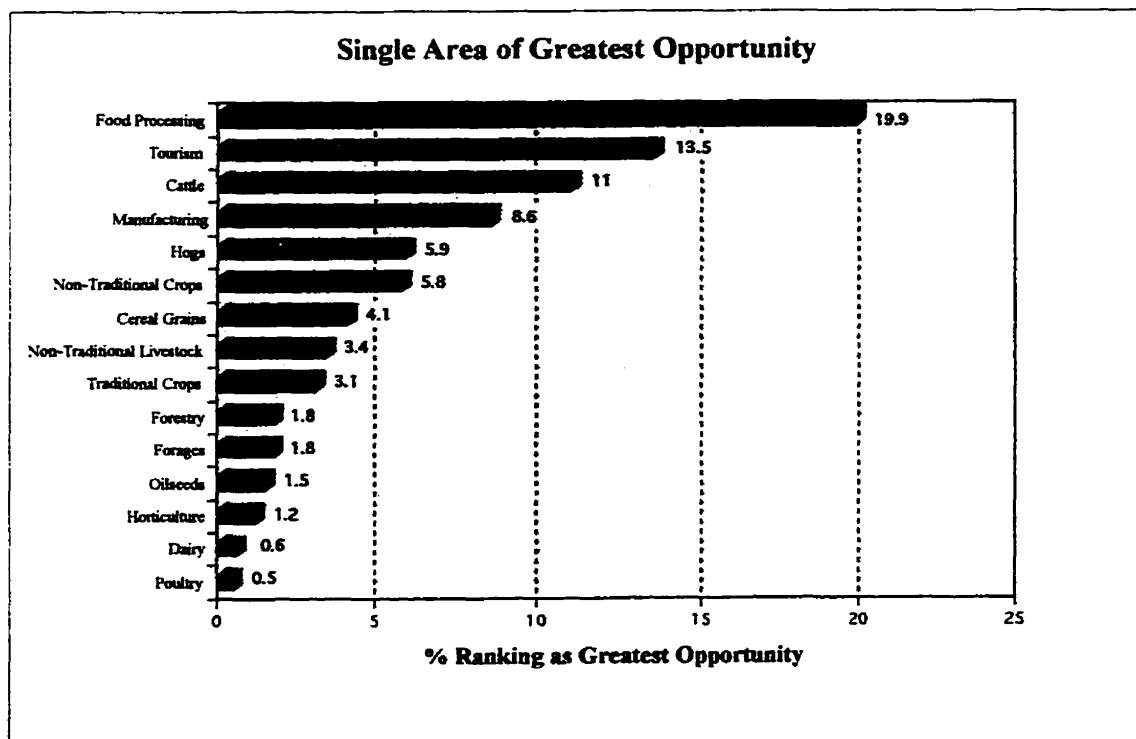


Figure 2.5 Rural Manitoba Responses to a survey conducted in 1996 on Areas of Greatest Opportunity for Future Development (Manitoba Departments of Agriculture, Rural Development, and Industry, Trade and Tourism)

In order for tourism to be successful on a regional basis, it is important to create an overall tourist development strategy. There must be coordination and cooperation amongst communities. By identifying and coordinating resources and activities at a provincial level, the rural tourism industry will be more effective and efficient than each individual community initiating its own tourism strategy.¹⁹

Local Expression

Through what appears to be an increasing deterioration of a sense of place in the North American landscape,²⁰ towns have come to realize that they must rely on their own resources²¹ to develop an attractive image for economic development rather than depending on outside developers. While it is possible for rural communities to borrow design ideas, they must adapt them to their local conditions²² as a response to local needs and character. The Town of Gimli provides a good example of how local character can be incorporated into a downtown revitalization project by making use of design elements that reflects the local fishing industry.

Small towns have found that many approaches that are successful in large urban centres and medium sized communities, do not work in small towns,²³ and that one big project is not going to be the solution²⁴ either for maintaining regional identity or enhancing the local economy. Therefore, small towns are starting to be more proactive in finding innovative approaches to revitalizing their physical landscape. Instead of providing all the solutions,²⁵ design professionals, through project and process facilitation,²⁶ can assist communities in developing design solutions that maintain the regional character by actively involving interested members of the community.

Environmental Awareness

A significant growth in environmental teaching has occurred in Canadian classrooms. As a result, children now enrolled in school are likely to grow up with noticeably different

attitudes than their parents, about issues such as consumption and waste. Environmental topics tend to be popular with both teachers and students. For example, almost every school in the Vancouver district has some sort of on-going environmental project during the school year as teachers try to instill some environmental awareness.²⁷ In Manitoba, a number of schools have taken on similar initiatives. Springfield High School in Oakbank, Manitoba is one school that has started a marine biology program that allows students to research specific topics relating to marine biology and travel to other parts of the world to gain personal exposure to their research topic.

Efforts to improve natural areas will assist both the community and its residents. A physical and psychological reward is gained from working in the outdoors, exercising with friends, and assisting in clean-up efforts of natural areas. Adopting a creek, a marsh, a pond, or a woodlot, or other opportunities for active involvement in improving the local community, will develop a sense of place and reduce daily stress patterns in residents.²⁸

Many of the small towns in Prairie Canada are situated along or near natural amenities. Rivers, for example, act as corridors for the movement of wildlife. Wildlife not only need corridors for habitat, but also for migration. By preserving and maintaining these places in ecologically, both wildlife and rural communities will benefit. Therefore, the general approach to management of riparian zones should be one of stewardship rather than urban development.²⁹

The shift that has taken place in social attitudes and perceptions has led many cities and towns to preserve areas that only a few years ago were viewed as derelict landscapes. In parts of western Canada, even small aspen-filled ravines are now considered worthy of preservation³⁰ while previously they were considered farm land that had not yet been cleared.

Trails and Pathways

Greenways, walkways, and trails have been popular for some time in many parts of the world. In western Canada, this concept was limited to urban centres or designated park areas until a few years ago. Such projects are now spreading across the rural landscape.

Enthusiasm for pathways and greenspace conservation has been demonstrated in a number of agro-Manitoba communities including Carman, Souris, Somerset, Minnedosa, and Killarney. Projects vary from rails to trails, to urban walkways, to habitat conservation and rehabilitation. According to the Regional/Urban Design Assistance Teams (R/UDAT), trails, pedestrian walkways, and bike paths are today's most visible public uses of the natural areas but there is still a greater need for more extensive, more continuous systems.³¹

¹ Gerald Hodge, *Planning Canadian Communities: An Introduction to the Principles, Practice and Participants*, 2nd Edition, (Scarborough, ON: Nelson Canada, 1991), p. 43.

² Ronald Rees, "The Small Town of Saskatchewan," *Landscape*, (Vol. 18, No. 3, Fall, 1969), p. 30.

³ Rees, p. 30.

⁴ Beverly Sandalack, *Continuity of History and Form: A Canadian Prairie Town Case Study*, (Edmonton, AB: CSLA/AACP Congress, 1997), p. 98.

⁵ Sandalack, p. 97.

⁶ *Ibid.*, p. 98.

⁷ *Ibid.*, p. 98.

⁸ Brook Silversides, *Prairie Sentinel*, (Calgary: Fifth House Publishers, 1997), p. 4.

⁹ Sandalack, p. 97.

¹⁰ Population Changes in RM's & LGD's in Manitoba, 1961-1996, (Statistics Canada, 1969-96).

¹¹ Hodge, p. 305.

- ¹² Sandalack, p. 98.
- ¹³ Satadal Dasgupta, *Rural Canada: Structure and Change*, (Queenston, ON: The Edwin Mellen Press, 1988)
- ¹⁴ John Keating, "Little Towns that Could," *Canadian Living*, (June 1995), p. 74.
- ¹⁵ Stevenson, p. 22.
- ¹⁶ Interim Working for Value Task Force Meetings, (Manitoba Departments of Agriculture, Rural Development, and Industry, Trade, & Tourism, 1996), pp. 6-7 & Appendix.
- ¹⁷ Keating, p. 75.
- ¹⁸ *Ibid.*, p. 75.
- ¹⁹ Interim Working for Value Task Force Meetings, pp. 6-7
- ²⁰ Douglas Paterson, *et. al.*, "LA Forum: Regionalism Reconsidered," *Landscape Architecture*, (Washington, DC, Vol. 74, No. 4, April, 1984), p. 70
- ²¹ Harry L. Garnham, *et. al.*, "LA Forum: Town Council," *Landscape Architecture*, (Washington, DC, Vol. 80, No. 2, February 1990), p. 62
- ²² Paterson, *et. al.*, p. 70.
- ²³ Garnham, *et. al.*, p. 62.
- ²⁴ *Ibid.*, p. 63.
- ²⁵ *Ibid.*, p. 63.
- ²⁶ *Ibid.*, p. 62.
- ²⁷ Mark Nichols, "The Green Generation," *Maclean's*, (September 17, 1990), p. 91.
- ²⁸ Wickett, *et. al.*, "Why Adopt a Natural Area?" *Little River Stewardship Study*, (Windsor, ON: The Little River Enhancement Group [Lil'Reg], 1994).
- ²⁹ R/UDAT, *A New Attitude About the River: Red River Visions Fargo-Moorhead*, (Fargo-Moorhead: R/UDAT, 1989), p. 12.
- ³⁰ Paterson, *et. al.*, p. 72.
- ³¹ R/UDAT, p. 23.

3. Rural Planning

Responsibilities

In the latter part of the 20th Century, towns and municipal governments in agro-Manitoba make planning decisions that support current needs and future growth based on recommendations made from outside consultations and, to some extent, speculation. As most planning decisions are focused on economic gain, they often are based on industry or tourism potential. Although assistance is available through regional planners or economic development officers, the local town or municipal council is most influential on local planning issues.

As financial and human resources are limited within many rural communities, many proposed projects that do not deal directly with economic development or local infrastructure are not supported by local government. Hence, community organizations and individuals who would like to see such projects implemented must find both internal and external resources to support their projects.

Resources

Various resources are available to agro-Manitoba communities in seeking assistance for developing, planning, and implementing projects or ideas. Financial, material, professional, and volunteer resources include local organizations, provincial and federal government, academic institutions, and private industry. Local interest groups or businesses can also be approached for support. Additional assistance can be gained through Community Economic Development Officers that are employed by federally funded Community Futures Development Corporations. Manitoba Conservation Districts may be of assistance if the project lies within their boundaries and deals with landscape conservation or rehabilitation. Province wide, communities can approach the Departments of Rural Development, Trade and Tourism, Agriculture, and Natural Resources; the Union of Manitoba Municipalities;

and the Manitoba Rural Adaptation Council (MRAC) for support. Federally, the Departments of Western Economic Diversification and Agriculture and Agri-Food Canada are key resources for agro-Manitoba communities. Manitoba's universities, including the Rural Development Institute in Brandon and the Department of Landscape Architecture at the University of Manitoba also can be of assistance to rural communities.

In addition to this support, there are funding programs in place through which communities can apply for assistance. They include the Rural Economic Development Initiative (REDI), the Millennium Fund, the Sustainable Development Innovations Fund, the Heritage Grants Program, the Green Team Program, Environmental Youth Corps, the Shell Canada Fund, and the Manitoba Hydro Fund.

Although financial and technical resources are available to rural communities in their efforts for development, most of available technical assistance available is not skilled in the area of landscape planning and design. Consequently, communities have to employ external consultants to assist with this process. Communities have to be more self reliant when implementing projects. In achieving this, public participation and local buy-in are the key components of making any project happen.

Public Participation

Proposed community projects need to be presented to local residents prior to implementation if acceptance is to be gained. In many instances, local residents prefer having input into the proposal at various levels to give them a greater sense of ownership and responsibility for maintenance. A public participation process ensures that recommendations and concerns can be addressed prior to project implementation. Various participation methods can be applied including consultations with existing organizations or interest groups, conducting surveys, holding public forums, or initiating task groups.

In most communities, a number of key individuals tend to be involved in numerous volunteer capacities. As a result, these individuals tend to make many decisions on behalf of the community in addition to donating many hours of volunteer time to community efforts. Communities have found that this type of structure often leads to 'volunteer burn-out.' Recruiting new volunteers can alleviate this condition, but this has not always been successful as a well integrated team takes time to develop and a good mix of personalities and personal skills are required.

Community initiated projects have proven to be developed successfully when the responsibility of the project is given to someone who will lead the group. This can be achieved in two ways. One method is to have one motivated person or a group of people from the community take the lead in guiding the project and seeing it through.¹ Another method is to have a facilitator or coordinator assist the group with both the decision making and implementation process. The facilitation process provides a mechanism for a community or interest group to share opinions and build consensus on a proposed project. A facilitator may be needed at various stages of the decision making process ranging from setting the

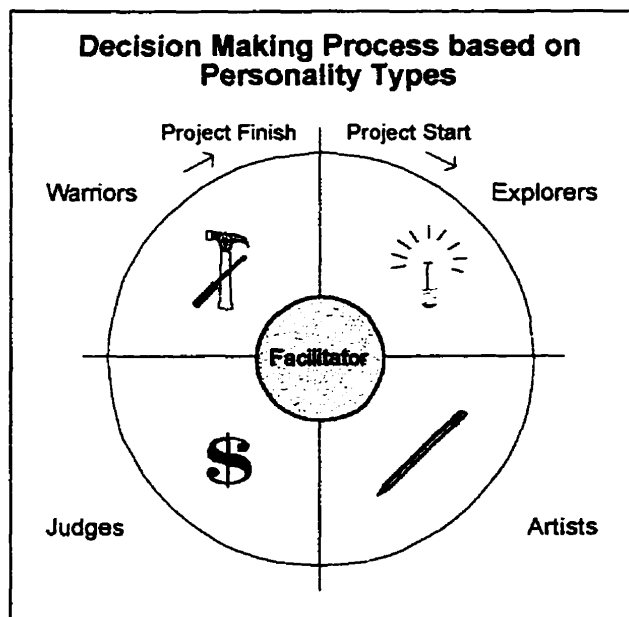


Figure 3.1 Facilitation process based on personality types of participants (M. Applin)

initial objectives, to reviewing alternatives, to plan development and implementation. Facilitators have found that by guiding the decision making process through a series of focus groups, the project will not only be strengthened by individual interests and expertise, but it also ensures that the project is carried out in a way that is acceptable by the community.² This type of process can be based on personality types of community volunteers. Using this process, 'explorers' of the community, as the first focus group,

are asked to define the project they would like to see implemented. Next, 'artists' of community, as the second focus group, are asked to work on the creative end of the project. The 'judges', as the third focus group, are asked to develop feasibility strategy and a budget, while the 'warriors', as the fourth focus group, are asked to implement the project (Figure 3.1).³ This method has not been widely applied in rural Manitoba communities, but it can be considered as one approach communities of all sizes can use in planning and implementing new projects.

¹ Cynthia Cohlmeier, Personal Contact, Winnipeg, Manitoba, 1998.

² Maureen Applin, Personal Contact, Dauphin, Manitoba, 1998.

³ Applin, 1998.

4. Greenways and Pathways

Overview

Although the term “greenway” is relatively new, the ideas it embodies are not. The term combines the syllable “green” from the British green belt, and “way” from the American parkway.¹ The key to greenways is linkages. These linkages not only connect park spaces and recreational areas, but they also provide continuous corridors of natural vegetation and open spaces that establish the connectivity that is needed to support healthy populations of plants and animals.²

One of the reasons for greenway establishment becoming more prominent is a lack of funding for traditional parks and open spaces. Existing greenways have proven that ecological benefits and lower development and maintenance costs are gained through such initiatives.³ Other reasons for greenway development include a greater awareness of environmental issues such as protection of riparian habitat and establishment of wildlife corridors. Furthermore, greenways offer opportunities that are equal to or better suited for some recreational activities such as cross-country skiing than some traditional parks.

Environmental Benefits

Diversity is a fundamental characteristic of healthy natural systems which provides for a variety of adaptive capabilities in living things. As natural landscapes become more scarce and fragmented, especially in agricultural and urban areas, the diversity of the local flora and fauna declines. The remaining pieces of habitat become isolated amongst the surrounding agricultural fields or urban fabric. The major factor that contributes to declining diversity of species within these remnant areas is the lack of connectedness amongst them. Another factor is that the remnant areas are often not large enough in size to sustain some of the species (i.e. those that require interior forest conditions). Greenways are a tool for

providing the linkages needed between fragmented habitat areas. They provide a framework that encourages greater wildlife movement, reproduction, and diversity.

The degree of habitat fragmentation is generally less pronounced in rural towns than in large urban centres. Over time, these areas also will suffer from stresses that affect habitat diversity. Some rural communities have an advantage in that they can be proactive in protecting the integrity of local ecosystems rather than piecing together remnants within an urban environment.⁴

Many areas that currently require high maintenance, such as mowed lawns and formal parks, and are not actively used for social activities, can easily be converted into wildlife habitat.⁵ As a result, frequent repetitive maintenance can be eliminated, reducing overall maintenance and energy costs. Neglected and run down areas throughout the built environment can be rehabilitated and linked to the overall greenway system. The promotion of regeneration of natural spaces in urban environments is becoming a common practice as part of addressing new issues and moving away from traditional planning practices.⁶

As most greenways incorporate pathways, they provide direct linkages between places. In doing so, residents are motivated to use the pathway as an alternative to other modes of transportation. In some instances, this can decrease vehicular traffic, especially for short distances.

Greenways are a tool of sound environmental planning. Issues such as soil and water conservation and land management are in need of ongoing attention, and may be either part of, or in addition to local greenway development.⁷

Economic Benefits

Research conducted in the United States of America concluded that there is an increase in property values for land adjacent to protected greenways. A report by the U.S. National Park Service (1990), *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors*, indicates that increase in property value ranges from 5 to 32 percent.⁸ An increase in local tax revenues and increased commercial activities such as concessions and recreational equipment rentals (e.g. boats, bicycles) also can be associated with greenways.

The tourism industry also benefits from greenway establishment. For example, the San Antonio Riverwalk is considered the second most important tourist attraction in the State of Texas.⁹ There are many opportunities in Manitoba for developing prosperous tourist attractions. Greenways and trails are one method of supporting the rural tourism industry with spin-offs for local restaurants, overnight accommodations, retail businesses, and other recreational facilities.

In most situations, greenways follow linear features such as riparian corridors, abandoned rail lines, or utility right-of-ways which are areas that do not readily attract economic development. With proper planning, greenways can convert low-value and often neglected remnants of urban fabric into environmental and economic assets.¹⁰

Social Values

The success of greenway development in the United States is based on more than massive public expenditures. It stems from a clear vision of the opportunities greenways offer, and from strong individual and public commitment to that vision. Creating a greenway can foster a strong sense of pride and accomplishment within a community, along with assisting local people in focusing on the kind of place they want for their children.¹¹

Generally, there also is a high degree of community involvement in the establishment of urban greenways. Combining public dollars, volunteer skills, labour, and private investments

in order to make a greenway project possible can bring out the most positive efforts within a community.¹² In this process, local residents and other users will not only assist with the overall maintenance and management of these areas, but they also will assume greater ownership and become more protective of their urban greenspace. Vandalism may be reduced as a result.¹³

The establishment of greenways in urban areas provides an opportunity for users to renew their contact with nature¹⁴ and with one another in what can be considered a community common. Whereas city dwellers traditionally have enjoyed natural features in isolation, greenways merge these features into the daily activities within the urban fabric.¹⁵ Urban dwellers benefit from these environments in four ways: emotionally, intellectually, socially, and physically.¹⁶ Greenways benefit the overall health of users by providing an opportunity for exposure to nature and by providing recreational opportunities. These networks allow for spontaneous recreational activities, such as walking, biking, and cross country skiing, rather than structured recreational activities. Such local amenities often are desired by an aging population.¹⁷

Many historic and cultural places embedded in the urban fabric can be linked through a greenway system. Users gain a greater appreciation and understanding of these places and the contribution they are making to the community's heritage and social values. Increased visibility of these places results in greater efforts being devoted to maintenance in order to conserve these important landmarks within the community. Their existence and contribution to social values can be enhanced through the provision of interpretive information such as publications or signage along the linkage system.

Educational Opportunities

Interest in the preservation and rehabilitation of urban wildlife and habitat has increased. A contributing factor is that continued environmental degradation is evident in most urban centres.¹⁸ Rural communities are joining their urban counterparts in becoming active in

environmental education. Relatively few botanists, naturalists, and zoologists were interested in studying urban wildlife in the past. Today, this field has become more fascinating to a much broader audience. As part of adult and children education programs, more people are becoming interested in identifying plants and animals, while others are keen on campaigning for the preservation of existing greenspace and the establishment of new nature areas, or are interested in assisting with the management of wildlife habitats.¹⁹

Greenways and other greenspaces have been identified as the vital building blocks for environmental education of this and future generations.²⁰ For example, they easily can be utilized for environmental education programs that are now a part of many local school curriculums. Other environmental education initiatives can be accomplished through information (e.g. signage or pamphlets) made available along designated walking routes such as bike trails or pedestrian walkways.

Related Works

England is well known for its many trails and urban walking routes which continue to be popular with visitors, students, and local residents. Although these trails have been integrated into the urban fabric for many years, they were not integrated into larger greenway systems until recently. An increasing concern for the environment has led to more integrated systems with greater interpretation means along trails. This provides the greatest learning potential for residents as they are made aware of the place they live in and walk through on a daily basis.²¹

There are more than 500 greenways in the United States, ranging in size from small neighbourhood parks to substantial regional open spaces. For example, the Bay and Ridge trails are substantial twin greenways around the City of San Francisco, each being approximately 640 km long.²²

In Canada, greenway systems have been a part of planning and development in many urban centers including Ottawa, Vancouver, Toronto, Calgary and Saskatoon for the past 40 years. In each of these greenways, the scope, planning method, form, and administration may differ, but the common characteristics of linearity, open space conservation, and connectivity of urban and natural areas are inherent in all of them.²³ This ecologically guided design approach of urban planning not only connects natural and urban systems, but it also relies on public participation and innovative government support.²⁴ Unfortunately, this approach has been limited to a regional planning approach in urban environments until recently. It is only within the last ten years that small community groups (e.g. Friends of Bruce Park in Winnipeg) and rural towns (e.g. Minnedosa, Carman) within Manitoba have applied similar concepts in improving their local environment.

Canadian Initiatives

Little River Watershed, Windsor, Ontario

In 1989, Concord Elementary School of Windsor, Ontario initiated a community clean-up day for the Little River Watershed as part of a Habitat 2000 project.²⁵ Parents, teachers and students participated in the effort which was recognized by a United Nations environmental award. The initiative expanded to further clean-up, trail development, tree planting, water quality monitoring, biological inventories and record keeping, fundraising, private land owner contact, promotion and enhancement of the Little River Watershed. The Little River Enhancement Group (Lil'Reg) was formed. Lil'Reg adopted the watershed, implemented improvements, educated students, the community and politicians, and published a "how-to" brochure to encourage others to implement stewardship projects. Members of Lil'Reg are all volunteers and include teachers, a naturalist, engineers, a policy analyst, a park maintenance supervisor, and landscape architect/planner.²⁶ As part of the watershed enhancement and greenway development, the group has been successful in initiating

various projects including a 16 km long walking and biking trail and the planting of over 5000 trees²⁷ through numerous partnerships. Partners include the Riverside Habitat 2000 Club (8 schools), Essex County Field Naturalists, Ministry of Environment and Energy, Essex Region Conservation Authority, Sandwich South Township, the City of Windsor, and The International Joint Commission.²⁸ An arboretum was added in the spring of 1992 as part of the City of Windsor's centennial celebrations.

