

Kinokamau Plains Area Structure Plan

Office Consolidation July 2007

Prepared by:

*Planning and Policy Services Branch
Planning and Development Department
City of Edmonton*

Bylaw 12386 was adopted by Council in August 2000. In July 2007, this document was consolidated by virtue of the incorporation of the following bylaws:

Bylaw 12386 Approved August 22, 2000 (to adopt the Kinokamau Plains ASP)
Bylaw 12451 Approved November 15, 2000 (to require an environmental study of the Freeman Woodland be complete and assessed prior to any development of the area; adding as Appendix “C” the map entitled “Freeman Woodland”)
Bylaw 14645 Approved July 9, 2007 (Amendments to the Future Road Network to remove the 127 Avenue/Anthony Henday Drive flyover and the 127 Avenue arterial roadway from the plan)

Editor’s Note:

This is an office consolidation edition of the Kinokamau Plains Area Structure Plan, Bylaw 12386, as approved by City Council on August 22, 2000. This edition contains all amendments and additions to Bylaw 12386.

For the sake of clarity, new maps and a standardized format were utilized in this Plan. All names of City departments have been standardized to reflect their present titles. Private owners’ names have been removed in accordance with the Freedom of Information and Protection of Privacy Act. Furthermore, all reasonable attempts were made to accurately reflect the original Bylaws. All text changes are noted in the right margin and are italicized where applicable.

This office consolidation is intended for convenience only. In case of uncertainty, the reader is advised to consult the original Bylaws, available at the office of the City Clerk.

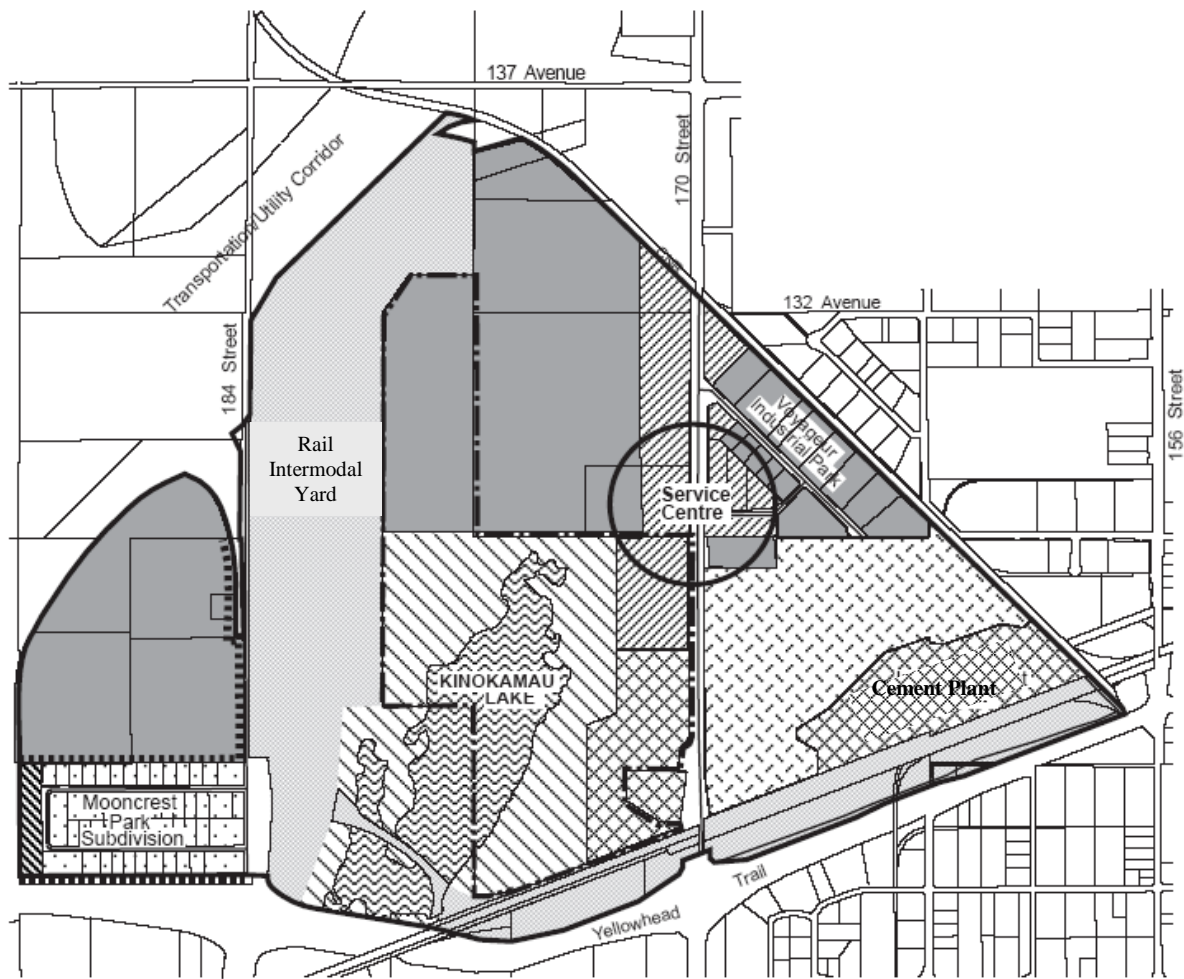
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Kinokamau Plains