The Little River Stewardship initiative has been fortunate in receiving significant financial support and it has been recognized across Canada through a number of awards and recognitions.

Moose Jaw, Saskatchewan

A public service program known as the Regional/Urban Design Assistance Team (R/UDAT), established to assist communities through recommendations for planning and action strategies, visited the City of Moose Jaw in 1992. R/UDAT assisted the community in developing a comprehensive economic development strategy for future action, revitalizing downtown activities, developing a comprehensive tourism strategy, linking up the open space network, recasting the image, defining the vision, and developing the implementation tools and tactics.²⁹ During this visit, which included extensive consultations, site visits, and late night working sessions, R/UDAT identified Moose Jaw as "having the potential for the development of one of the finest open spaces systems in Canada."³⁰ The work of R/UDAT determined that a "green belt" could be formed to link residential districts with other key districts and features within the city. Such a system would enhance the overall physical diversity and provide more accessible recreation opportunities to both visitors and residents of Moose Jaw.³¹

A trail, which is incorporated into the overall green belt system, provides a winter cross country ski route as well as summer bike/hike route and is continuous along a network of

creeks and roadways. The Rotary Club of Moose Jaw has initiated tree planting and trail development throughout the city's green space. Greater promotion of such community participatory activities should be encouraged to not only reduce capital expenditures, but also develop greater pride and a sense of caring by local residents of the community. These activities could be expanded upon to include the construction of park installations including benches, retaining walls, shelters, and play equipment. As a result, more amenity are provided throughout the community, along with job training for volunteers and youth that partake in this process.

Rural Manitoba Case Studies

Carman, Manitoba

The Town of Carman, Manitoba has developed a five kilometer community pathway for walking, jogging, cycling, and cross country skiing. The trail was developed along the

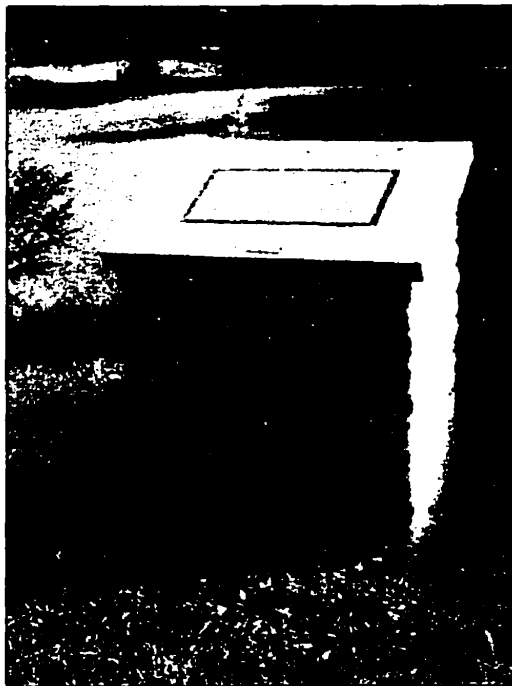


Figure 4.1 *Cairn along Community Pathway in Carman, Manitoba* (U. Holweger)

Boyne River. This project was originally identified in a 1989 development strategy for Carman and the surrounding area which was conducted by the Carman and Community Development Corporation.³² As a result, a pilot project was initiated along a 1.5 km stretch that was already informally used for jogging and cross country skiing. Private landowners gave permission for the public use of their property in support of the walkway. The pilot project was implemented through volunteer labour with most of the financial support stemming from the Town of Carman. The overwhelming support of the project led to an expansion that incorporates the whole community,

linking the business district, schools, residential areas, recreation facilities, senior citizen residents, the museum, the library, and community parks. Additional funding was provided by local businesses, private industry, the public sector, and foundations. Donations were also instrumental in developing the walkway. In 1995, an interpretive program was added. Today, the Carman Pathway to Active Living provides an opportunity for recreational activities and nature appreciation for many residents and visitors.³³

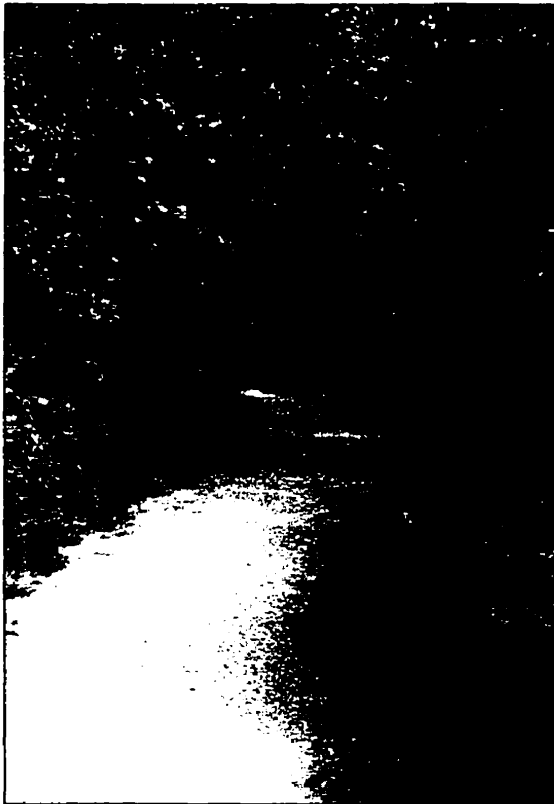


Figure 4.2 Community Pathway throughout Riparian Forest in Carman, MB (U. Holweger)



Figure 4.3 Pedestrian bridge crossing the Boyne River in Carman, MB (U. Holweger)

Minnedosa, Manitoba

Through the formation of a Heritage Committee in 1991, the Town of Minnedosa, Manitoba has been able to implement two trails that are linked within its community.³⁴ While the Heritage Trail connects landmarks throughout the heritage village, the Nature Trail links

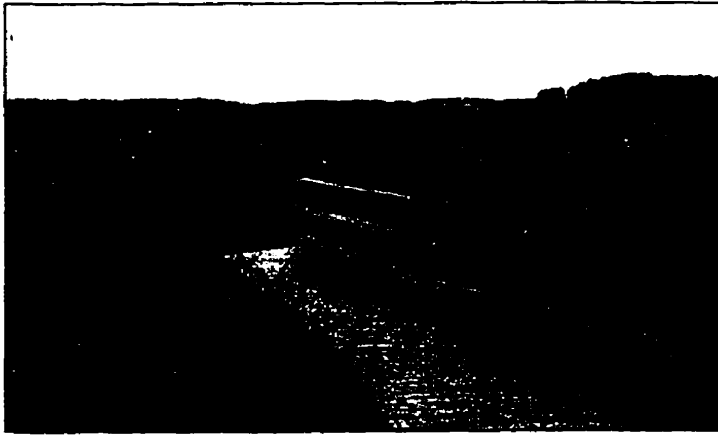


Figure 4.4 Portions of the Minnedosa nature trail consist of a boardwalk through willows and cattails along an oxbow of the Little Saskatchewan River (B. Roberts)

natural elements such as Minnedosa Lake to animal/wildlife features such as the Bison grazing area. Through the assistance of government agencies such as Manitoba's Department of Natural Resources and efforts of the local rotary club, cubs and scouts, and many volunteers, these two trails have become a recognized tourist attraction of the community.

Financial assistance for this initiative has been gained through grants (including Community Places and the Heritage Grants Programs) and local fundraising. Pamphlets and maps are used as interpretive guides for both trails.³⁵



Figure 4.5 Watch tower adjacent to nature trail in Minnedosa, Manitoba (B. Roberts)



Figure 4.6 Rotary Club Suspension bridge crossing the Little Saskatchewan River (B. Roberts)

Somerset, Manitoba

In 1995, a community pathway³⁶ was developed in the Village of Somerset, Manitoba. Most of the financial support for this project came from local fundraising efforts including furniture (i.e. benches and lights) purchases, walkathons, donations, and one government grant. Construction of the crushed stone pathway was carried out by local volunteers, who

donated their evenings and weekends to the project. Local wildlife habitat also has been enhanced along the pathway through the addition of purple martin houses.

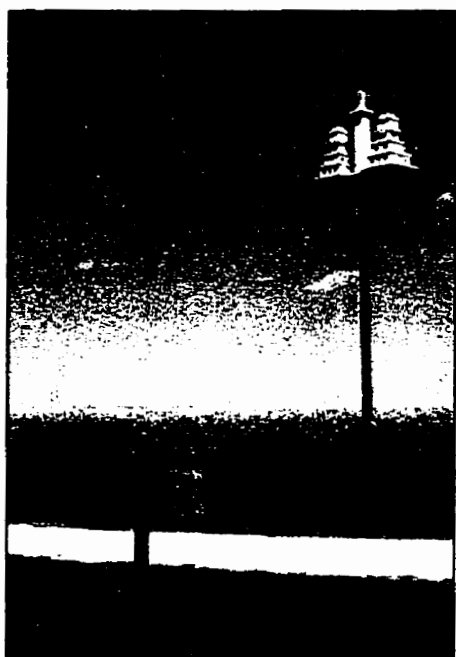


Figure 4.7 *Purple Martin Houses along the pathway (U. Holweger)*



Figure 4.8 *Plaque listing sponsorship at the start of the Sentier Somerset Pathway (U. Holweger)*

¹ Royal Commission on the Future of the Toronto Waterfront, *Regeneration: Toronto's Waterfront and the Sustainable City: Final Report*, (Toronto: Minister of Supply and Services Canada, 1992), p. 179.

² Royal Commission on the Future of the Toronto Waterfront, p.179.

³ *Ibid.*, pp.177-178.

⁴ *Ibid.*, p. 182.

⁵ R/UDAT, p. 12.

- ⁶ Janice Morphet, "Urban Green Space – Issues for the 1990's," *Town & Country Planning*, (July/August 1990), p. 199.
- ⁷ Royal Commission on the Future of the Toronto Waterfront, p. 182.
- ⁸ *Ibid.*, p. 186.
- ⁹ *Ibid.*, p. 186.
- ¹⁰ *Ibid.*, p. 187.
- ¹¹ *Ibid.*, pp. 180-181.
- ¹² *Ibid.*, p. 188.
- ¹³ Jacklyn Johnston, "Gaining Public Support for Wildlife in the City," *Green Cities: Ecologically Sound Approaches to Urban Space*, (Montreal: Black Rose Books, Ltd., 1990), p. 236.
- ¹⁴ Royal Commission on the Future of the Toronto Waterfront, p. 188.
- ¹⁵ Anne Whiston Spirn, *The Granite Garden: Urban Nature and Human Design*, (New York: Basic Books, 1984), p. 37.
- ¹⁶ Gordon, *et. al.*, p. 236.
- ¹⁷ Royal Commission on the Future of the Toronto Waterfront, p. 184.
- ¹⁸ Spirn, p. 37.
- ¹⁹ Gordon, *et. al.*, p. 235.
- ²⁰ Royal Commission on the Future of the Toronto Waterfront, p. 188.
- ²¹ Michael Hough, *City Form and Natural Process*, (New York: Routledge, 1984), p. 262.
- ²² Royal Commission on the Future of the Toronto Waterfront, p. 180.
- ²³ James Taylor, *et. al.*, "From Greenbelts to Greenways: four Canadian case studies," *Landscape and Urban Planning*, (Elmont, NY, V. 33, 1995), p. 47.
- ²⁴ Taylor, *et. al.*, p. 47.
- ²⁵ Wickett, *et. al.*, "Wildlife Update" *Little River Stewardship Study*, (Windsor, ON: The Little River Enhancement Group [Lil'Reg], 1994).
- ²⁶ Wickett, *et. al.*, Introduction.
- ²⁷ *Ibid.*, "Wildlife Update."
- ²⁸ *Ibid.*, Introduction.

²⁹ R/UDAT, "Our Community, our Future," *Study of Moose Jaw, Saskatchewan*, (Moose Jaw: The American Institute of Architects, 1992), p. 3

³⁰ R/UDAT, p. 13.

³¹ *Ibid.*, p. 13.

³² *Carman's Community Pathway to Active Living* (Winnipeg: The Prairie Garden Committee, 1996) p. 62.

³³ *Carman's Community Pathway to Active Living*, pp. 63-64.

³⁴ Manitoba Rural Development, *Manitoba's Community Round Tables*, (Manitoba: Community Economic Development Services Branch, 1998), p. 22.

³⁵ Darlene Martin, Personal Contact, (Minnedosa: May, 1998).

³⁶ Manitoba Rural Development, p. 50.

5. Design Guidelines

It is evident that a more holistic approach to design and planning needs to be considered in revitalizing small towns within agro-Manitoba. Establishing design guidelines or an overall framework is essential to elicit responsive solutions for the community. The guidelines must ensure that the regional identity is preserved¹ and that local residents are actively involved through a participatory design process.² Design guidelines, developed by Paterson, *et. al.*, for preserving regionalism, were applied in developing a greenspace enhancement project as demonstrated in Birtle, Manitoba. They are as follows:

1. Use the historic styles, colours and building materials of a region

Cultural creations of a region may favour certain motifs or styles that are important to that particular region.³ It is important to respect these regional identity features and incorporate, where appropriate, such styles or materials in order to maintain the “sense of place”.

2. Do as little as possible

The identity of a place comes from minimum intervention. In cases where the designer has difficulties in understanding the physical and social landscape, there is a tendency for overdesigning. Predetermined images can lead to predetermined design solutions being imposed on the landscape even though they may not be suitable for the site.⁴

3. Accentuate the process of what is there

Special attention must be given to the nuances and processes that give any locale its special qualities. For example, stands of native vegetation can be incorporated into the proposed project/development. Very little accentuation occurs within a typical urban landscape.⁵ This principle could be used more extensively in making a “better fit” for the proposed design into the existing landscape and town fabric.

4. Design for transparency

Making natural, social, and physical process visible to the end user is an essential component of environmental awareness and a necessary base for action at the regional level. Therefore, establishing the interconnectedness between nature and people needs to be a visible element of the design solution.⁶

In addition, consideration for ecologically based greenway planning that recognizes naturalized systems, principles of sustainability, public participation, and a lesser dependency on government also need to be considered.⁷ The following greenway planning considerations, developed by James Taylor, *et. al.*, also were considered in this process:

1. Form and Function

The physical form and functional uses of greenways have varied throughout history. In some instances, the greenway system has been the direct result of an imposed urban design concept, while in other instances it defines the boundaries of a natural system within an urban environment. It is no longer viable to design greenways in either of these fashions. As the trend for planning and design for greenways moves toward using natural systems as a primary determinate for form (removing edges and creating transition areas), traditionally imposed greenbelt concepts are no longer ecologically, socially, or politically viable. By protecting environmentally sensitive areas and cultural landscape features, and integrating ecological systems and human use functions in greenway development, a more effective and ecologically functioning system will be achieved.⁸

2. Responsiveness to natural systems

The long term viability of a greenway system is reliant on a comprehensive responsiveness to form and processes of a natural system. Natural systems must make up the primary framework for the greenway in order to achieve longevity. Projects that not only consider public acceptance and use, but also ecological integrity and sustainability, are more successful.⁹

3. Principles of sustainability

Applying principles of sustainability ensures that any development taking place maintains a balance of human needs, environmental functions, and economic development. Many greenway projects developed in Canada over the past 40 years, encompass some sustainability principles, but a comprehensive understanding of the principles has not always been achieved. To successfully demonstrate principles of sustainability, greenway planning has to merge all aspects of sustainability within the region.¹⁰

4. Public support and use

As greenway planning has evolved in Canada, accommodation of public participation has assumed an increasingly important role paralleling the progress made in many

other planning and design processes. Public support is needed for the long-term success of a greenway and the best way to gain this support is through public involvement throughout the planning process and in the implementation phases. For example, the Greater Toronto greenway used an approach that encouraged full communication and cooperation among all agencies and landowners. Implementation was to be carried out at the grass-roots level, with extensive involvement of local interest groups and government.¹¹ Public access, use, and understanding of the form are the greatest contributors to gaining public support. In addition, public support is greater when greenway systems conserve ecological systems and cultural features.¹²

In rural communities, it is very important to have local residents' input as part of the process in order for the design to be adopted and implemented. Therefore, participatory design, a process in which the members of the community actively participate in the design of their town,¹³ has to be incorporated.

Participatory design that applies to the entire community is often referred to as community design. According to Luther, "the concept of community design offers a new approach to creating a capacity within small rural communities to anticipate change, deal with change, and achieve preferred change."¹⁴ This process "offers an opportunity for citizens to take control of the design and planning process in their community in a manner that creates self-reliance and self-determination....Community design causes a new logical process in which the design is derived from the shared knowledge of many experts in the community and a shared vision representing the common voice of the community. In this approach, the community does not accommodate the design, the design accommodates the community."¹⁵ A community design process is applied in the demonstration project documented in this study.

¹ Douglas Patterson, *et. al.*, "LA Forum: Regionalism Reconsidered," *Landscape Architecture*, (Washington, DC: Vol. 74, No. 4, April, 1984), p. 70.

² Joseph Luther, "Participatory Design Vision and Choice in Small Town Planning," *Entrepreneurial and Sustainable Rural Communities*, (Sackville, NB: Rural and Small Town Research and Studies Programme), p. 37.

³ Paterson *et. al.* p. 73.

⁴ *Ibid.*, p. 73.

⁵ *Ibid.*, p. 73.

⁶ *Ibid.*, p. 73.

⁷ James Taylor, *et. al.*, "From Greenbelts to Greenways: four Canadian case studies," *Landscape and Urban Planning*, (Elmont, NY, V 33, 1995), p. 63.

⁸ Taylor, *et. al.*, pp. 60-61.

⁹ *Ibid.*, p. 62.

¹⁰ *Ibid.*, p. 62.

¹¹ *Ibid.*, p. 63.

¹² *Ibid.*, pp. 62-63.

¹³ Luther, p. 37.

¹⁴ *Ibid.*, p. 53.

¹⁵ *Ibid.*, p. 54.

6. Demonstration: Birtle, Manitoba

The Town of Birtle, Manitoba was chosen as the demonstration site for a greenspace enhancement project. Birtle's location, structure, and residents' motivation make it an ideal site for this type of project. The aforementioned design guidelines and a community based design process was applied.

The project incorporates the implementation of the Birtle River Walkway as part of the proposed development plan for greenspace enhancement within Birtle. The Birtle River Walkway Project was initiated in the spring of 1994 by the Birtle Restoration of Kilns and River Walkway Group. A number of residents had contemplated a river walkway for several years but could not foresee their aspirations becoming a reality. The discovery of lime kilns, situated on a vacant lot along the northwest side of the river, provided a new incentive for local residents. Not only could the kilns be preserved, but also they could serve as a focal point within the community. Access to the site could be gained by implementing a river walkway. A series of public consultation meetings was organized by the Birtle Restoration of Kilns and River Walkway Group to gain support for the project and to have community input into the overall concept and design of the project. In the summer of 1994, the first phase of the project was implemented through student employment and volunteer assistance.

The consultative process provided the River Walkway Group with innovative ideas for their project. A realization was made that the proposed walkway could be incorporated into a more comprehensive greenspace enhancement project. This would provide an opportunity to not only link local landmarks and natural amenities, but it also would enhance the overall cultural heritage of the community and greenspace along the river. Research of related projects, site analysis, and recommendations for the development of the walkway accompanied the consultative process.

Site Analysis

The site analysis conducted for this demonstration project was guided by the "Site and Impact Checklist" outlined in Kevin Lynch and Gary Hack's *Site Planning*.¹ The analysis focuses on general site context, cultural data, historic data and physical data of Birtle. Eleven site visits and consultations were conducted in the summers and autumns of 1994-1997.

A. Context

The Town of Birtle is situated within Manitoba's Aspen Parkland Zone, approximately 75 km southwest of Riding Mountain National Park and 350 km northwest of Winnipeg. The area's landscape is heterogeneous due to glacial till deposits and is moderately suitable for agriculture. The area's main economic focus is mixed farming, with cereal grains and oilseeds being the main crops grown. As Birtle lies within the Birdtail River Valley, most of the town's physical form is sloped and undulating.

B. Cultural Data

Land Use

Birtle provides the essential services and facilities necessary to support local economic activities. As a service centre to the surrounding agricultural activities, Birtle provides the following local services: shopping facilities, school, hospital, service station, implement and car dealerships, museum, senior citizen home, post office, and recreational facilities.

Six distinct land use zones are designated within the Town of Birtle. They are as follows: (1) residential, (2) agricultural which fully surrounds the community, (3) institutional, (4) commercial - primarily along Main Street, (5) industrial at the east side of Birtle, and (6)

open recreational areas mostly along the Birdtail River and suitable for the greenspace enhancement project (Appendix B: Land Use Zoning Map).

Population and Infrastructure Density

The Town of Birtle sustains a population of approximately 800 residents. According to census data ranging from 1961-96, there has been a population decline as of 1986 in the Town of Birtle (Figure 6.1) and as early as 1976 in the Rural Municipality of Birtle (Figure 6.2).² These two figures indicate that the population decline is more significant in the rural municipality. Decline of population in the municipality is related to changes in farming practices and size of farm operations.

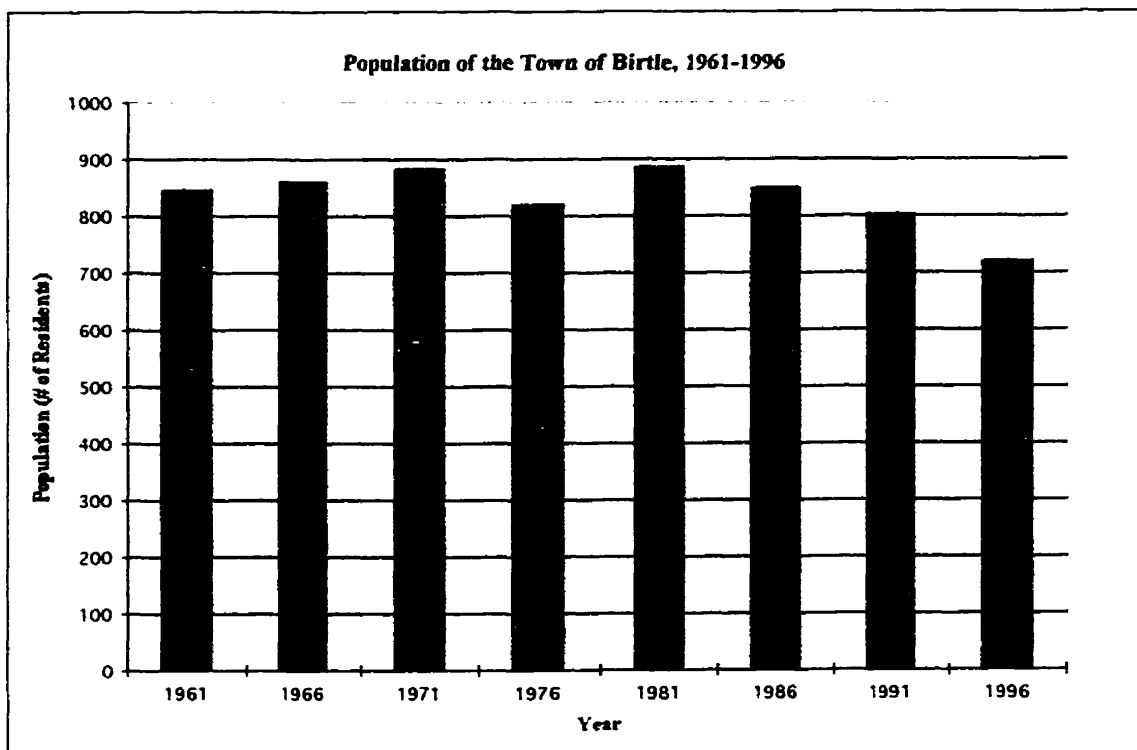


Figure 6.1 *Population Changes in the Town of Birtle 1961-1996 (Statistics Canada)*

When studying the density of buildings within Birtle, it is evident that the town sustains low density infrastructure (Appendix B: Building Density & Infrastructure). Most of the

residences are detached single family units. The greatest density is found in the downtown area where most of the commercial units are situated. This pattern is consistent with many other agro-Manitoba towns of this size.

Census data indicates that the population of the Birtle area consists of British, Ukrainian, German, and French ethnic groups. The unemployment rate of Birtle was less than five percent in 1991.³

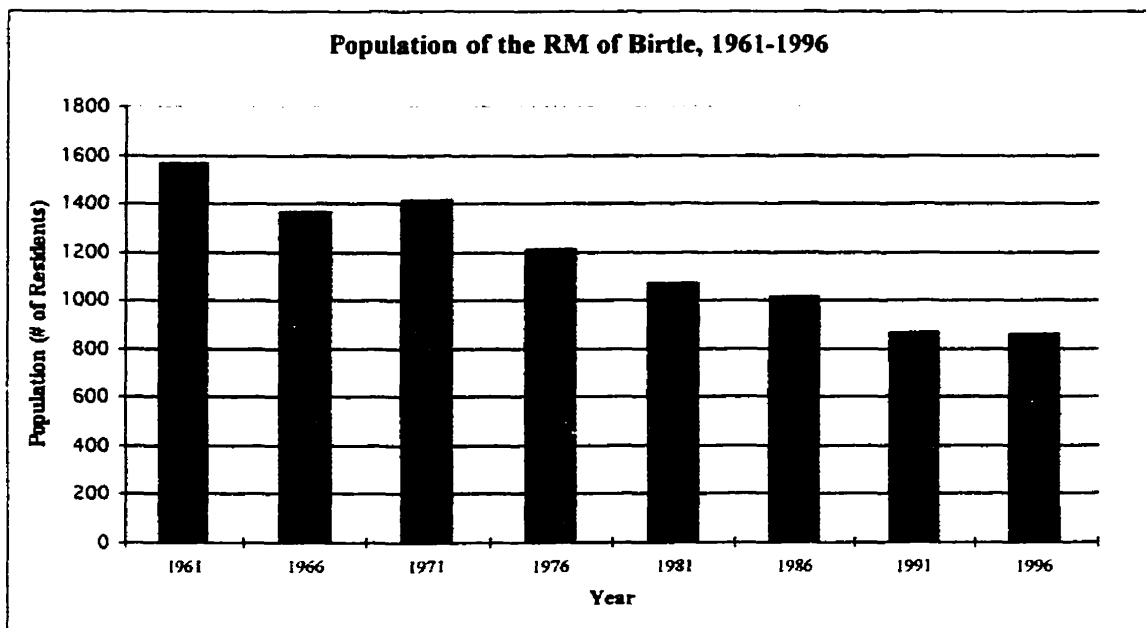


Figure 6.2 Population Changes in the Rural Municipality of Birtle 1961-1996 (Statistics Canada)

D. Historic Data

The Town of Birtle was established along the Birdtail River in 1884. The development of the town was carried out under the direction of Birtle's first mayor, J. S. Crawford. Crawford and his council were responsible for bringing the railroad to Birtle, developing health and educational systems, implementing streets, bridges, and sidewalks, and subdividing the town into commercial and residential areas. Birtle enjoyed substantial growth in the

1880's with general stores, hotels, blacksmith shops, a flour mill, an implement dealership, lumber yards, a saw mill, a doctor's office, churches, a law firm, and the Birtle Eye-Witness newspaper all being part of early development.



Figure 6.3 Birtle around 1900 with the Birtle Creamery, Pattersons Sawmill and the Centre Street Bridge in the foreground (Birtle Centennial Publication)

Since the town's establishment, it has always had a close association with the Birdtail River, which flows east to west throughout the town. Originally, the Birdtail River was used as a transportation route from the Riding Mountains to the Assiniboine River. Early settlers within the Birdtail Valley also utilized the river for economic activities.

For example, the sawmill was constructed in the late 1800's. In addition, kilns were constructed along the north bank of the river to extract lime from local limestone. As settlement progressed, the river was dammed at the west end of Birtle to regulate the flow of the water which affected the overall ecology of the river. The river widened upstream from the dam with parts of the riparian community evolving into a wetland habitat. This change also influenced the way the community utilized the river for both recreational and economic activities. The Birdtail River



Figure 6.4 A view of Birtle's mainstreet (looking east) during the early 1900's (Birtle's Centennial Publication)

Valley has experienced a number of floods throughout its history with the largest flood occurring in 1948 and a less significant flood in 1995.

Less attention was given to the river over time. For example, a swimming pool was constructed in the Birtle Riverside Park, consequently eliminating this activity from the river. Decreased utilization of the river, combined with a lack of development along the banks of the river has provided an opportunity for riparian habitat rehabilitation. This history provides Birtle, and more specifically the Birdtail River Corridor, with an ideal opportunity for developing a greenspace enhancement project.

C. Physical Data

Ecology

As part of Manitoba's Aspen Parkland, the region is comprised of groves of trembling aspen and balsam poplar within a grassland matrix and situated on Black Chernozemic soils. The land surface is nearly level to rolling, consisting of hummocky glacial till with level to gently undulating lacustrine deposits. The region's climate is defined as subarid, moderately cool boreal to semiarid, moderately cold cryoboreal. It is characterized by warm summers and long winters.⁴ Although remnants of native habitat are scattered throughout the region, most of the Aspen Parkland has been altered by agricultural and community development.⁵

Vegetation

The natural vegetation within the Birdtail Valley includes aspen forest, shrub-grassland, grassland, and wetland habitats.⁶ Birtle is fortunate in having a significant amount of land along or near the river which is not developed. Numerous vegetation types contribute to the valley's overall habitat. For example, forested areas, ranging in size from 193.4 m² (0.02 ha) to more than 272,157 m² (27.22 ha), are scattered along the edges and the bottom of the

valley. Shrub-grassland areas also are common which is an additional asset to the site's inherent suitability for a greenspace enhancement project. All of these landscapes sustain local plants and wildlife. Introduced plant material is found mostly in the built environment. Additional information on local vegetation is provided in Natural Elements of Appendix B: Site Analysis and Appendix C: Vegetation.

Wildlife

The Birdtail River Valley provides habitat for many animals. Typical mammals of the area include white-tailed deer, coyote, white-tailed jack rabbits, Richardson's ground squirrels,



Figure 6.5 Frog along the water's edge of the Birdtail (U. Holweger)

porcupines and northern pocket gophers.⁷ The numerous potholes that are found throughout the local landscape serve as high density waterfowl breeding grounds.⁸ Other local wildlife noted during site visits includes snakes, turtles, frogs, swallows, yellow-headed black birds, damsel flies, butterflies, muskrats, dragonflies, ducks, fish, and wood ticks.

Birtle's wildlife is an integral component of the local ecology and will be accommodated in the proposed greenspace enhancement project. One suitable location for observing local wildlife is situated along the northern shore of the river to the east of the lime kilns (Appendix B: Natural Elements). This site would be suitable for developing a wildlife observation facility. A fish ladder

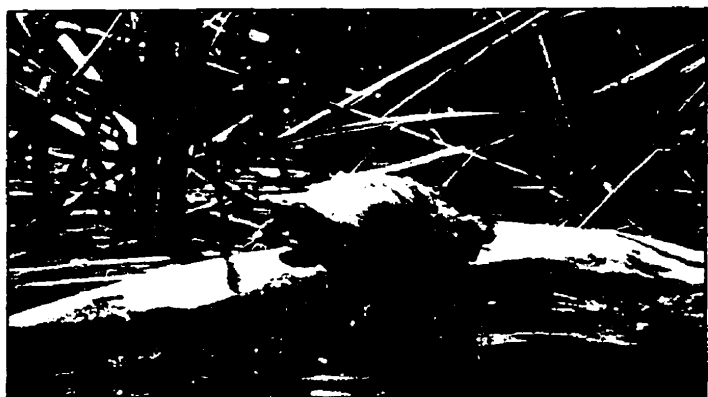


Figure 6.6 Turtle sunbathing on top of driftwood in the Birdtail River (U. Holweger)

that is to be implemented at the Birtle Dam by Manitoba Fisheries will provide another opportunity for a focal point along the river walkway. Facilitating these elements in the greenspace enhancement project requires careful consideration to avoid impact that imposes on or threatens local fauna through over utilization or disturbance.

Topography and Soils

Elevation drops from 520 msl to 470 msl with a vertical difference of 50 m from the top of the Birdtail Valley to approximately the water's edge of the Birdtail River at the base of the valley. The land of the area generally has a general inclination downward in a south-southwest direction toward the Assiniboine River Valley.⁹ General topography of the area, representing typical ground moraine, is undulating with many undrained depressions ranging from small potholes and sloughs to intermittent shallow lakes. Variation of this type of topography occurs along river valleys as a result of the area's irregular relief patterns. Surface drainage is variable and ranges from excessive runoff on steep slopes to prolonged inundation of depressions (Appendix B: Topography).¹⁰

Newdale glacial till is the most extensive surface deposit of the area. This type of till is described as a heterogeneous mixture of boulders, cobbles, gravel, sand, silt and clay of glacial origin, and mixed materials derived from shale, limestone and granite fragments.¹¹ Stream eroded till, generally stony in nature, can be found along the Birdtail River. Stony and gravelly erosion layers of varying thickness may occur at the surface or under a thin surface cover where subsequent depositions have occurred. Immature post glacial alluvial and stratified soils ranging from loam to silty clay loam in texture occur along the Birdtail River. At the base of the valley, a small percentage of mucks, peats, and marshes may occur as a result of surface deposits.¹² Chernozemic, Dark Grey, Brunisolic and Organic soil types are dominant in the study area.

The soil type and topography within Birtle cause some instability along parts of the river. For this reason, the construction of a walkway that would follow the bank of the river is not feasible in some stretches. One area of concern is the slope adjacent to the residential area along Fourth Street (See Appendix B: Notable Elements).

Climate

Birtle is situated within Manitoba's Grassland-Transition Ecoclimatic Region.¹³ Climatic data gathered at nearby Hamiota indicates that this region has an average annual temperature of 1.6 C, with the warmest months being July and August at 18.7 and 17.4 C respectively. The average frost free period is 110 days. Total annual precipitation at Birtle is approximately 500 mm, with June and July being the wettest months.¹⁴

Man Made Structures

A number of significant landmarks and historic reference points have been identified within the Town of Birtle which can be incorporated into the overall greenspace enhancement and river walkway project. They include the lime kilns along the west bank of the river, the Birtle dam, Birtle's United Church (Figure 6.7), St. George's Anglican Church (Figure 6.8),

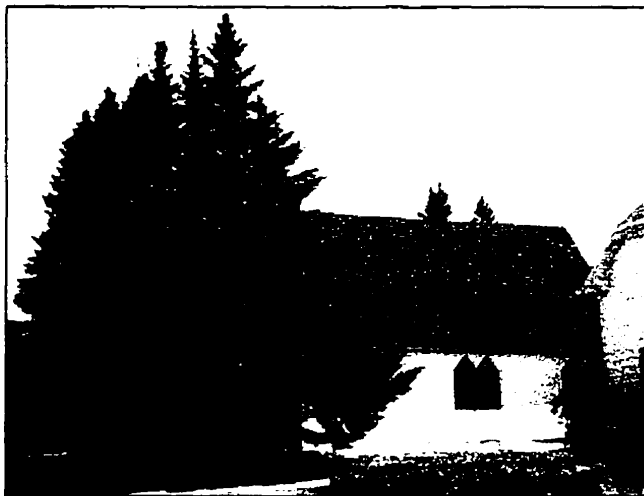


Figure 6.7 Birtle United Church at the corner of Vine Street and Seventh Street (U. Holweger)



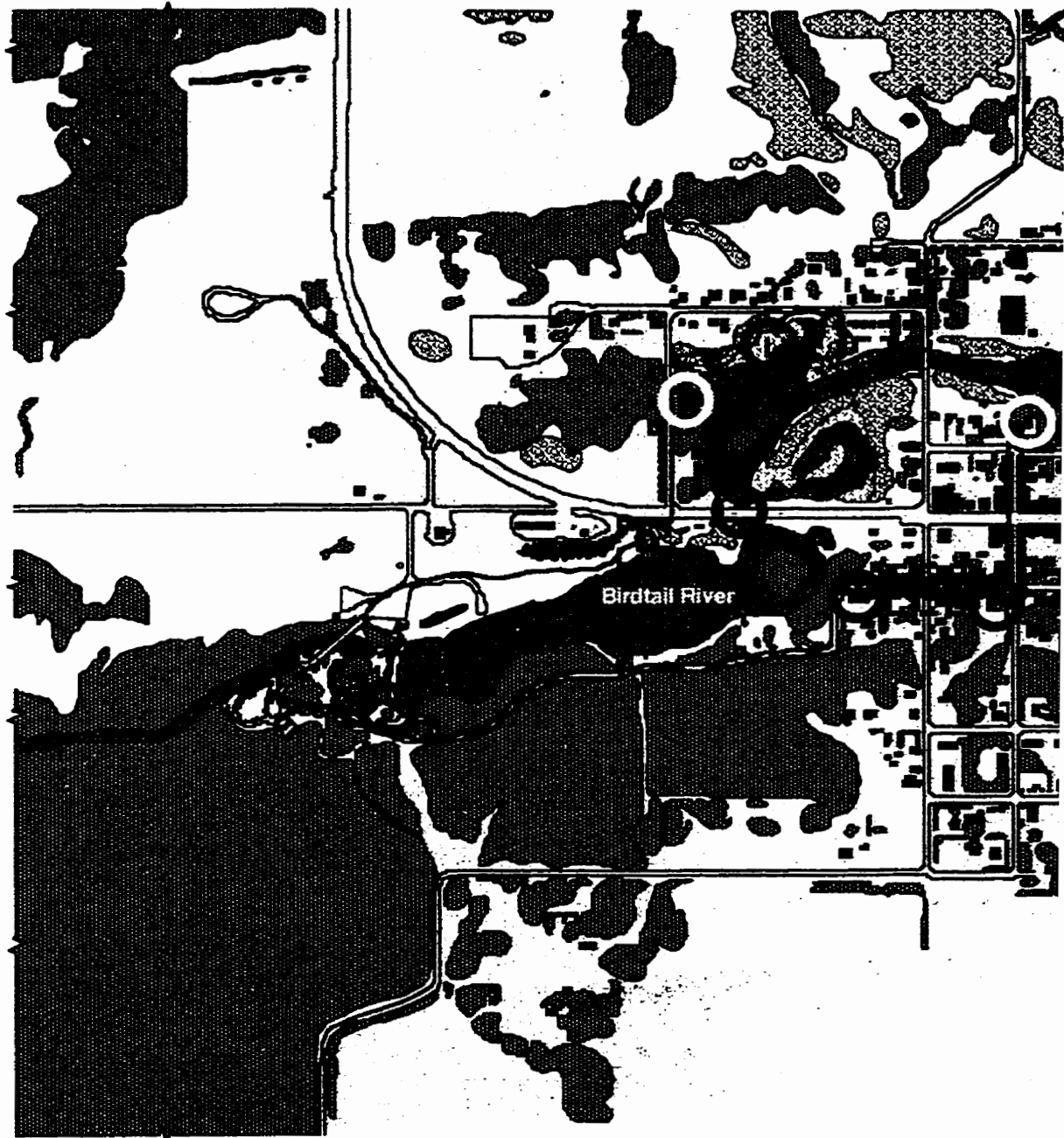
Figure 6.8 St. George's Anglican Church (U. Holweger)

the first wood frame constructed house of Birtle, and the former site of the saw mill (Appendix B: Notable Elements). These landmarks can easily be incorporated into the overall development and interpretive component of the greenway system.

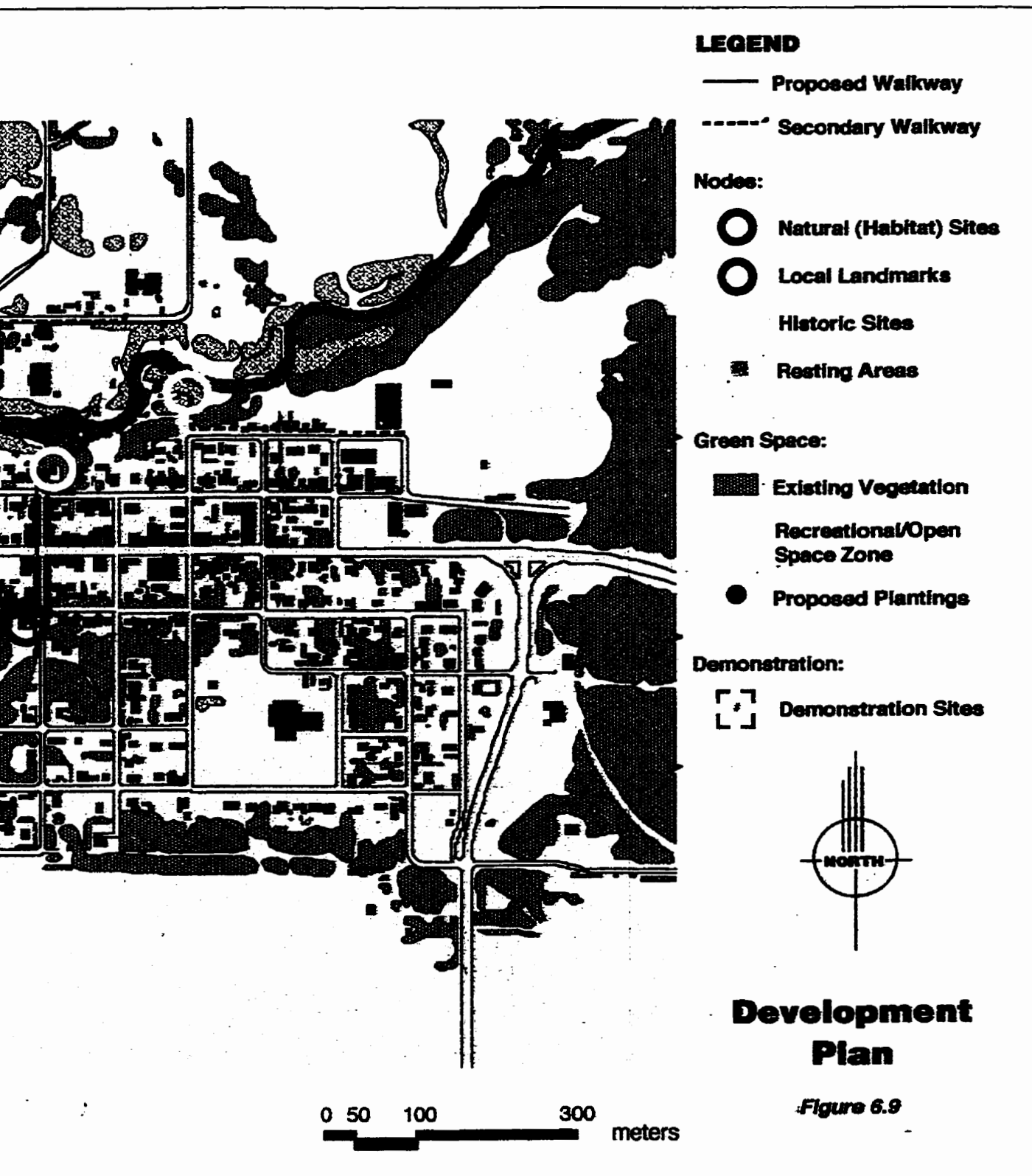
Development Plan

The development plan for Birtle's greenspace enhancement project outlines possible connections including a network of primary and secondary pathways. Three historic sites, two architectural features, and three natural sites were identified as being key highlights to be linked with the greenspace enhancement plan. The historic sites including the former saw mill site, the lime kilns site, and the first wood frame construction building of Birtle. Other architectural significant sites including St. George's Anglican Church and Birtle's United Church. The natural amenities include a wetlands area, a swallow nesting area, and the freshwater spring (also a historic site). In the proposed development plan, the noted sites are all connected by a linkage system. Six resting areas also have been identified along the pathway.

Birtle is fortunate in having a variety of habitats along or close to the Birdtail River. These areas are currently part of the existing riparian corridor along the river or lend themselves to be linked to the framework of the greenspace. Existing habitat areas range from 0.75 ha (1.85 acres) of wetland vegetation to 6.17 ha (15.26 acres) of mature forest. The size and habitat diversity of these areas are ideal in sustaining a range of wildlife species including mammals, waterfowl, birds, insects, and aquatic species. Linkages between habitat areas need to be strengthened in two places along the proposed walkway. This will encourage an increase in wildlife movement between habitat areas and act as a visual guide for human users (Proposed Plantings in Figure 6.9: Development Plan).



Town of Birtle



Demonstration Sites

A. Wildlife Education Facility

The riparian and aquatic area south of Kent Street (Figure 6.10), between Centre Street and Sixth Street provides a suitable location for a wildlife education facility. A boardwalk and a kiosk/viewing area (Figure 6.11) can be built offshore as the river is very shallow in this location which is away from the main flow of the river. Interpretive signage will be installed at the kiosk and along the boardwalk to highlight the surrounding natural elements. Nesting areas for ducks and resting islands for other species will be added to enhance wildlife.