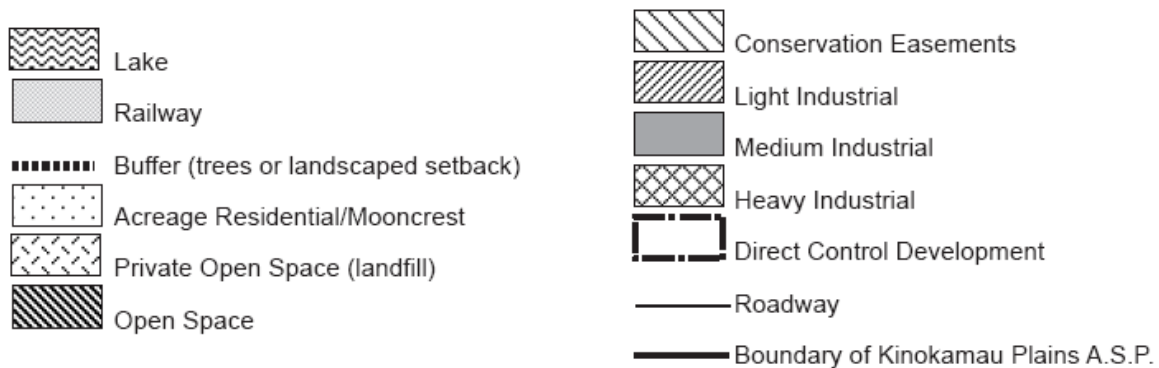
Area Structure Plan

2000

IPS CONSULTING INC.



BYLAW 12386
APPROVED KINOKAMAU PLAINS
Area Structure Plan



*Amended by Editor

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(Amended by Bylaw 12451)

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PREFACE

This Area Structure Plan was prepared by IPS Consulting Inc. for *a private corporation* (2), which led the effort to develop a landowner driven plan at the request of the City of Edmonton Planning and Development Department. This Area Structure Plan is not the first document concerned with planning in the Kinokamau Plains area. The City of Edmonton Planning and Development Department produced the Kinokamau Plains Servicing Concept Design Brief in 1994 which was very similar to an Area Structure Plan. Due to the thoroughness of the background information included in that document, we have borrowed heavily from it in the background sections of this report, rather than duplicate that effort.

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1.0 Introduction

This Area Structure Plan (ASP) document provides the background and framework for the development and redevelopment of approximately 667.53 hectares (1,649.5 Acres) of agricultural, industrial, commercial, and residential land situated in northwest Edmonton, being north of the Yellowhead Trail bounded by *the Sangudo rail line* to the northeast (the boundary of the Mistatim Industrial Area Structure Plan) and the Provincial Restricted Development Area (Transportation/Utility Corridor) to the west and northwest.

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The Plan lays out future land uses for the area, including future development of medium industrial areas along 184 and 170 Streets, as well as a commercial/light industrial service centre on 170 Street. Future transportation services and networks, as well as water and sanitary services are also detailed in the plan. Preservation of the environment, particularly Kinokamau Lake, is another important aspect of the plan.

As this area is already partially developed, the Plan includes descriptions of existing land uses and services.

1.1 FORMAT

This ASP document is divided into four sections. Section One provides an overview and introduction to the Area Structure Plan. Section Two describes the existing situation of the Kinokamau Plains area, including the natural features, land use, transportation, and services. Section Three details the land ownership within the Area Structure Plan area. Section Four describes the development concept for the future with details of land use proposals, how the environment will be preserved; and future transportation, water, and sanitary sewer services. Implementation stages and strategies, as well as conformance to statutory plans, are also noted in the final section.