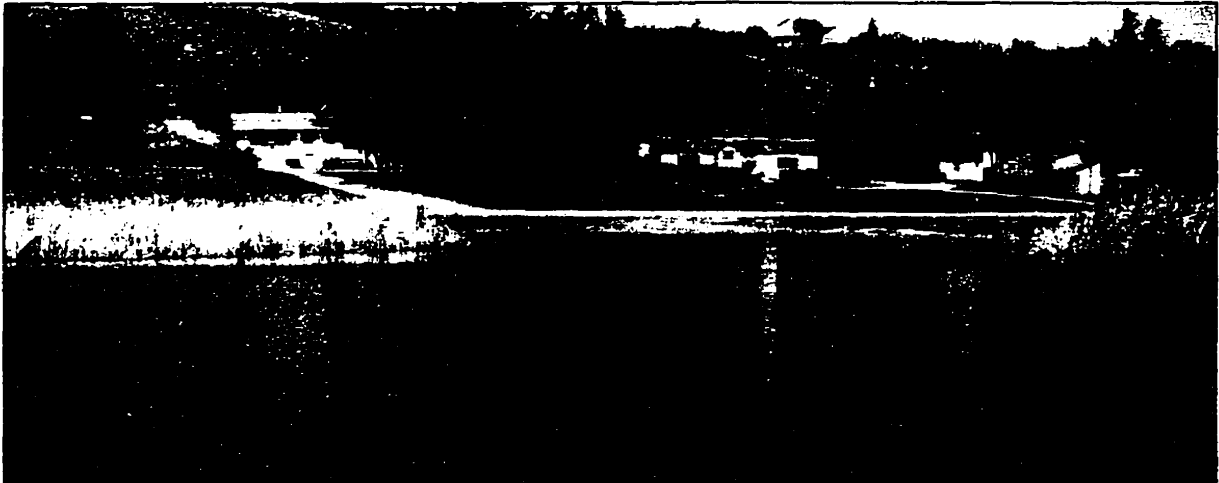


Figure 6.10 View from river toward Kent Street (U. Holweger)

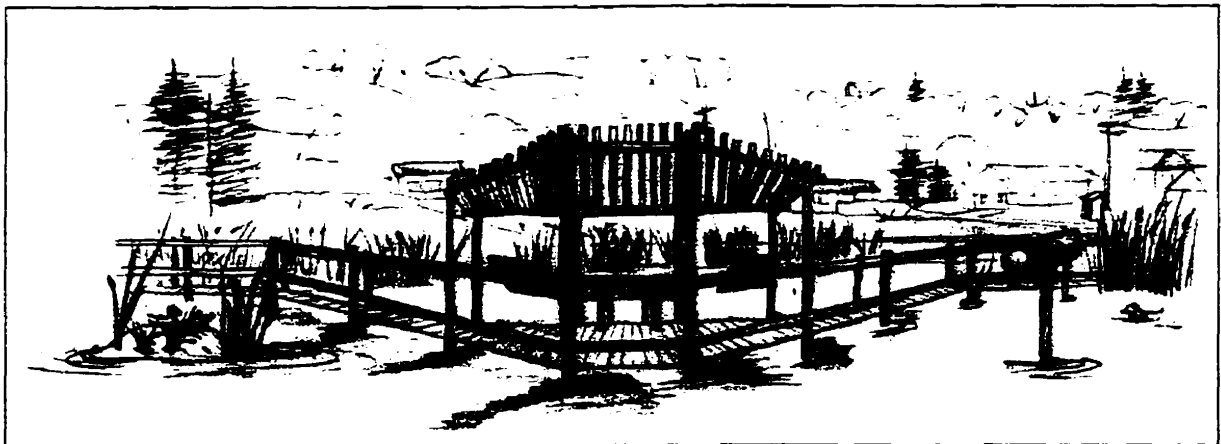


Figure 6.11 Proposed Wildlife Education Facility

B. Lime Kiln Site

The three historic lime kilns (Figure 6.12) at the west end of Birtle exhibit various stages of deterioration. This can be attributed to age and abuse as the kilns were used as a waste disposal site for many years prior to the clean-up efforts of the Birtle Restoration of Lime Kilns and River Walkway Group in the summer of 1994. Provincial archaeologists visited the site in the fall of 1994 to evaluate the overall condition of the kilns, determine their historic significance, and to make recommendations for preservation and restoration measures. The organizing committee has been quite active in the ongoing upkeep and

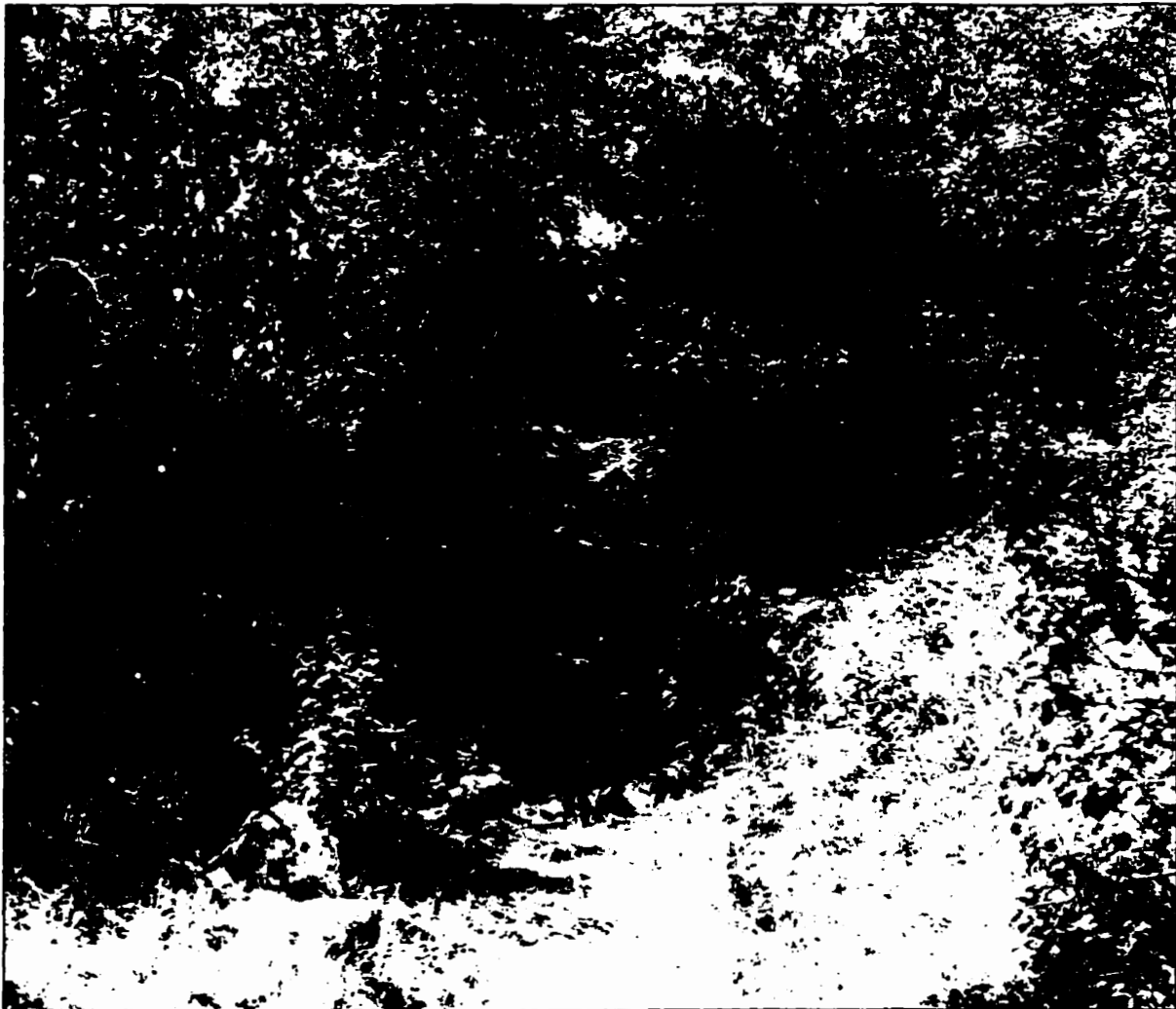


Figure 6.12 Lime Kiln Site at the west end of Birtle (U. Holweger)

maintenance of the kilns along with the surrounding area in order to prevent further deterioration of the kilns. Actual restorative measures are not envisioned as recommendations from provincial archaeologists suggest that preservation may be more favourable for the lime kilns than restoration.

To make viewing of the lime kilns possible, stairs and a designated viewing area need to be installed. This will allow for minimum impact and avoid further deterioration and instability



Figure 6.13 Viewing area at the Lime Kiln Site

of the slope below the kilns. Either stone (Figure 6.13) or wood are recommended materials for this site as they both reflect upon local character.

Other recommended additions to the site include a seating area, interpretive signage, and a waste disposal container. A bench was constructed for the site in 1994. This bench needs to be replaced by a more sturdy one as the materials used originally have weathered and the proportions should be altered.

C. Offshore Walkways

Offshore walkways may need to be considered for two sites along the river walkway due to physical constraints at these two sites. The first site is located along the north side of the river immediately west of the Centre Street bridge (Figure 6.15) and the other area is from the lime kilns site to Hwy. #83. Boardwalks built on piles (Figure 6.16) or floating on the water's surface are one option to be considered. A similar floating wooden boardwalk is currently being used in the Birtle District Park (Figure 6.14). Railings should be included on all boardwalks as a safety feature.

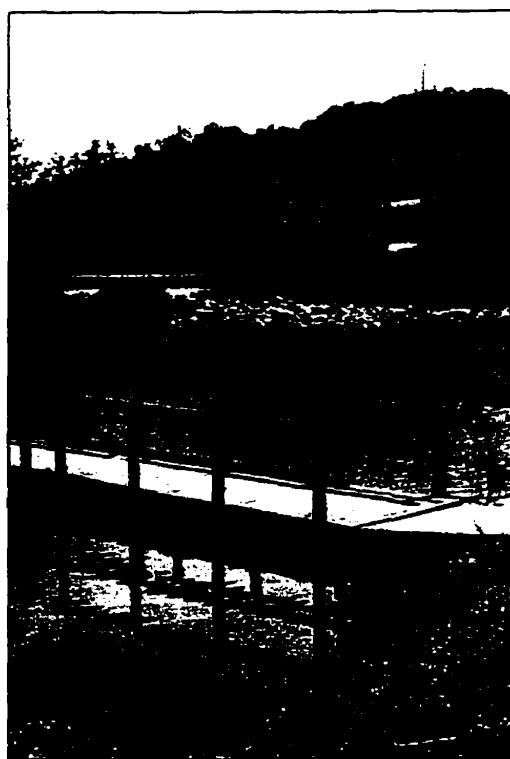


Figure 6.14 Boardwalk crossing the Birdtail River in Birtle's Riverside Park (U. Holweger)

Another option is to construct a gravelled walkway on top of a rock base along the water's edge. Both options can be costly. They also will require professional assistance and extensive material, equipment and human resources. As a short term solution, it is recommended that the walkway make use of Fourth Street as a connection route from the kilns to the highway.



Figure 6.15 North edge of river west of the Centre Street Bridge (U. Holweger)

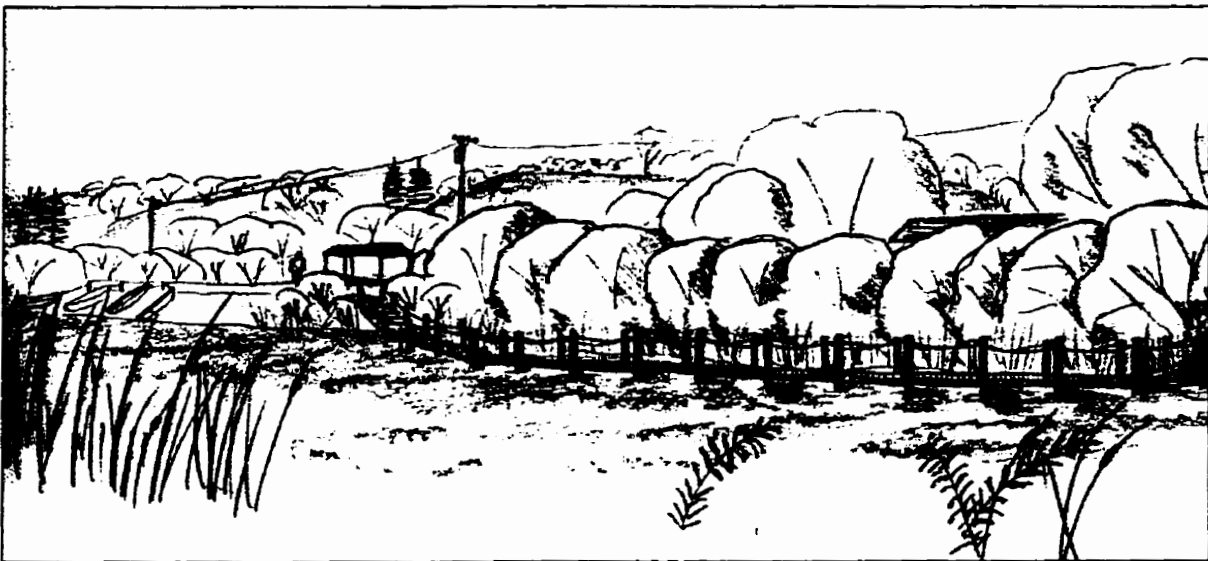


Figure 6.16 Off-shore boardwalk along river

D. Resting Area at Poplar Grove

Nine resting areas are proposed for the greenspace enhancement area. One of these areas is situated to the south of Hwy #83 at the west end of Birtle (Figure 6.17). At this site, a viewing area (Figure 6.18) has been added on top of the embankment to the east of the grove. Wooden stairs will be installed on the east side of the resting area to address the rapid change in elevation, ensure minimum impact on the slope, and provide accessibility for users who are unable to walk along steep slopes.



Figure 6.17 Poplar grove site along proposed pathway (U. Holweger)

In the grove, either wooden benches or picnic tables will be added, along with waste disposal units. A minimum amount of site furniture should be added in this grove to maintain the existing ambience of the space. Interpretive signage for this area should be limited to the viewing area on top of the embankment. The existing vegetation provides a comfortable amount of privacy and shelter. Adding trees to the area is not recommended as it would make the area too enclosed, eliminating existing views and providing too much canopy cover. Parts of the grassed area should be groomed as part of the ongoing maintenance to make the grove more suitable for a resting area.

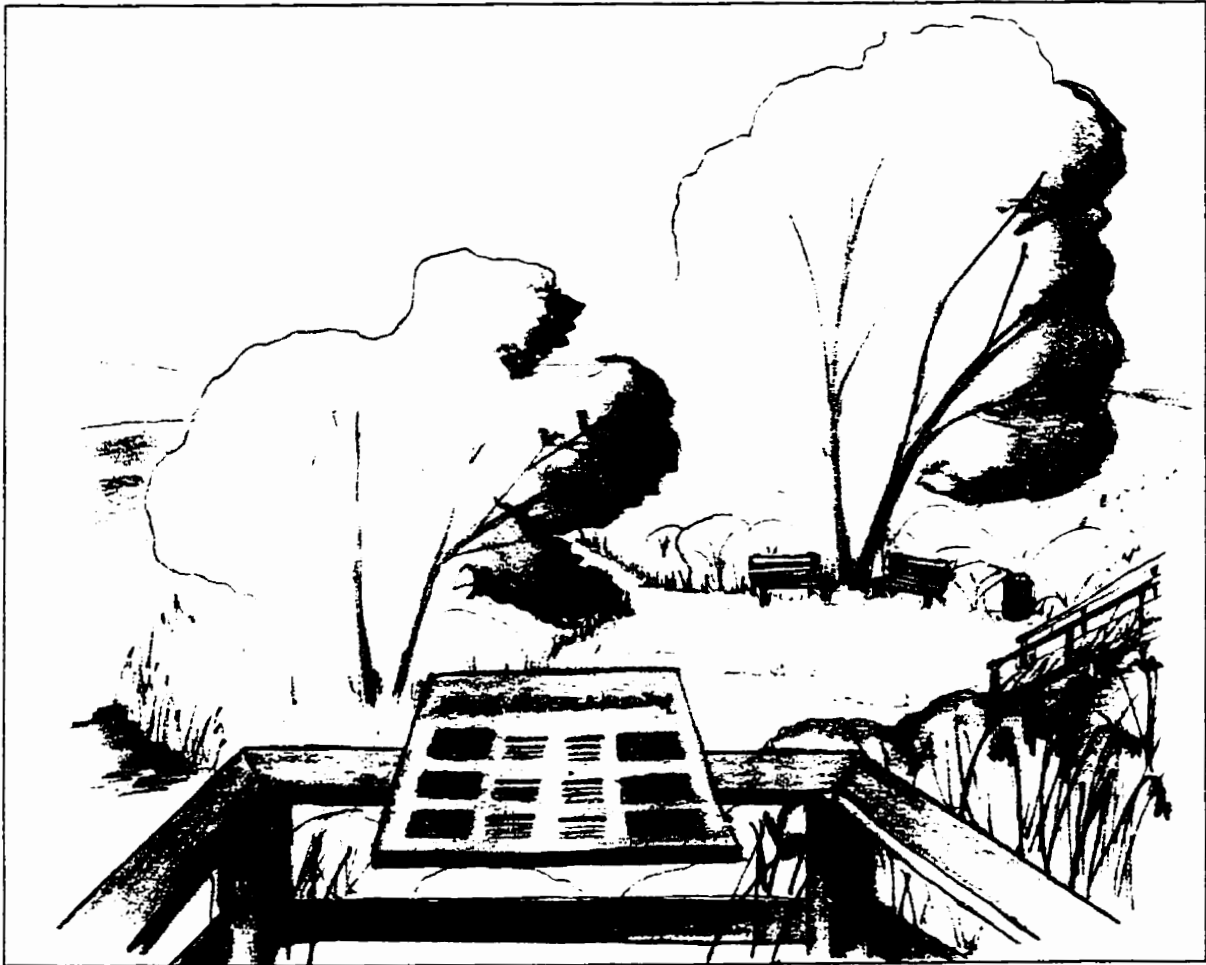


Figure 6.18 View of Resting Area at Poplar Grove

E. Sidewalk along Vine and Seventh Street

Establishing connectivity along a walking route throughout the town (Figure 6.20) can be accomplished through signage, paving patterns, and vegetation. It is recommended that the paving pattern of the sidewalk used for the walkway be unique from other sidewalks within Birtle. A unique paving pattern (Figure 6.19) was noticed during site



Figure 6.19 Existing Paving Pattern along Vine Street
(U. Holweger)



Figure 6.20 Existing Sidewalk on Vine Street
(U. Holweger)



Figure 6.21 Proposed Sidewalk and Trees along Vine Street

visits. This pattern can be applied to the urban route of the walkway. Directional signs may be useful at the corner of Vine Street and Seventh Street, and the corner of Seventh Street and St. Clare street because at these intersections, the walkway changes direction. For additional continuity, trees should be planted along Seventh Street. This will link the walkway from Vine to St. Clare Street (Figure 6. 21).

Implementation Phases

Due to financial and human constraints, the greenspace enhancement plan is to be implemented through a series of phases that extend over a number of years. This allows the community to implement and manage the project on a grassroots basis. Fundraising, ongoing maintenance, future development, volunteer work, hired labour, professional input and dues are all part of the considerations in establishing annual action plans developed by the local organizing committee. Phase one of the project, which has been completed,

includes the clean-up of the lime kilns site and construction of the upland walkway along the northwest portion of the river. Phase two extends the walkway to Centre Street through a dense stand of sandbar willows. To date, the clearing of the path has been completed but additional maintenance is required to make the walkway accessible. Phase three will focus on extending the walkway from the kiln site to the Birtle Riverside Park and will ensure ongoing maintenance of phases one and two. Upon completion of Phase three, interpretive signage should be added to the established sections of the project. Phase four will connect the walkway to an existing sidewalk along Vine Street. The next phase provides the proper visual linkages and signage throughout the downtown area, completing the primary walkway system. Secondary linkages can be added at a later stage (Figure 6.9: Development Plan). A long term management plan must be established by the organizing committee to ensure upkeep, cleanliness, and safety issues are addressed throughout the greenspace enhancement area.

Experiencing the Greenspace Enhancement Area

One can experience the diverse features of the greenspace enhancement area by walking along the proposed Birtle River Walkway. A guided tour follows to give the reader an indication of the type of features and activities that can be experienced along the way.

From Centre Street to the Lime Kilns

On the north side of Centre Bridge descend the stairs on the west side and you are on the Birtle River Walkway. First you will walk across a wooden boardwalk along the river's north edge. A few stairs will take you onto wood chip path that meanders through a dense stand of willows (Figure 6.22). Here you will find shorebirds, butterflies, moths, sedges, and meadow horsetail. As you leave the willows, you return to a boardwalk that takes you to the wildlife education facility. A kiosk provides an opportunity for viewing local waterfowl and wildlife. Interpretive signage provides further details about the surrounding



Figure 6.22 Boardwalk crossing a small depression in the willow area (U. Holweger)



Figure 6.23 Entrance to pathway through the willows (U. Holweger)



Figure 6.24 Woodchip path through willows (U. Holweger)

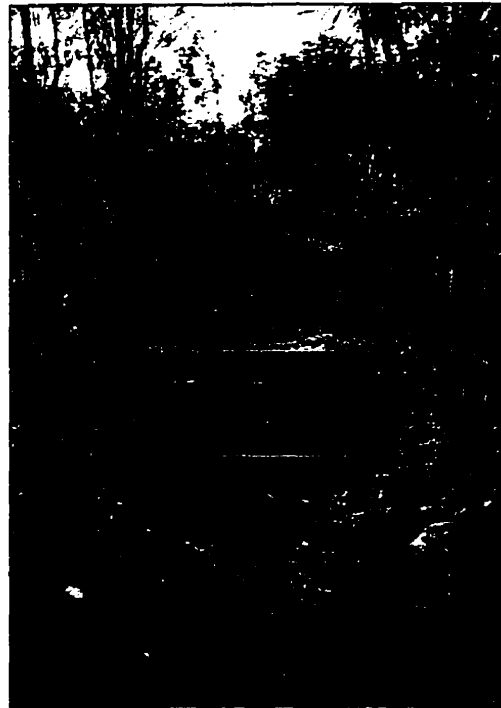


Figure 6.25 Stairs leading from willows to grassland area (U. Holweger)



*Figure 6.26 Stairs near lime kiln site
(U. Holweger)*



*Figure 6.27 Bench and signage near lime kiln
site (U. Holweger)*



*Figure 6.28 Grassed walkway near lime kiln
site (U. Holweger)*



*Figure 6.29 Close-up of Lime Kiln
(U. Holweger)*



Figure 6.30 Woodchip path at west end of river (U. Holweger)

habitat and the duck nests placed in the river. The walkway leads back into a willow stand (Figures 6.23 and 6.24) as you continue to move west. Another set of stairs (Figure 6.25) takes you uphill to a viewing and resting area. After having traveled close to 0.5 km, you may wish to sit

down on the bench and view the river and the Town of Birtle to the southeast. The next stair (Figure 6.26) takes you down to an area where many native shrubs including wolf willow, hawthorn, roses, and snowberry can be found. If you come at the right time of the year, you can even pick some saskatoons or chokecherries. After crossing a small creek, you arrive at the lime kiln site.

Three preserved historic lime kilns (Figure 6.29) are tucked into the sloped riverbank. A viewing area, sheltered by paper birches, provides you with a closer view of the kilns. The signage explains how the kilns were used to extract lime from local limestone with stones being delivered to the site by boat and the small access road behind the kilns being used for delivering fuel to the kilns. Remnants of the lime can be spotted close to the water's edge. You learn that after extraction, the lime was delivered by boat to other parts of the community and other areas along the river.

From the Kilns to Birtle Riverside Park

You proceed uphill onto Fourth Street. Turning south, you follow the newly planted row of basswood trees to Hwy#83. Checking both ways for traffic, you cross the highway and are now back on a wood chip path. Wildflowers are scattered throughout the grassland on both

sides of the path. Watch for purple prairie clover, white cinquefoil, goldenrod, aster, and wild licorice. By now, you should have spotted the swallows above you. These birds return every year to nest under the nearby bridge. As you approach the top of the bank, you can spot several large rocks tucked into the landscape. A closer look may reveal a garter snake or two sunbathing on top of one of the rocks. The poplar stand to the west looks inviting. It's time for some shade. As you proceed down the stairs, you are welcomed by a shady grove. A picnic table near the water's edge catches your eye. It is a suitable spot to consume a light snack. Red-winged blackbirds are perched in the cattails while mallard ducks are taking their young for a swim. The peonies to your right add some extra colour. You wonder how they got there. Would someone have planted them?

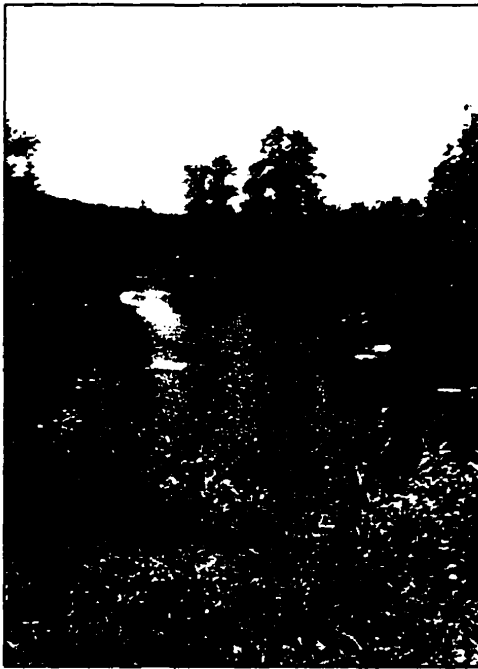


Figure 6.31 View to the west downstream from the Birtle Dam (U. Holweger)

After a delightful rest, you head west to the park. You notice some newly planted snowberry and buffaloberry along the steep slope to the north. The sign notes that they were planted last year by local high school students as part of a restoration project to rehabilitate and stabilize the slope. As you arrive at the Birtle Riverside Park, you spot young children taking their first swimming lessons at the pool. It looks as if there are a lot of golfers out on the course today. You proceed south and head across the earthen dike to the dam. Along the way you meet someone who has set up a few fish nets in the river. You ask if there are many fish in the river. She explains that she is studying the success of the newly installed fish ladder. So far a few fish have made it up the ladder today and are heading upstream. The nearby sign gives a more detailed description of the fish ladder. Crossing the river at the boardwalk, you too spot a few fish. You notice that you are surrounded by many dragon and damselflies as you stop to watch the water fall over the dam before leaving the park.

From the Park to Vine Street

The path continues along Woodburn Street (Figure 6.32) which takes you from the park to a residential area along Vine Street. Many wildflowers are scattered along the side of the



Figure 6.32 View along Woodburn Street at the south end of the Park (U. Holweger)

road. You can spot roses, wild sarsaparilla, Canada anemone, and lily of the valley. To the south, a stand of mature aspen dominates the landscape. You cross the road to take a closer look at the forest. The understorey consists of chokecherry, hazelnut, dogwood, and highbush cranberry. Once you reach the halfway point of this 0.75 km stretch, you stop and look back across the river to where you were walking earlier. You continue your walk after a brief stop. The first building you see as you approach Vine Street is a church. The sign in front of the building notes that it is St. George's Anglican Church. Birtle's United Church is located in the next block. You stop to photograph these churches.

To the Natural Spring via Downtown

Then newly renovated sidewalk takes you to the corner of Vine and Seventh Street. You turn north towards downtown Birtle. On mainstreet, you stop for lunch at the local Chinese restaurant. Your next stop is at the local museum. Many artifacts and photographs of the local history take you back in time. After signing the guest book, you are back on the walkway to complete your tour. The final stop is at the natural springs which are located along the river, north of St. Clare Avenue. Just before you proceed down the stairs, you stop and look at the building to the west. The sign at the fence states that it is the first wood frame constructed home of Birtle. The natural spring has been rehabilitated and water now

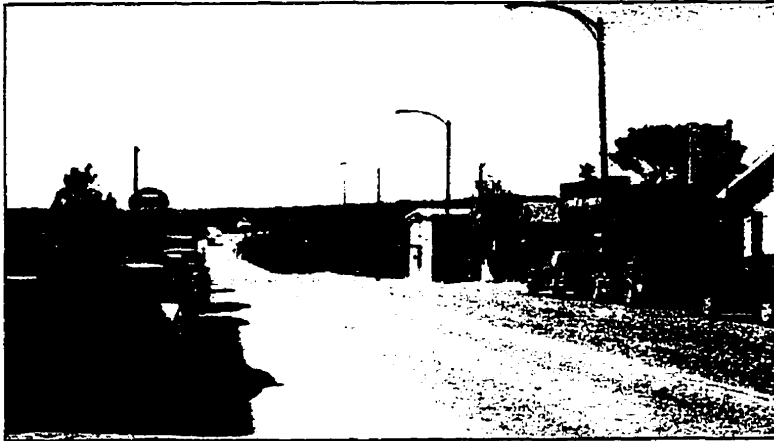


Figure 6.33 Looking west on mainstreet (U. Holweger)

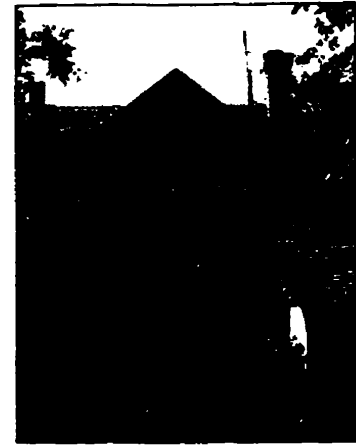


Figure 6.34 First woodframe constructed home of Birtle

flows from a small fountain into a gravelled gully to the river. You meet some 'Green Team' members which have been hired to maintain the walkway for the summer. After a short discussion about their work, you follow the final 150 m of walkway back to the Centre Street Bridge.

¹ Kevin Lynch and Gary Hack, *Site Planning*, Third Edition, (Cambridge, Massachusetts: The MIT Press, 1984), Appendix G.

² Statistics Canada, *Census Data (Manitoba)*, 1961-1996.

³ Statistics Canada, *1991 Census Data (Manitoba)*.

⁴ C. A. Zoladeski, *et. al.* *Forest Ecosystem Classification for Manitoba, Field Guide*, (Vancouver: UBC Press, 1995), p. 8.

⁵ Zoladeski, *et. al.*, p. 10.

⁶ Derek Johnson, *et. al.*, *Plants of the Western Boreal Forest & Aspen Parkland*, (Edmonton: Lone Pine Publishing, 1995), pp. 15-17.

⁷ *Ibid.*, p. 10.

⁸ Glenn Podolsky, *Soils of the Birtle, Elkhorn, Hamiota, Newdale, Rapid City, Shoal Lake, and Strathclair Townsites*, Soils Report No. D65, (Winnipeg: Canada-Manitoba Soil Survey, 1988), p. 1.

⁹ *Ibid.*, p. 5.

¹⁰ *Ibid.*, p. 5.

¹¹ *Ibid.*, p. 5.

¹² *Ibid.*, p. 6.

¹³ *Ibid.*, p. 6.

¹⁴ *Ibid.*, p. 6.

7. Discussion and Recommendations

The implementation of a greenspace enhancement project in the Town of Birtle provides the physical linkages between natural, social, and historic amenities within the community through a network of primary and secondary pathways. Establishing a network of greenspace within Birtle will improve local habitat in addition to accommodating wildlife and human movement.

The proposed greenspace enhancement plan builds on the original concept of a river walkway for the Town of Birtle envisioned by the Birtle Restoration of Kilns and River Walkway Group. The plan is derived by an application of the design guidelines outlined in chapter five. Historic styles and building materials are used throughout the design. The use of wood for building stairs, bridges, boardwalks, and site furniture is a reminder of how the historic saw mill of Birtle once made use of the river for transporting lumber that would later be used for local construction. Stone is recommended for the stairs at the kiln and natural spring site due to the character of these two sites. A unique sidewalk paving pattern in the downtown area allows the walkway to be distinguishable from adjacent walkways. The existing pattern identified during site analysis can be used for this purpose. Local character and individual expression are also achieved by residents assisting with the development of the project. Minimum intervention is an important aspect of the project because existing wildlife habitat within the community should not be jeopardized by the proposed project. A continuous network of habitat can be achieved by strengthening connections in a few locations. Existing landmarks are accentuated while natural elements are highlighted as part of the development plan rather than proposing new sites of interest throughout the greenspace. As a result, the proposed project can be integrated into the existing community fabric without detracting from the unique local character. A more transparent design process is achieved through a participatory design process and through educational components associated with the proposed design. Various sites throughout the greenspace lend themselves to be excellent locations for public education purposes. These

areas can be utilized by the local school as part of environmental education programs in addition to having visitors learn more about the unique character of the town. The proposed wildlife interpretive centre is one facility that hosts an environmental education component while the recently installed fish ladder site should provide information on aquatic habitats.

Public participation is required at the all three stages of the design process which includes project design, implementation, and maintenance. During the design process, residents of Birtle were invited to participate in a series of meetings to review similar projects throughout Manitoba, discuss the vision for a river walkway, and develop an implementation process for the proposed project. These meetings led to a number of residents wishing to expand their initial scope of the project to a community greenspace enhancement project with the river walkway providing the linkages needed to make it into a continuous system. Many members of the community began to favour the proposal after realizing that a number of historic, social, and natural elements of the community could be incorporated into the system. The task of implementing this project is being led by the Birtle Restoration of Kilns and River Walkway Group who established a phasing plan which outlined areas to be developed over a period of five years. Most of the work is carried out by local residents.

Initial funding for the project was provided through the *Active Living* program which allowed for summer students to be hired during the Summer of 1994 to implement Phase 1 of the project. Additional financial support was gained through donations and local fundraising including raffles and a local dinner theatre production. A number of other funding programs can be applied to for future support. Local sponsorship should be able to provide some of the site furniture required for the project.

With a focus on a development plan and selected demonstration sites, technical details and requirements are not outlined in this report. Additional analysis, detailed design, and technical specifications must be carried out prior to implementing some of the components of the proposal. Professional assistance should be used in developing plans for the

boardwalks, the wildlife interpretive centre, and site furniture, as well as preserving the kilns, and restoring the natural spring site.

In spite of the demonstrated need for and benefits of green space enhancement, there are numerous barriers to overcome before the preservation of nature and greenspace is more highly valued and becomes an integral part of town planning. Some of the most common challenges include lack of funding, land use, perception, confusion about terminology, and other community priorities that take precedence over preserving habitat or enhancing local green spaces.¹ The Town of Birtle and more specifically the Birtle Restoration of Kilns and River Walkway Group have found that they are faced with a number of barriers in developing their project. Project funding, leadership, and volunteer “burn-out” are the most prominent challenges. In addition, the public participation process did not create consensus amongst all participants. Although consensus was achieved on the concept of a greenspace enhancement project, there were differences of opinion in the area of detailed design and priority setting.

Other agro-Manitoba communities who are considering similar initiatives need to ensure that the proposed development is not only an asset to the community but also does not jeopardize local identity. As a follow-up to the Birtle initiative, the following recommendations have been developed to assist agro-Manitoba communities in their own process:

- Develop a series of design guidelines that respect the local need and character of the community. A set of guidelines have been outlined in chapter five which should be of assistance to individual communities.
- Establish a good working team of mixed personalities and abilities to ensure that the different aspects and responsibilities of the initiative will be addressed.
- Select one project leader to head the project or consider using a facilitator to assist with the design and decision making process.

- Develop an action plan that assigns specific duties to individuals or task groups.
- Decide on a method (or methods) of developing public consensus on what should be done. If the community has a history of having difficulties in reaching consensus, the process outlined in chapter three can be applied through the efforts of a facilitator.
- Develop a long-term maintenance plan to ensure upkeep of the project upon completion.

The process undertaken in the Birtle project suggests that there is a need for project guidance when communities are taking on grass root initiatives of this magnitude. While some assistance is required for technical information, the key support comes in the area of facilitation and pathfinding. This support can partially come from governing bodies or interest groups but for some aspects of the project, professional assistance should be sought. In cases where consultants are hired to assist with such projects, communities need to ensure that the proposals respect local conditions and characteristics more than in the past. Individual communities need to be pro-active in this area if they wish to maintain their unique identities within the prairie landscape.

Jacklyn Johnston, "Gaining Public Support for Wildlife in the City," *Green Cities: Ecologically Sound Approaches to Urban Space*, (Montreal: Black Rose Books, Ltd., 1990), p. 239

Glossary

agro-Manitoba -the area of Manitoba in which agriculture is the prime land use and economic factor. This area is limited to the southern Manitoba, covering approximately 17% of Manitoba's total land base (PFRA GIS Unit, 1998).

Canadian Prairie town - same as the Prairie Town except that it has distinct characteristics only unique to the Canadian Prairies. For example, the American Prairie Town often contains a town square, the Canadian Prairie Town does not.

community – refers to a grouping of residents in a given location that interact with one another. In agro-Manitoba, a community refers to a settlement (i.e. town or village) and its surrounding area.

greenspace - is a connected network of habitat, public open space, and significant nodes within the built environment.

greenspace enhancement - refers to the development of key linkages between habitat areas of the built environment and the improvement of open spaces to provide greater ecological and social function within the built environment.

greenways - are continuous corridors of natural vegetation and open spaces usually anchored around a river or body of water. Greenways provide linkages between recreational areas, wildlife habitats, human communities, and connect city to country and people to nature. A trail is usually, but not always, incorporated into a greenway (Royal Commission on the Future of the Toronto Waterfront, 1992).

habitat – is a place or environment where a plant or animal can sustain itself. Examples include a row of street trees, an aspen bluff, and a riparian corridor.

native habitat – refers to habitat that contains native plant species and has not been removed by development. It usually contains few introduced plant species.

Prairie town - distinct settlement type associated with prairie settlement. Typical characteristics include mainstreet, railroad tracks, and grain elevator.

R/UDAT - Regional/Urban Design Assistance Teams - assist communities through recommendations for planning and action strategies. This process is intense and includes team meetings with community groups, site visits and tours, public hearings and working sessions. (R/UDAT, Study of Moose Jaw, Saskatchewan)

towns - a settlement type which sustains a population of 500-10,000 people. (Friesen, 1995)

trail - a more recent development in the tradition of nature trails, challenges the visitor to explore, demands a questioning approach, often provides formal links with printed or displayed interpretive material and, most important, invites the user to appraise the quality of what is observed and experienced. (Goodey, 1974)

town trails - are planned routes through urban areas which may be utilized by anyone who is interested and are identified by markers in the townscape, or guide by published route leaflets or brochures. This definition has been adapted from Goodey's definition of *urban walks* and *town trails* (Goodey, 1974).

value added industry - refers to the adding of value to farm commodities by post production processing on or off the farm. There are a multitude of examples such as the manufacturing of condiments or the production of foods. (Manitoba Agriculture, 1998)

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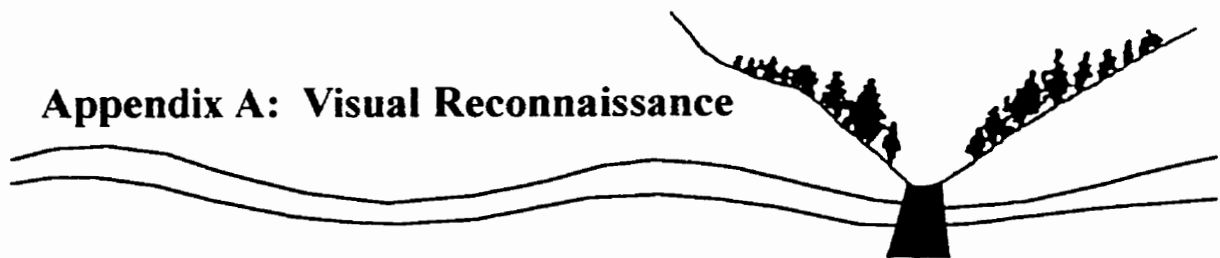
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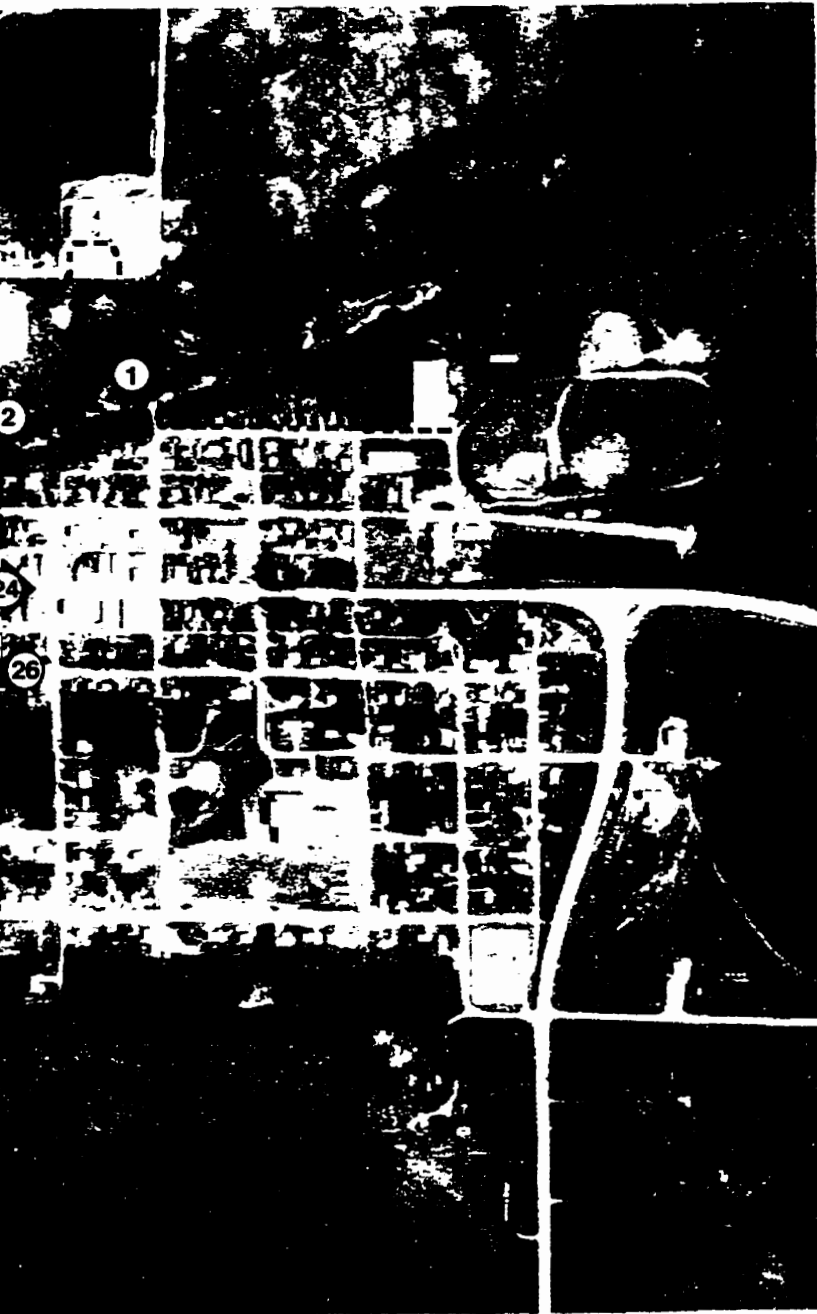
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Appendix A: Visual Reconnaissance





Town of Birtle



LEGEND

- Proposed Walkway
- - - Secondary Walkway
- ① Photographic Images
(see pages A.II to A.VI)