1.2 LOCATION

The Kinokamau Plains Area Structure Plan area comprises approximately 667.53 hectares (1,649.5 Acres) of agricultural, industrial, commercial, and residential land situated in northwest Edmonton, an area north of the Yellowhead Trail bounded by the *Sangudo rail line* to the northeast (the boundary of the Mistatim Industrial Area Structure Plan) and the Provincial Restricted Development Area (Transportation/Utility Corridor (TUC)) to the northwest and west the

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Yellowhead Trail to the south. The TUC is set aside for the eventual extension of Anthony Henday Drive, part of the ring road around Edmonton. The City of St. Albert is north of the Transportation/Utility Corridor. To the east is the Mistatim Area Structure Plan, to the south of Yellowhead Trail is the Northwest Industrial Area Outline Plan. Both of these Plan areas are comprised of industrial development. Kinokamau Lake is located in the south central portion of the Plan area. This waterbody was identified by Ducks Unlimited Canada as the best natural wetland habitat within the City of Edmonton corporate boundaries.

1.3 DEVELOPMENT OBJECTIVES

The development objectives for the Kinokamau Plains Area Structure Plan are:

1. To create appropriate development conditions to attract additional business and employment activity to the Kinokamau Plains area of northwest Edmonton.
2. To attract predominantly medium industrial development to the Kinokamau Plains area which requires either on-site or modest off-site city services.
3. To designate areas for the development of business services.
4. To retain and preserve Kinokamau Lake as a sustainable urban wetland.
5. To provide for the smooth conversion of interim land uses to long term urban uses over the next 30 years.
6. To design a long term, efficient, and safe transportation network to provide external access to the area and to provide for internal circulation.

1.4 HISTORY

1.4.1 Land Use History

The Kinokamau Plains area has historically been an agricultural area. Due to clay deposits in the area, industries which use the clay, and products made from the clay, moved into the Area Structure Plan area and to the Mistatim area, north and east of Kinokamau Plains. For example, *a private corporation (33; refer to Table 1 on page 18-19)*, a company that manufactures clay brick, has a plant just north of the Area Structure Plan boundary and utilizes clay from nearby lands it owns within the Kinokamau Plains ASP area. *Another private corporation, a*

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firm that manufactures masonry products, is located just northeast of the ASP area, and *a third private corporation (concrete)* is located in the Voyageur Industrial Park within the Plan boundary. *A forth private corporation (2)* has a cement plant in the southeast corner of the Area Structure Plan area. *The private corporation (2)* extracted clay just north of its plant and then sold the clay pit to a waste management firm for a landfill operation which has been active since 1974.

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When *the private corporation (2)*, as mentioned above, decided to forego fifteen years of clay supply beneath its Kinokamau Lake holdings, *it* purchased additional lands between 170th and 184th Streets to ensure a 30 year clay and clean fill supply to continue operations.

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The private corporation (2) later sold a portion of its lands along 184th Street in 1999 to *a rail line* for an Intermodal Yard, which is presently under construction.

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West of 184th Street, Mooncrest Park was sub-divided in 1959 into 21 three acre parcels, most of which have been developed residentially along with a few industrial businesses. Many of these original three acre parcels have been subdivided into one acre parcels. North of Mooncrest, only one farm residence remains, and although some of the undeveloped land is being farmed or is treed, the owners wish to develop their lands for industrial/commercial purposes.

1.4.2 Planning History

The Kinokamau Plains area was annexed to the City of Edmonton on January 1, 1982 from the County of Parkland. Since then, the city has approved planning studies for all of the lands within the City surrounding the Kinokamau Plains Area Structure Plan area (Big Lake Area Structure Plan to the west, Yellowhead Corridor Area Structure Plan to the south, and Mistatim Area Structure Plan to the north and east).

Mooncrest Park

The Mooncrest Park subdivision was registered in 1959 to create 21 three acre parcels and a reserve lot. In 1979 *Parkland County* designated the Mooncrest Park area for industrial and commercial uses (IC) under its Land Use Bylaw and General Municipal Plan. This IC zoning did not allow for residential development as either a permitted or discretionary use. Mooncrest Park

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developed as a residential area with one and three acre lots and some industrial activity (e.g. trucking firms, lawn ornament manufacturer).