Visual Reconnaissance

0 50 100 300 meters

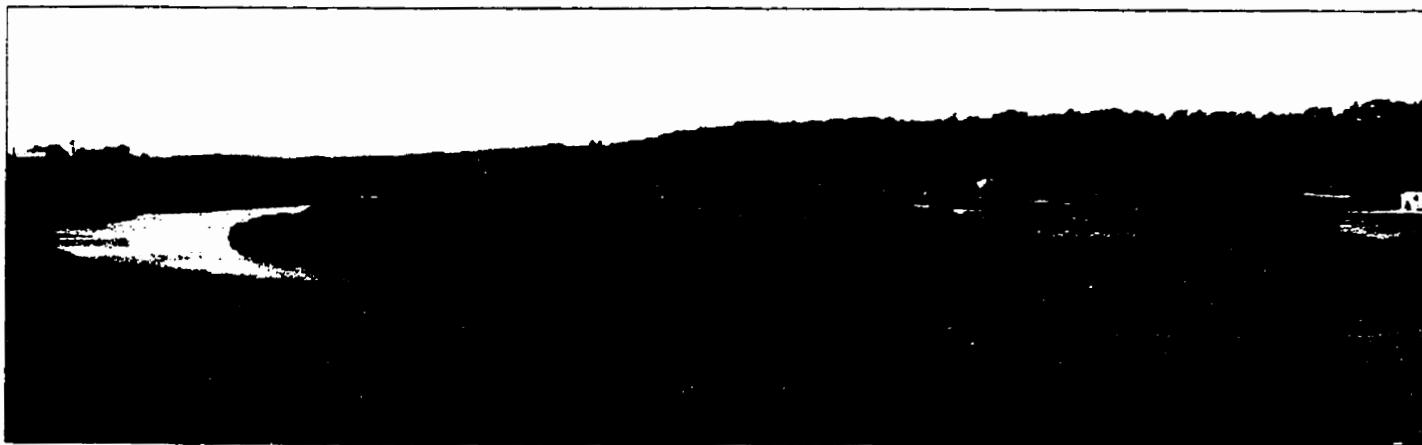


Figure A.1 View of the Birdtail River from the Historic Saw Mill Site



Figure A.2 Natural Spring Site

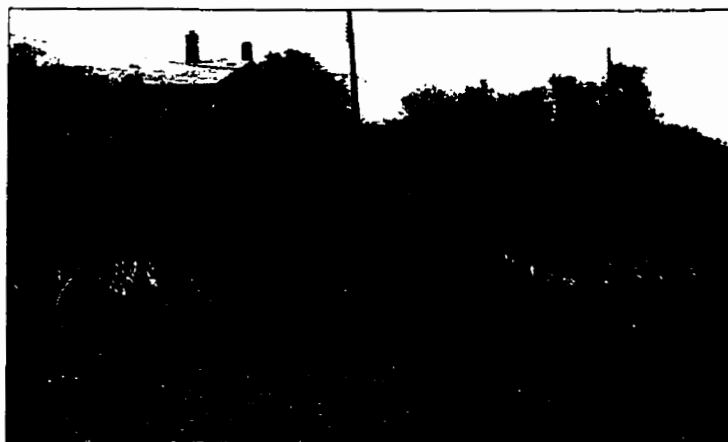


Figure A.4 View from the Birdtail River east of Centre Street

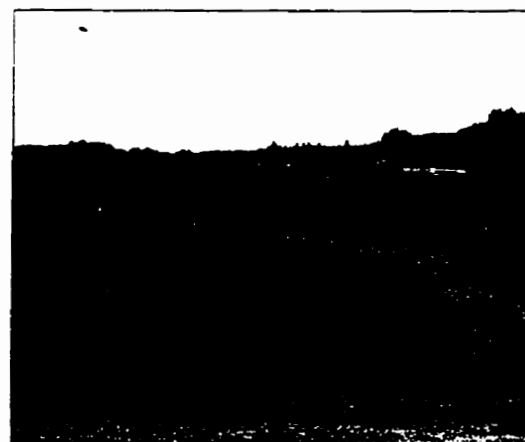


Figure A.5 View of the Birdtail River from th



Figure A.3 Looking south on Seventh Street



Tail River from the Centre Street Bridge

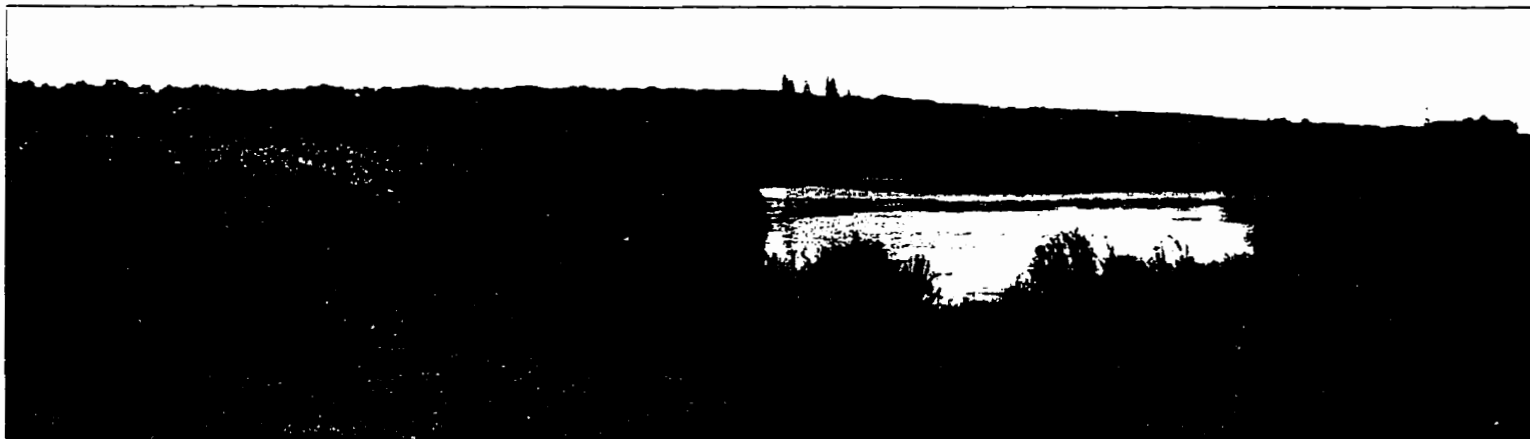


Figure A.6 View of the river from Kent Street



Figure A.8 Looking west from the Centre Street Bridge



Figure A.9 View to the southwest from Kent Street

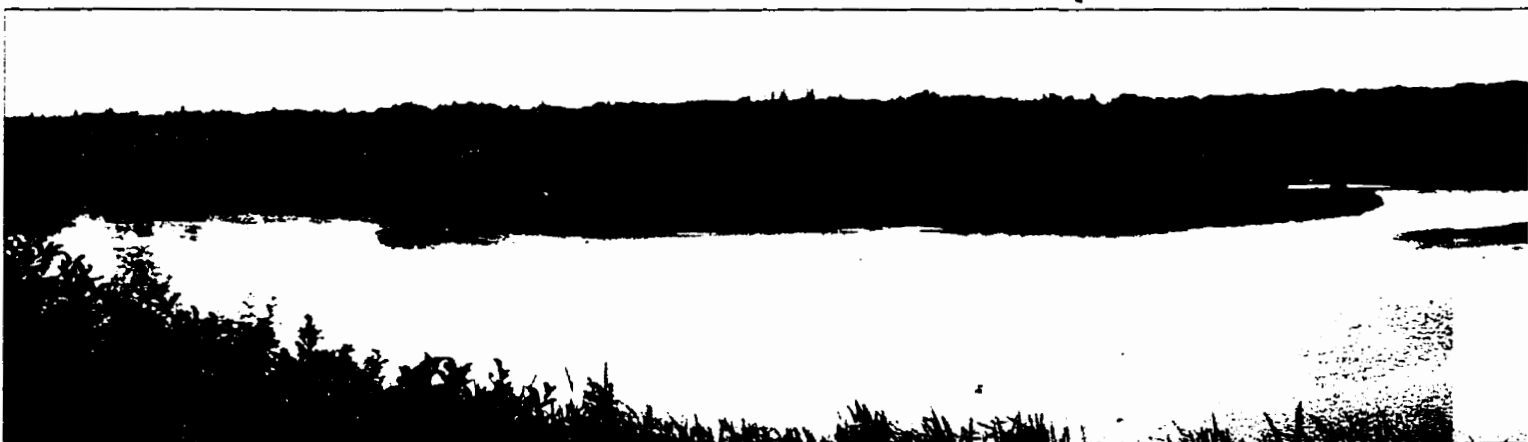


Figure A.10 View of river and Birtle from the river's north edge near Kent Street

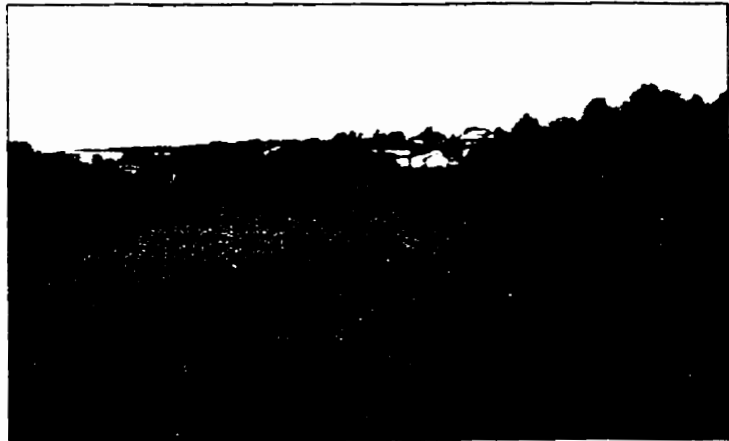
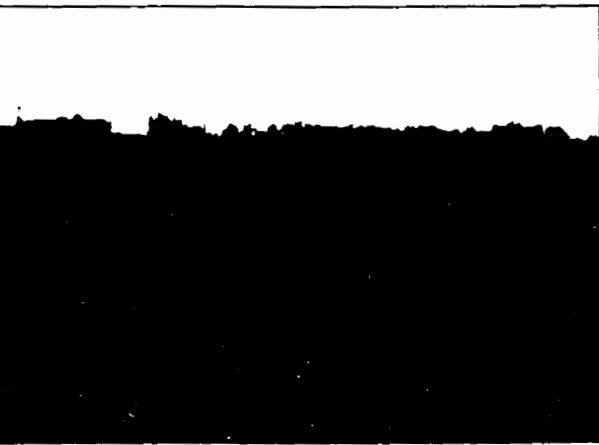


Figure A.7 Looking east from the Centre Street Bridge



ent Street





Figure A.11 Looking east from the Kiln Site

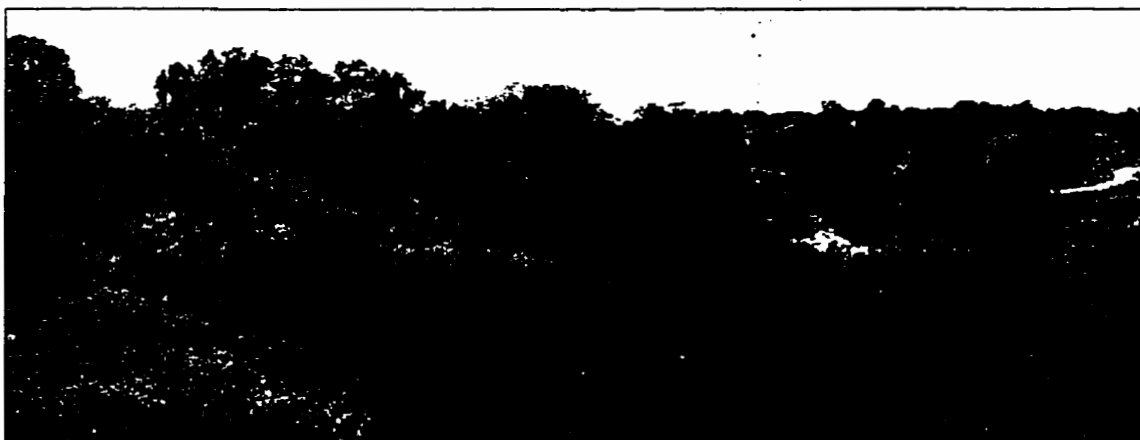


Figure A.12 View of the river's west edge from the Main Street Bridge



Fig



Figure A.14 Edge condition along residential lots on Fourth Street



Figure A.13 View of Birtle from the Kiln Site



Figure A.15 Edge condition along the river at Fourth Street

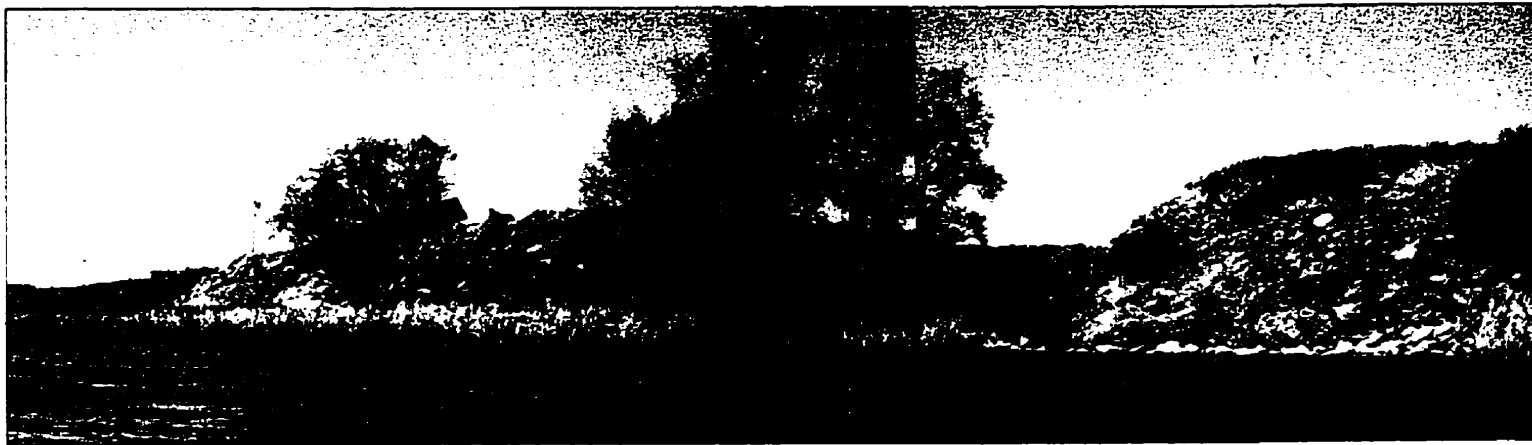


Figure A.16 View from the Birdtail of the area south of Highway #83 (Main Street)

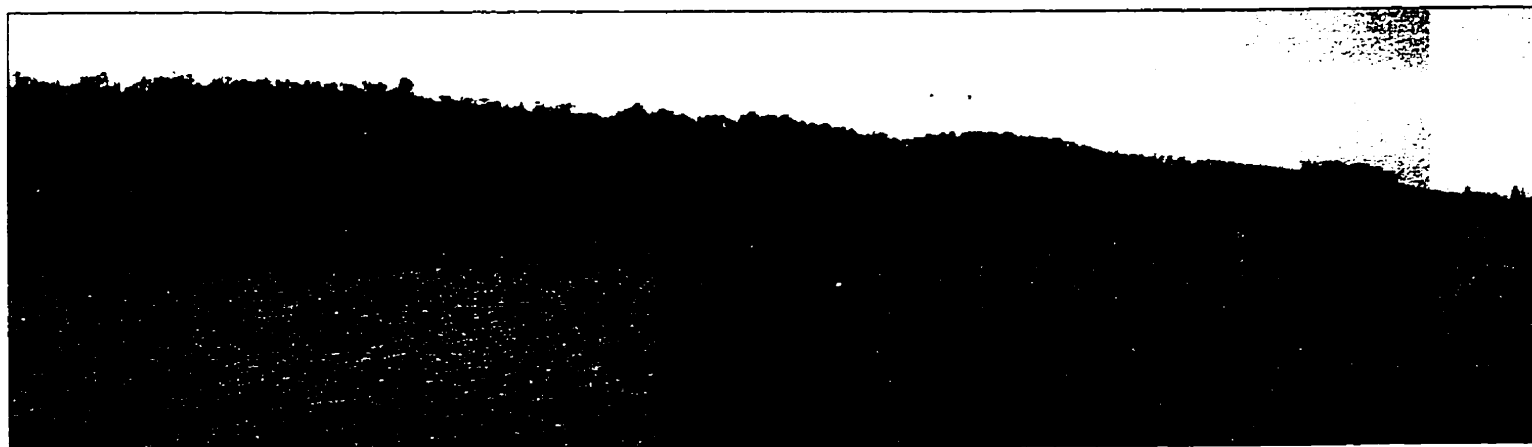


Figure A.17 Aspen forest along the south side of the river

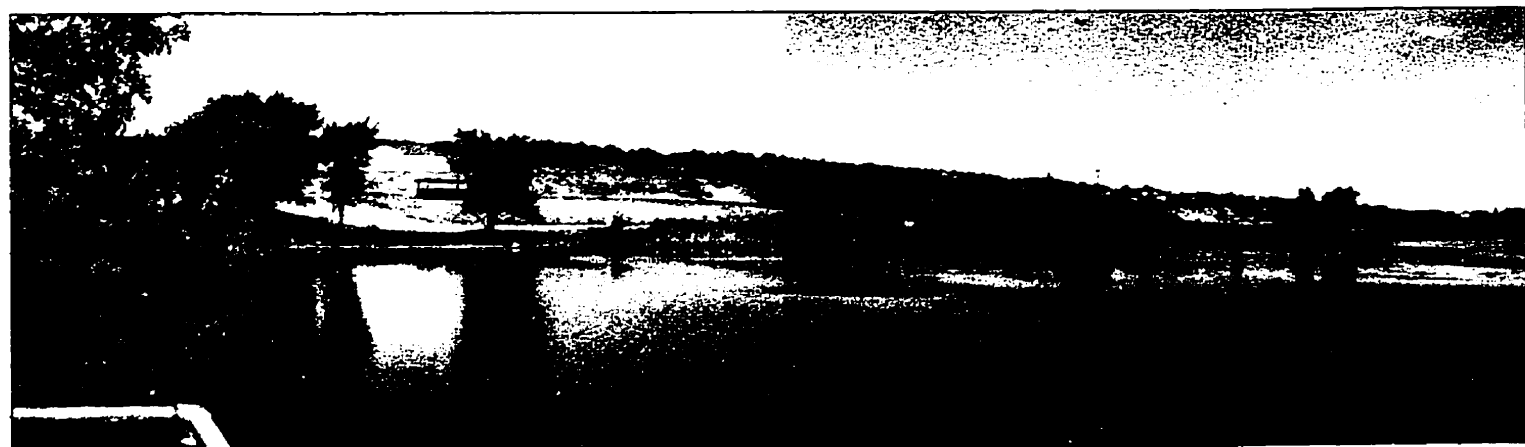


Figure A.19 Looking east from the Birtle Dam



Figure A.18 Willow/poplar grove along north edge of river

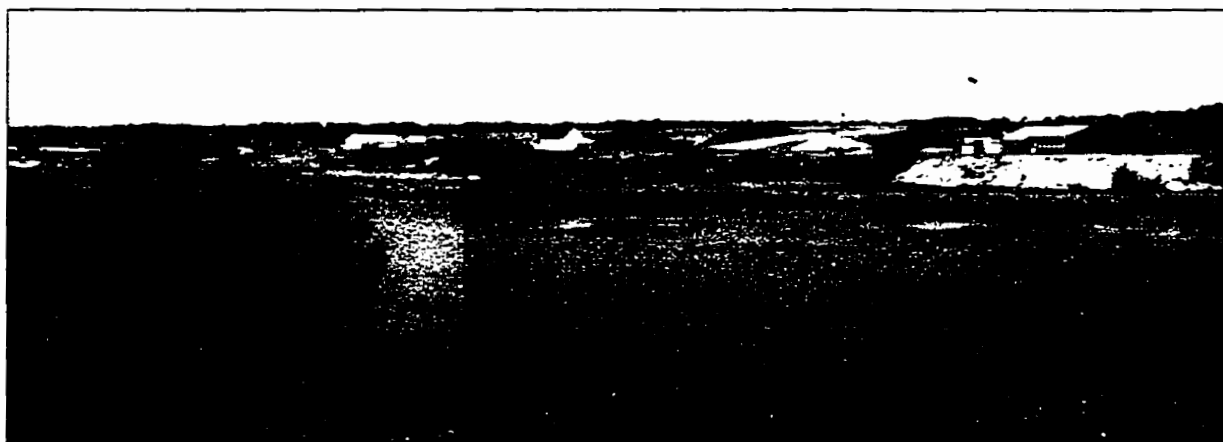


Figure A.20 View of the north side of the river including the disturbed site south of Highway #83

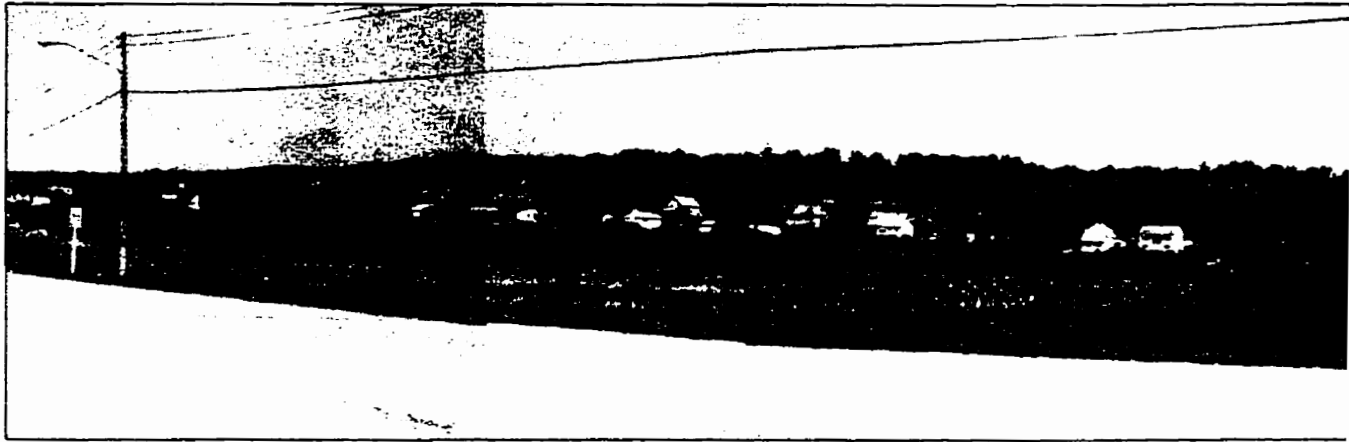


Figure A.21 View along Main Street of the northwest portion of Birtle



Figure A.23 Looking north on Seventh Street



Figure A.24 Looking east on Main Street



Figure A.26 Looking west on Vine Street



Figure A.27 Entrance to the Birtle River



Figure A.22 Looking west on Main Street



Main Street



Figure A.25 View along Seventh Street at Main Street



Birtle Riverside Park

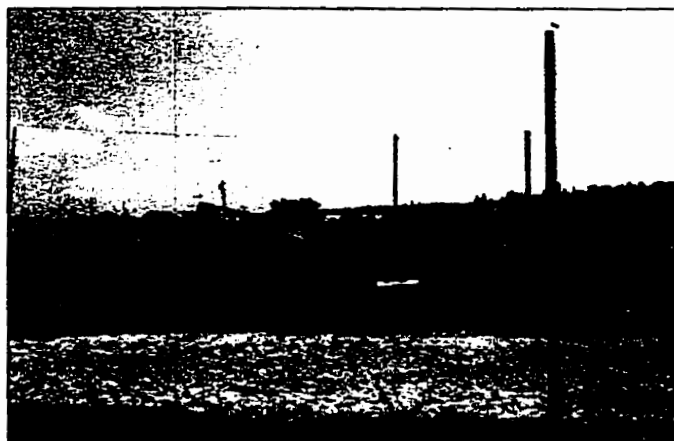
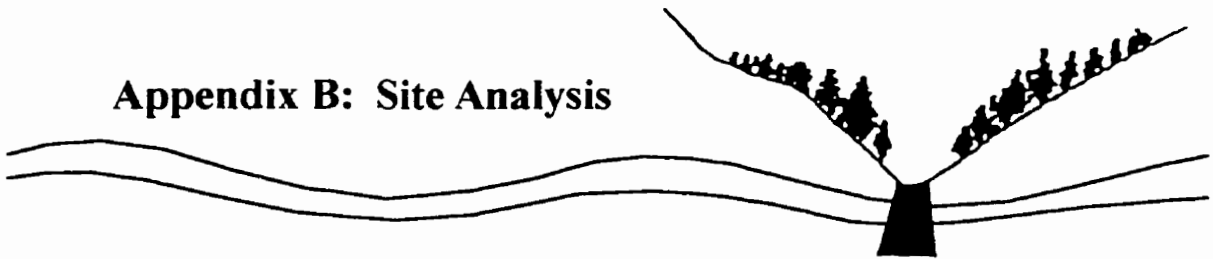
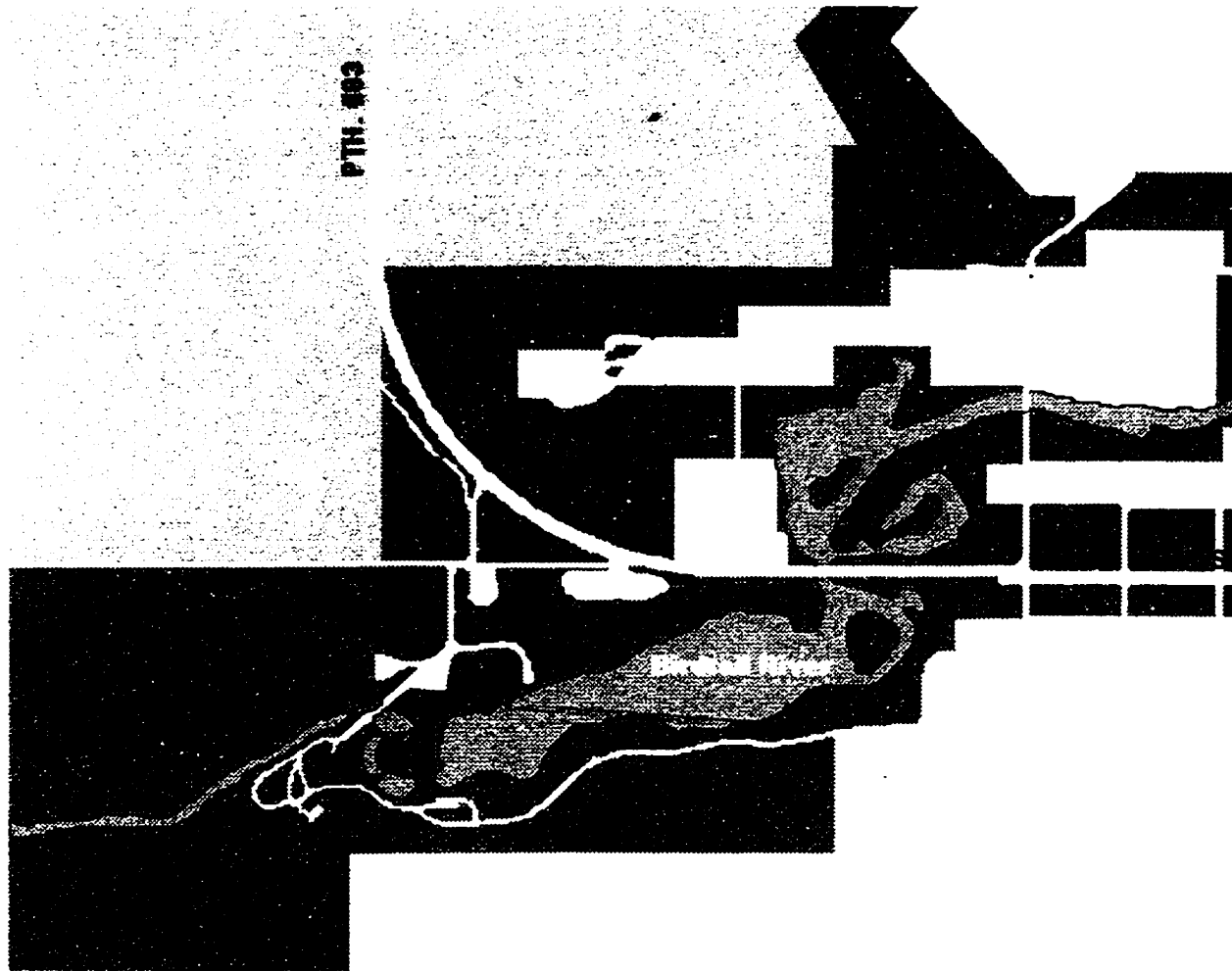


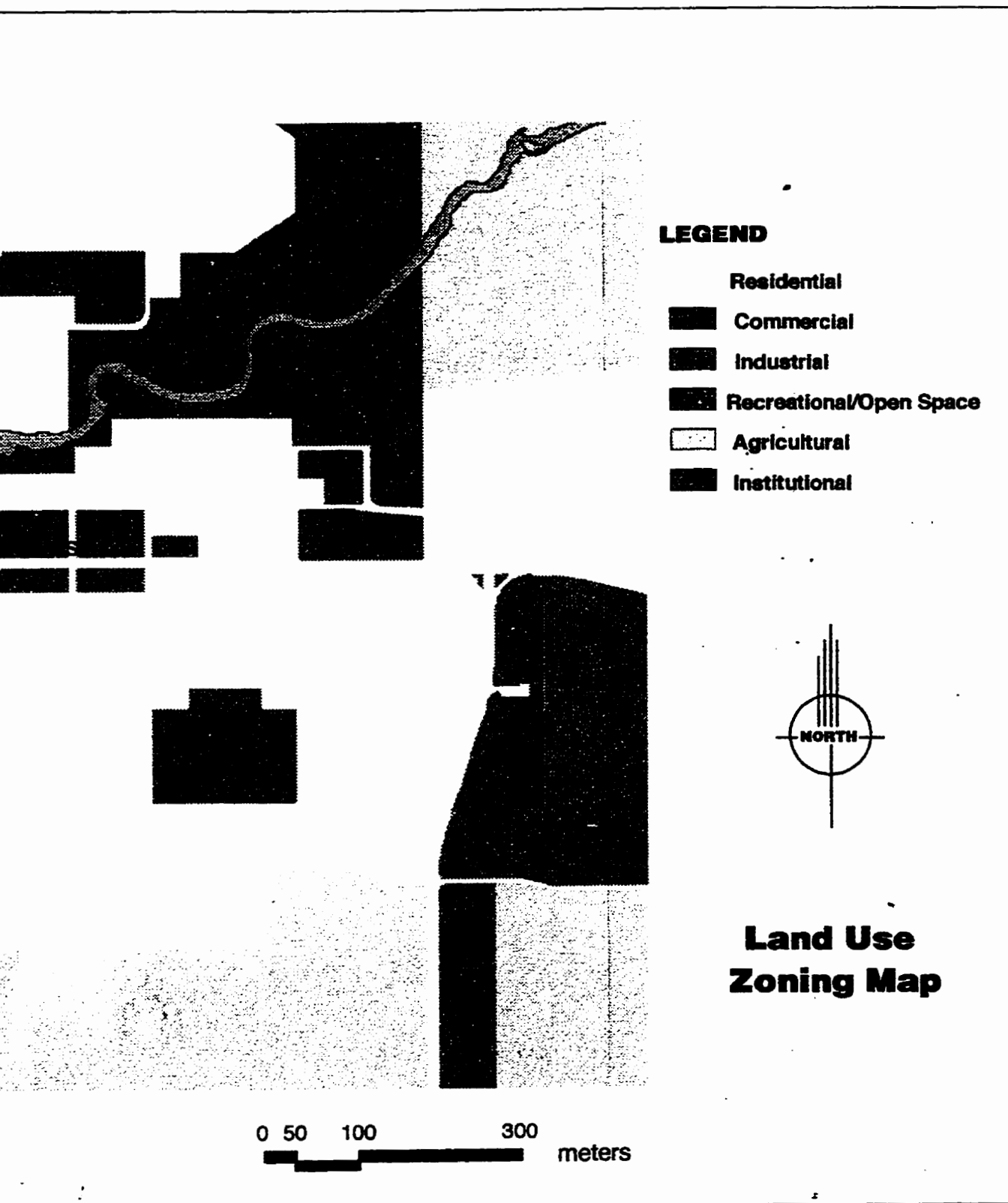
Figure A.28 Children's Play Area in Birtle Riverside Park

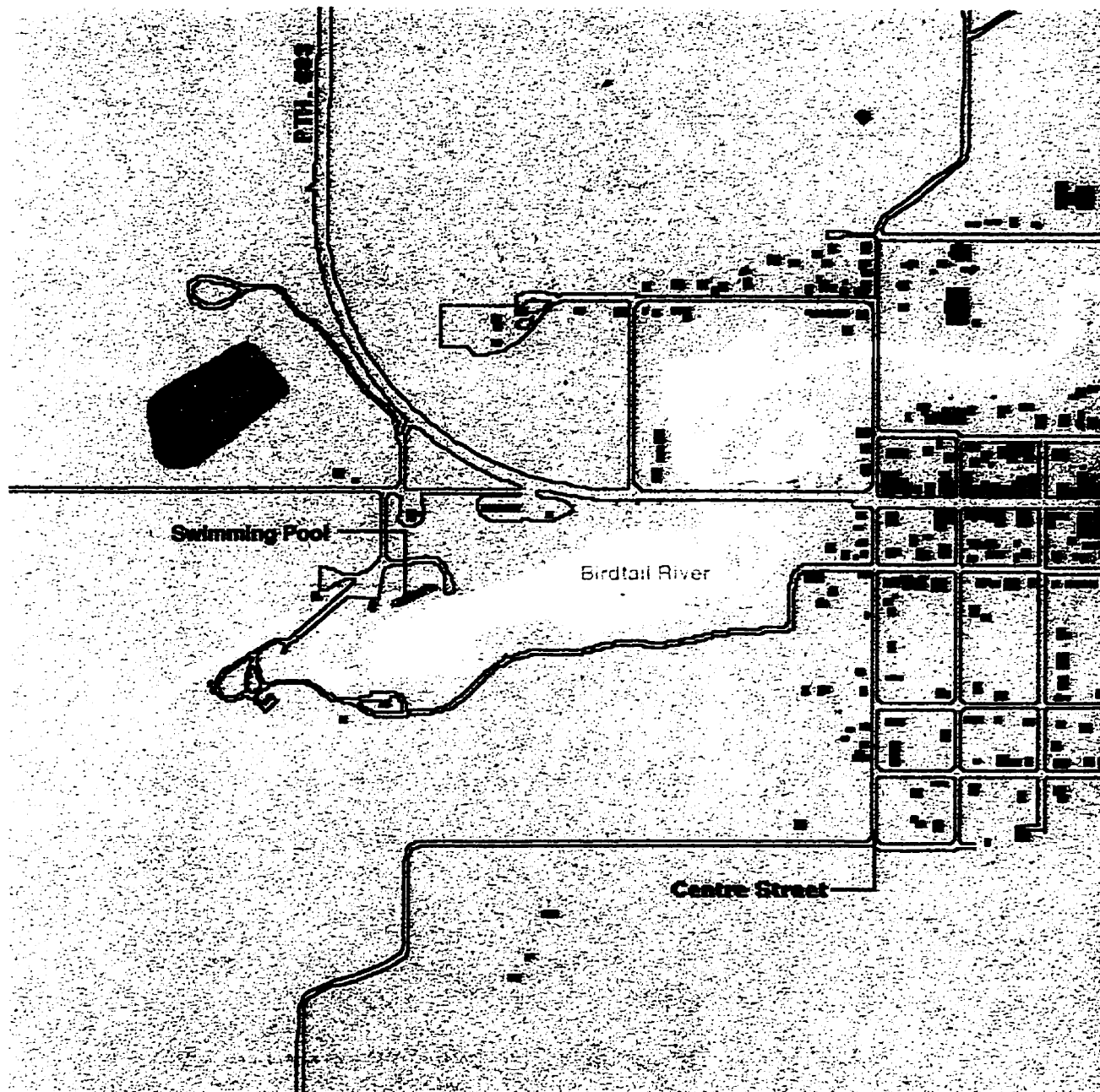
Appendix B: Site Analysis



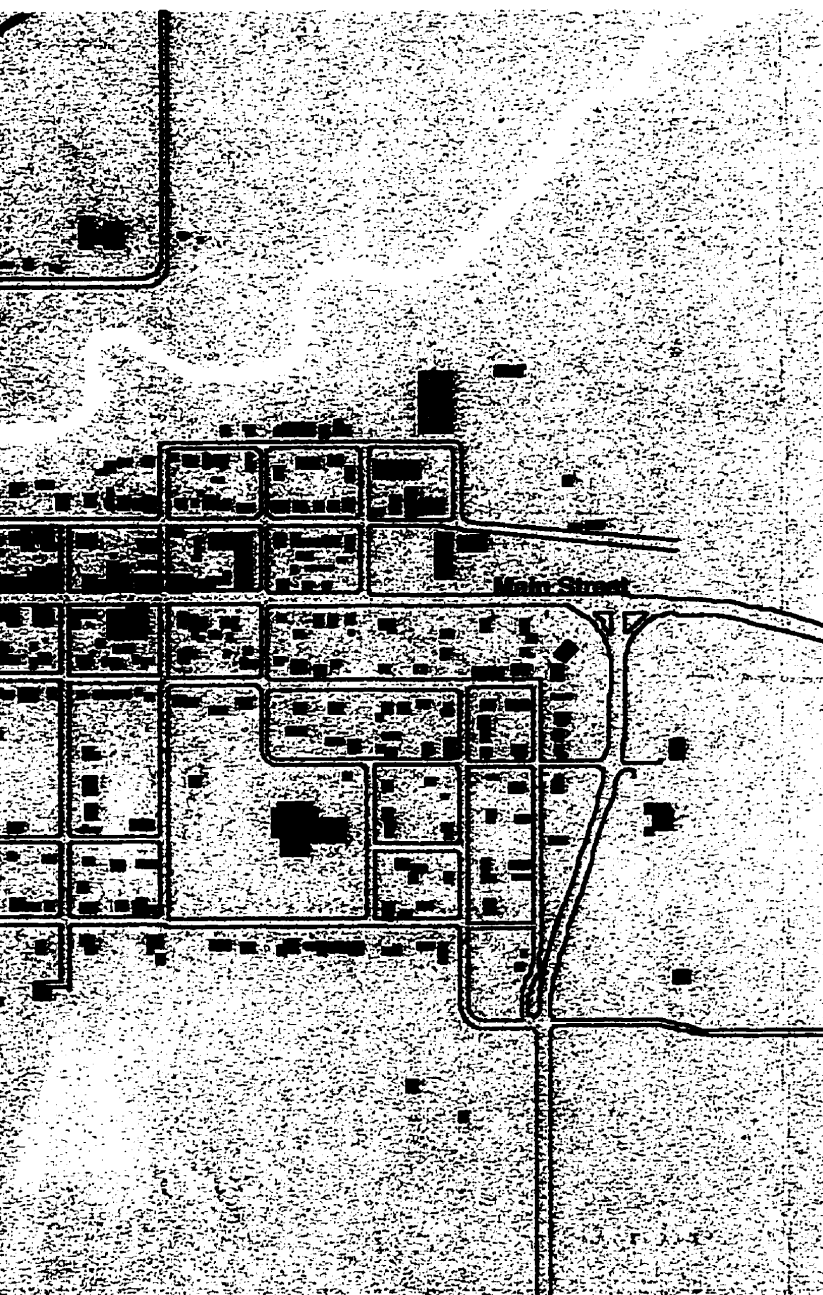


Town of Birtle





Town of Birtle



LEGEND

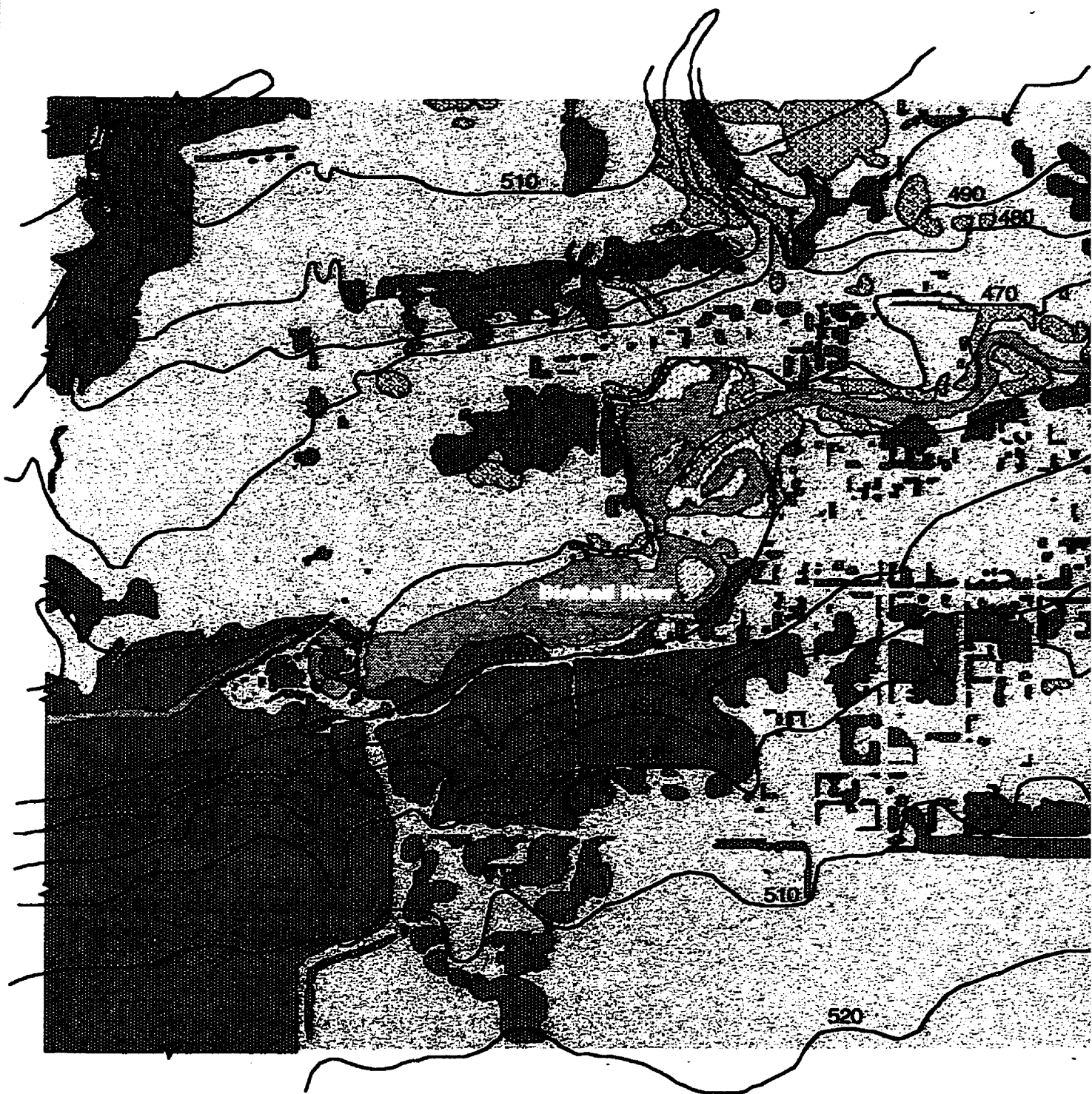
 **Buildings**
(Figure Ground)

 **Streets**

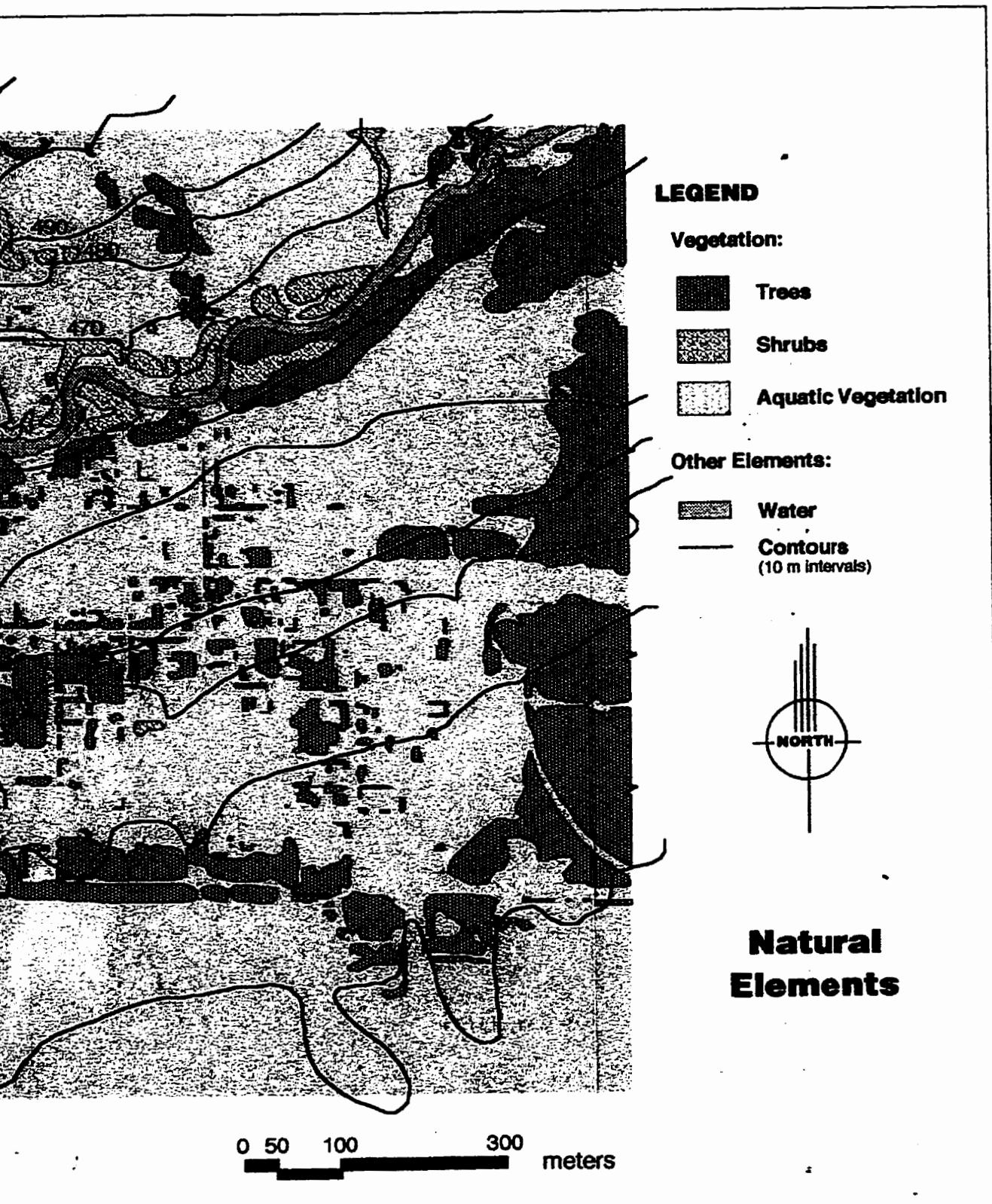


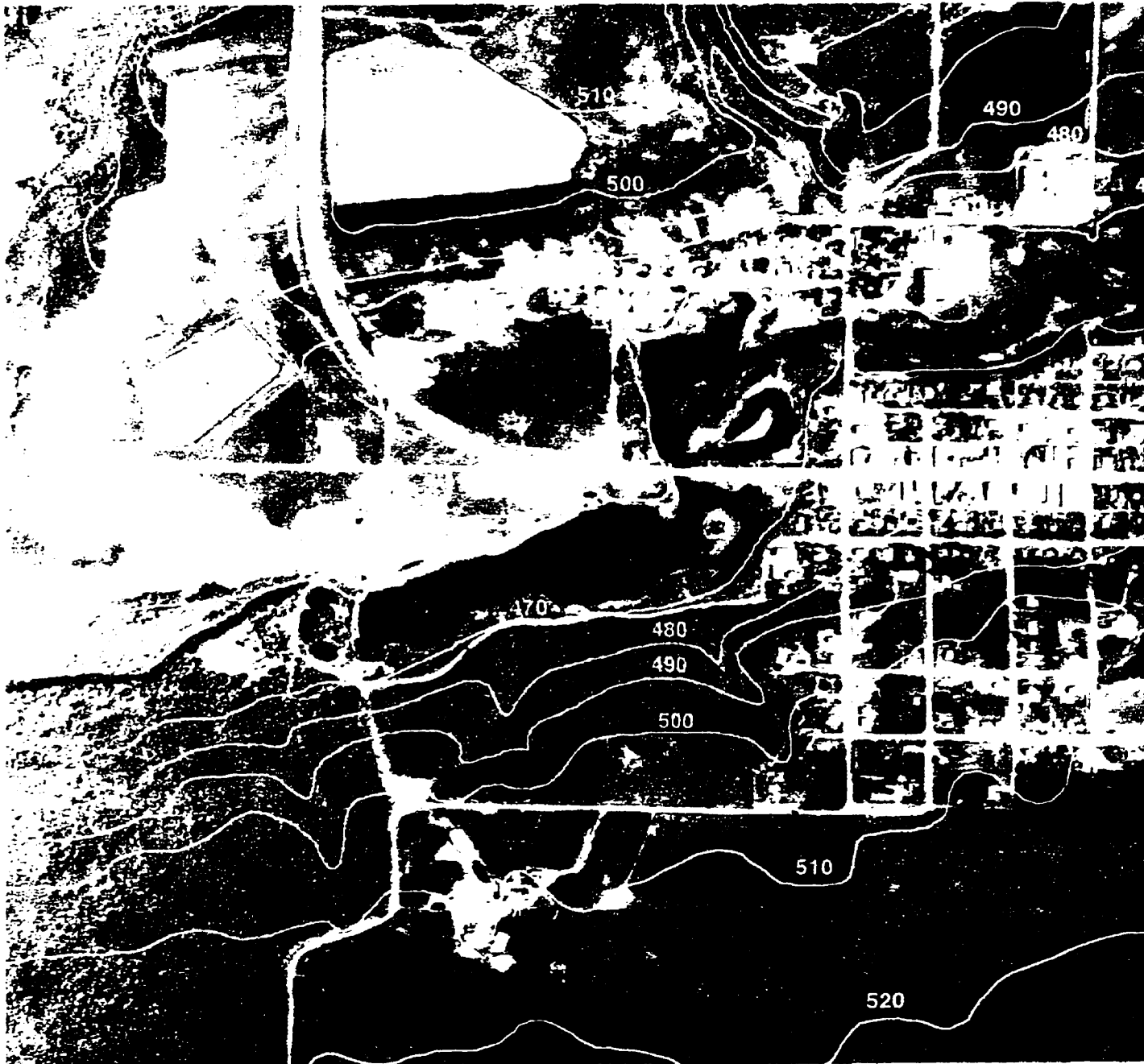
Building Density and Infrastructure

0 50 100 300 meters



Town of Birtle





Town of Birtle



NOTE

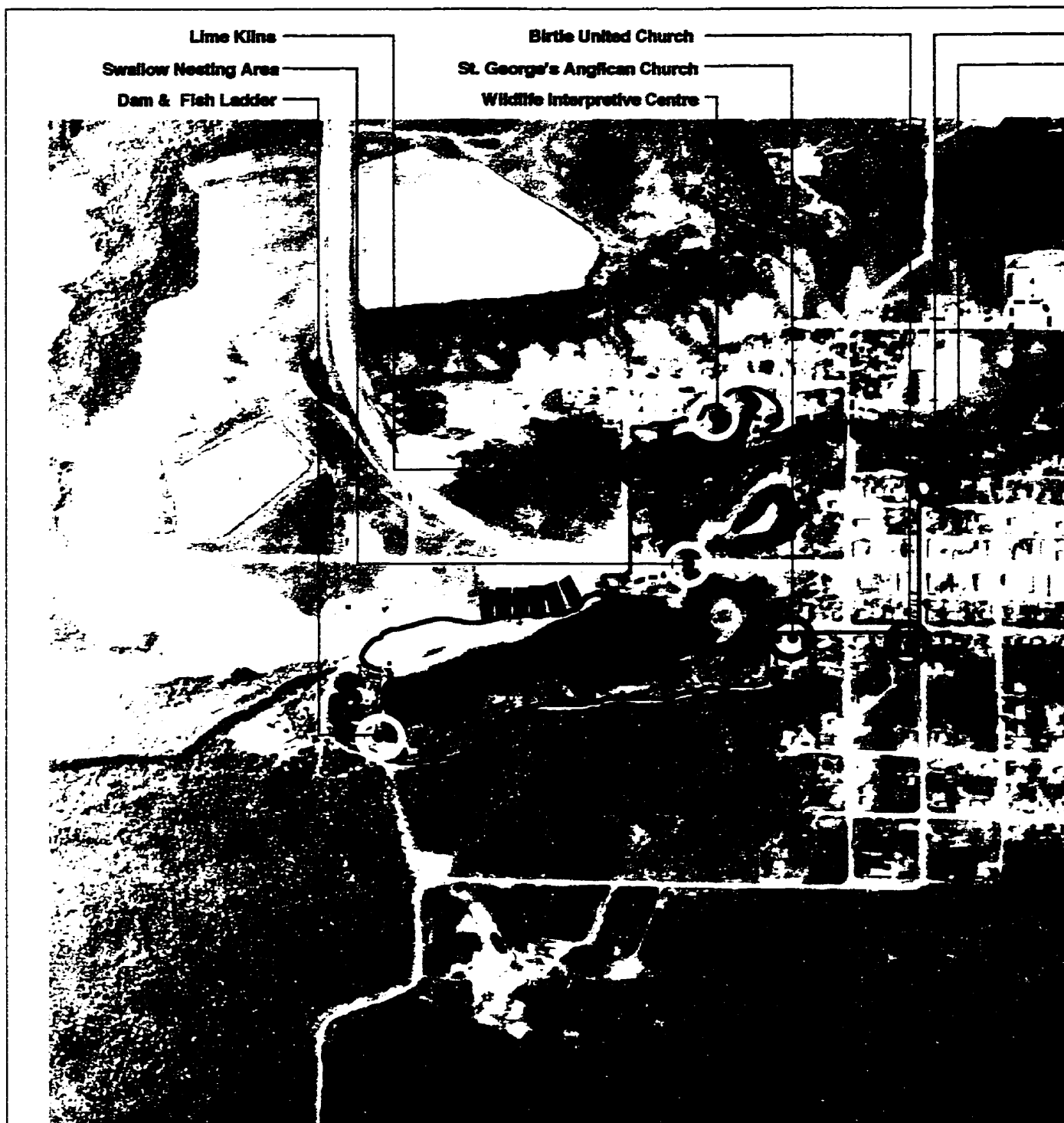
Contour Interval = 10 m

Elevations in Metres
above Mean Sea Level

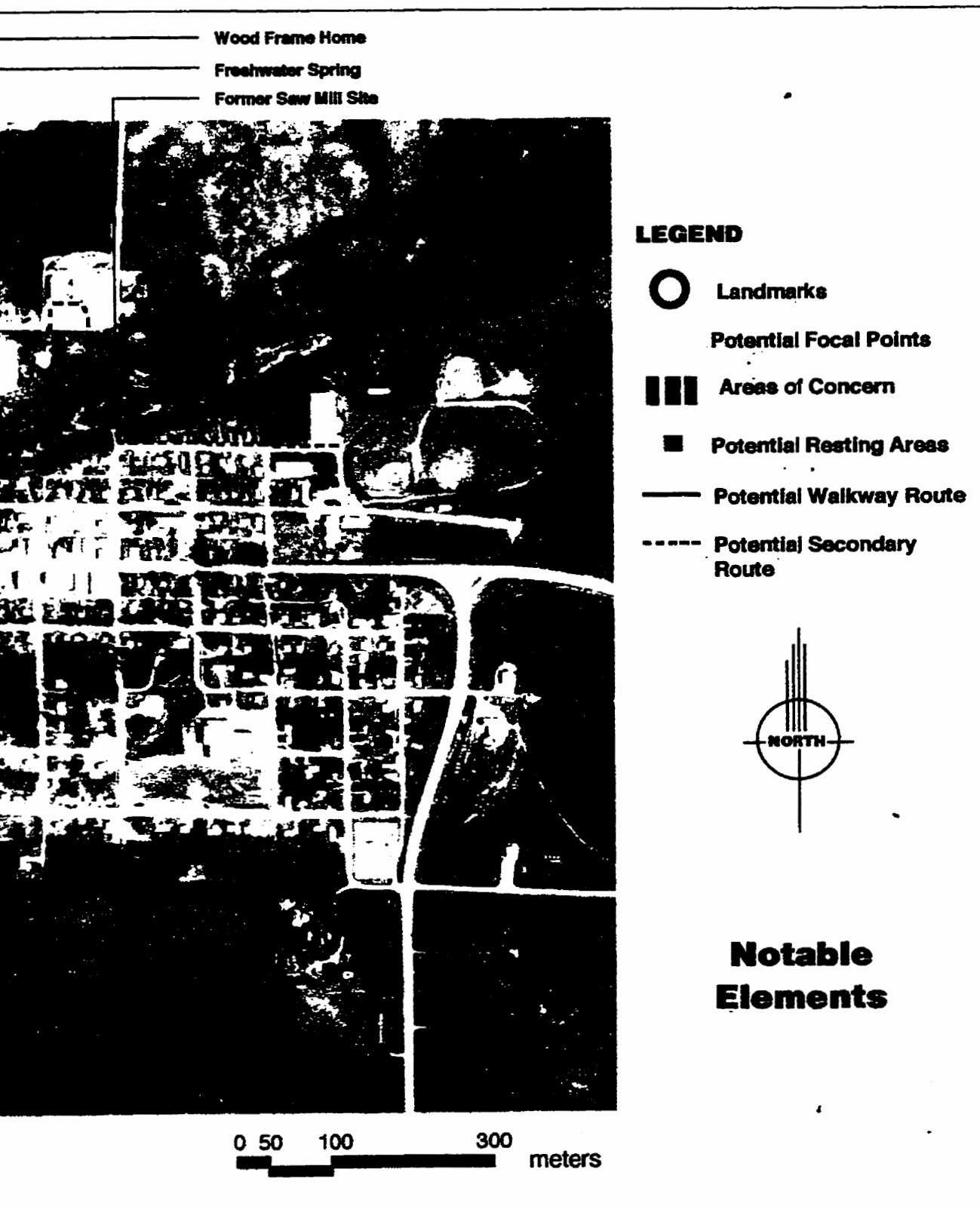


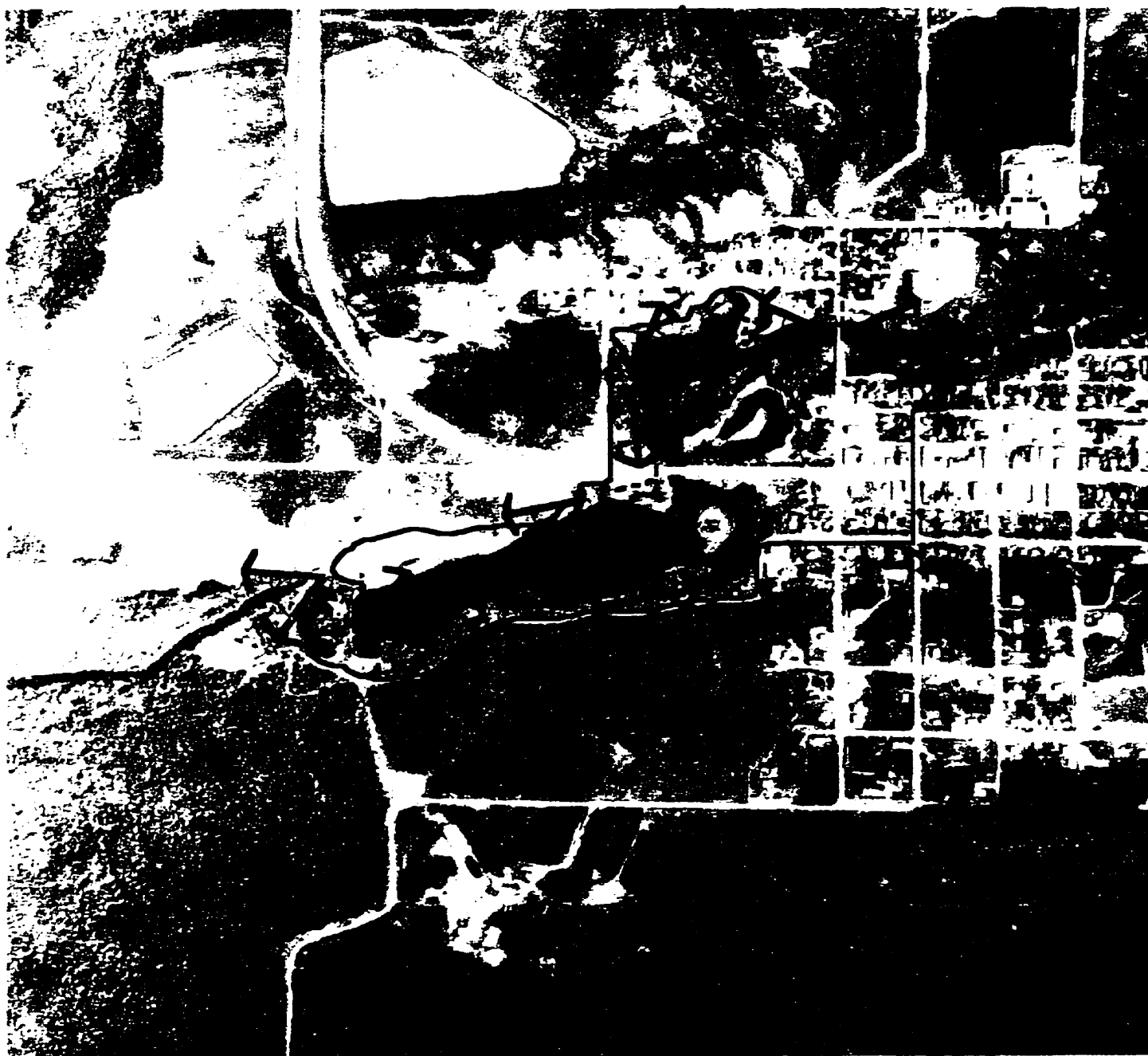
Topography

0 50 100 300 meters



Town of Birtle





Town of Birtle



LEGEND



Vistas (Elevated)

Views (Along River)



Proposed Walkway



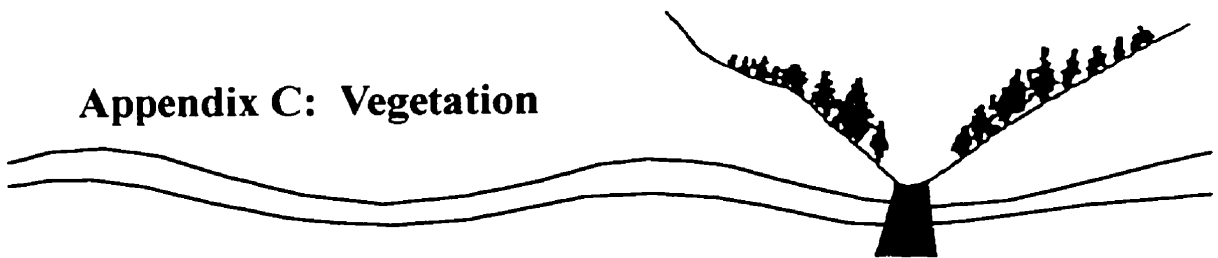
Secondary Walkway



**Views & Vistas
along proposed
Walkway**

0 50 100 300 meters

Appendix C: Vegetation



Vegetation

Birtle's landscape was categorized into six vegetation zones as part of the site analysis. The forest, shrub-grassland, grassland, and aquatic vegetation zones are common Aspen Park-land communities¹ and contain mainly plant material native to this region. Plant material in the disturbed zone consists, to a large extent, of introduced and weedy species. The urban vegetation zone refers to the planted vegetation on public property throughout the town. For location and distribution of vegetation, refer to Natural Elements in Appendix B. The following plant species were identified in each of the vegetation zones as part of a visual reconnaissance of Birtle:

1. Forest Vegetation

Upland Forest: Most of the forest vegetation at Birtle can be classified as upland aspen forest. This includes the aspen/poplar groves within the Birdtail Valley. Canopy species include willow (*Salix* sp.), trembling aspen (*Populus tremuloides*), balsam poplar (*Populus balsamifera*), bur oak (*Quercus macrocarpa*), and Manitoba maple (*Acer negundo*). Understorey species include redosier dogwood (*Cornus sericea*), chokecherry (*Prunus virginiana*), hazelnut (*Corylus cornuta*), wild sarsaparilla (*Aralia nudicaulis*), strawberry (*Fragaria glauca*), Canada anemone (*Anemone canadensis*), highbush cranberry (*Viburnum trilobum*), hawthorn (*Crataegus* sp.), lily-of-the-valley (*Maianthemum canadense*), roses (*Rosa* sp.) and saskatoon (*Amelanchier alnifolia*).



Figure C.1 Canada anemone along forest edge in Birtle Riverside Park.

Lowland Forest: Species of the lowland forest include willow (*Salix* sp.), balsam poplar (*P. balsamifera*), Manitoba maple (*A. negundo*), American elm (*Ulmus americana*) and white birch (*Betula papyrifera*) as canopy species and redosier dogwood (*C. sericea*), lily-of-the-valley (*M. canadense*), Canada anemone (*A. canadensis*), and aster (*Aster* sp.) as understorey species. The dominant tree species of the lowland forest are willow and Manitoba maple.

2. Shrub-Grassland Vegetation

Upland shrub: Identified vegetation of the upland shrub zones includes hawthorn (*Crataegus* sp.), western snowberry (*Symphoricarpos occidentalis*), roses (*Rosa* sp.), saskatoon (*A. alnifolia*), chokecherry (*P. virginiana*), shrub willow (*Salix* sp.), hazelnut (*C. cornuta*), dogwood (*C. sericea*), wild raspberry (*Rubus idaeus*), wolf willow (*Elaeagnus commutata*), spreading dogbane (*Apocynum androsaemifolium*), honeysuckle (*Lonicera* sp.), wild black currant



Figure C.2 Asters are scattered throughout the shrub and grassland vegetation zones.

(*Ribes americanum*), sweet cicely (*Osmorhiza* sp.), aster (*Aster* sp.), common hop (*Humulus lupulus*), goldenrod (*Solidago* sp.), Canada anemone (*A. canadensis*), perennial sow-thistle (*Sonchus arvensis*), northern bedstraw (*Galium boreale*), brome grass (*Bromus inermis*), and other grasses (*Gramineae* sp.).

Lowland shrub: The dominant species of the lowland shrub zones is sandbar willow (*Salix interior*). Other species includes dogwood (*C. sericea*), shrub willow (*Salix* sp.), snowberry (*S. occidentalis*), wild raspberry (*R. idaeus*), roses (*Rosa* sp.), meadow horsetail (*Equisetum pratense*), sow thistle (*Sonchus arvensis*), goldenrod (*Solidago* sp.), sedges (*Carex* sp.), smooth sweet cicely (*Osmorhiza aristata*), aster (*Aster* sp.), stinging nettle (*Urtica dioica*), and grasses (*Gramineae* sp.).

3. Grassland Vegetation

Upland grassland: Vegetation includes western snowberry (*S. occidentalis*), roses (*Rosa* sp.), saskatoon (*A. alnifolia*), chokecherry (*P. virginiana*), wild licorice (*Glycyrrhiza lepidota*), goldenrod (*Solidago* sp.), aster (*Aster* sp.), fescue (*Festuca* sp.), brome grass (*Bromus* sp.), and other grasses (*Gramineae* sp.).

Lowland grassland: Lowland grassland vegetation mainly includes sedges (*Cyperaceae* sp.), rushes (*Juncaceae* sp.), and grasses (*Gramineae* sp.). Some of the species identified were brome grass (*Bromus* sp.), yarrow (*Achillea millefolium*), goldenrod (*Solidago* sp.), purple prairie clover (*Petalostemon purpureum*), false Solomon's seal (*Smilacina stellata*), silverweed (*Potentilla anserina*), snowberry (*S. occidentalis*), and white cinquefoil (*Potentilla arguta*).

4. Aquatic Vegetation

The dominant species along the river's edge is cattail (*Typha* sp.). Some of the other species identified were river bulrush (*Scirpus fluvatilis*), great bulrush (*Scirpus validus*), and pondweed (*Potamogeton* sp.).



Figure C.3 The great bulrush is one of the species found along the river's edge (aquatic vegetation zone).

5. Disturbed Sites

Although minimal disturbance is apparent in some of the vegetation zones, the disturbance factor was considered to be nonsignificant with no need for intervention with the exception of one site. This site is located at the west end of Birtle, south of Highway # 83 and east of Birtle Riverside Park. This area has been affected by adjacent road and building construction with rubble pushed over the edge of the existing slope. Consequently, the rubble is exposed and existing vegetation has been buried. Only a few plant species have managed to regenerate in this area. This area is in need of some rehabilitation work because not only is this site unpleasant to look at from various points along the proposed river walkway, but stabilization of the slope is required. Vegetation identified at this site includes absinthe (*Artemisia absinthium*), snowberry (*S. occidentalis*), brome grass (*Bromus* sp.), goldenrod (*Solidago* sp.), yellow sweet clover (*Melilotus officinalis*), sow thistle (*S. arvensis*), and spreading dogbane (*A. androsaemifolium*).

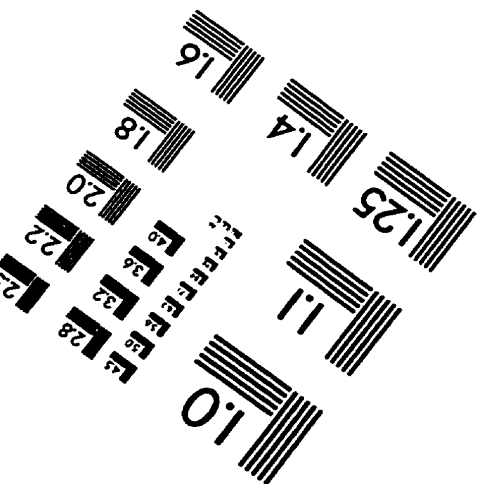
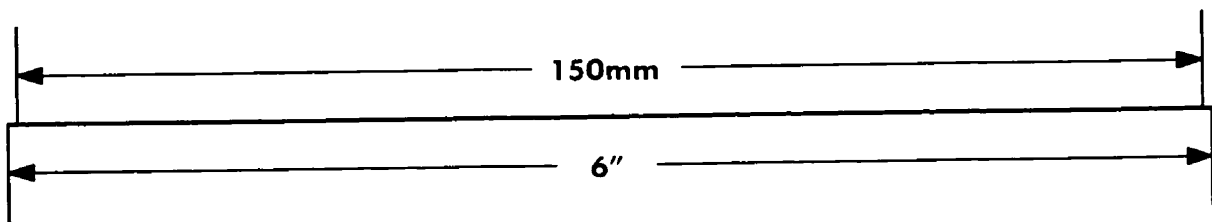
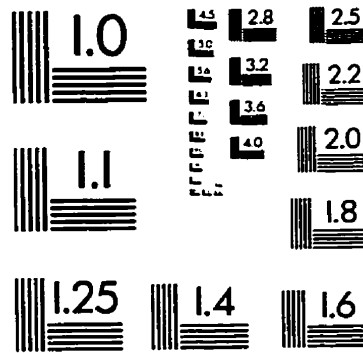
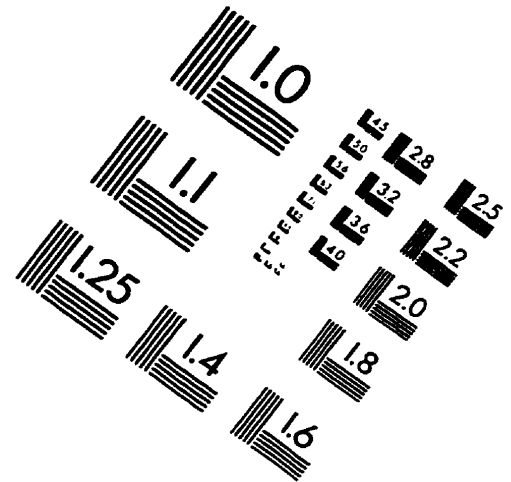
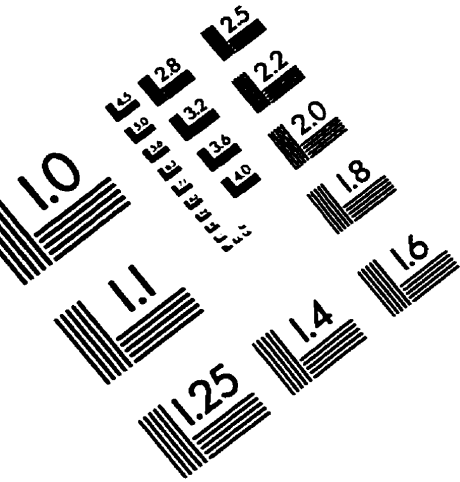
6. Urban Vegetation

Urban or planted vegetation includes white spruce (*Picea glauca*), Colorado blue spruce (*Picea pungens*), American elm (*U. americana*), Northwest poplar (*Populus* cv. *Northwest*), Lilac (*Syringa* sp.), mountain ash (*Sorbus americana*), and common caragana (*Caragana arborescens*).

¹ Derek Johnson, et. al., *Plants of the Western Boreal Forest & Aspen Parkland*, (Edmonton: Lone Pine Publishing, 1995), p. 17.

J. Looman and K. Best, *Budd's Flora of the Canadian Prairie Provinces*, (Agriculture Canada: Research Branch, Publication 1662, 1987).

IMAGE EVALUATION TEST TARGET (QA-3)



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