Once the area was annexed by the City, many decisions by the Development Officer regarding development permit applications for industrial/commercial uses were successfully appealed to the Development Appeal Board. Many of the residents did not want further industrial development in Mooncrest Park. In May 1991, the Mooncrest Park Landowner's Association applied to the City for residential *rezoning* under a *DC2* (Site Specific Development Control) *Provision*. The Administration recommended that a residential precinct was inappropriate within the larger area designated for industrial development in the General Municipal Plan. The Planning and Development Department viewed the approval of Mooncrest Park as a residential precinct, without an overall land use and development strategy, to be potentially precedent setting and contravening established City development policies. At their July 16, 1991 meeting, Council agreed with the Administration and did not proceed with the *DC2 provision* application.

Amended by Editor

The Kinokamau Plains Servicing Concept Design Brief (SCDB)

On June 24, 1992, the Mooncrest Park Landowner's Association proposed in writing to the Planning and Development Department that an Area Structure Plan be prepared for an area bounded by the Transportation/Utility Corridor, 170th Street, and Yellowhead Trail. This ASP was required by the then Edmonton Metropolitan Regional Planning Commission as a precondition to considering an amendment to the Regional Plan to allow further residential development in Mooncrest. The Administration prepared a report addressing this request and forwarded it to City Council. On September 15, 1992, Council moved that the Administration prepare an Area Concept Plan. The Planning and Development Department prepared the Kinokamau Plains Servicing Concept Design Brief in response to the Council motion.

The Planning and Development Department prepared a Servicing Concept Design Brief (SCDB) rather than an Area Structure Plan to allow for "flexibility with respect to unanticipated and innovative types of development, land use patterns and servicing concepts/techniques" (pg. 3) and because "development processing timelines are likely to be less than those associated with the conventional statutory ASP process, particularly if there are disagreements among landowners and

developers and uncertainties in defining City servicing requirements" (pg. 4). The SCDB was prepared in consultation with other City departments and with landowners through public meetings and questionnaires.

The SCDB recommended that Mooncrest Park be designated as a rural residential area "capable of long-term integration into future suburban development within the west half of the study area." The SCDB also contained recommendations that the west half of the area bounded by 170th Street and 184th Street be rezoned a suburban residential area, while the east half remain designated an industrial area. Kinokamau Lake was slated for preservation and protection and other Environmentally Sensitive Areas and Significant Natural Areas were to be further evaluated in terms of preservation to provide a buffer between residential and industrial developments. The SCDB was submitted to Council for the May 16, 1994 Public Hearing.

Some of the heavy industrial businesses within, and adjacent to, the SCDB study area made representations regarding the SCDB to Council, stating that it did not represent compatible land use to have future residential development so close to existing heavy industry. Council tabled the SCDB indefinitely on May 16, 1994 and moved that any future work on the Servicing Concept Design Brief be done by private landowners in the area. However, Council did establish five *DC2 Provision* for Mooncrest Park. These *DC2 Zones* designated most of Mooncrest Park as residential and allowed for the continuance of legally existing light industrial/commercial businesses but that the area revert to residential uses if the light industrial/commercial uses discontinued for more than 6 months.

Amended by Editor

The Kinokamau Plains Area Structure Plan

In the spring of 1999, *the private corporation (2)* prepared an application for *DC2 Provision* for its clay extraction operation between 170th and 184th Streets. The Planning and Development Department did not want to consider this application without a general land use and development strategy for the area. The Department requested that *the private corporation (2)* prepare an Area Structure Plan, taking the September 15, 1992 Council motion for an area concept plan, and the May 16, 1994 Council motion that such a plan be done by private landowners, as sufficient authorization to proceed. Subsequently a letter was sent to IPS Consulting Inc. on September 29, 1999 from the Planning and Development

Amended by Editor

Department authorizing the *private corporation (2)* to prepare an application for an Area Structure Plan. This letter is appended to the ASP as Appendix A.

Amended by Editor

1.5 THE AREA STRUCTURE PLAN DEVELOPMENT PROCESS

The private corporation (2) contracted IPS Consulting Inc. (IPS) to prepare the Kinokamau Plains Area Structure Plan (ASP). IPS sub-contracted Stantec Consulting Ltd. to prepare the legal compiled plan, transportation impact assessment, and servicing studies. This Area Structure Plan was prepared over a three month process.

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In early October 1999, IPS sent a letter to all landowners within the proposed Plan area, informing them of the Area Structure Plan process and schedule, and inviting them to contact IPS for more information or to meet with them. IPS then contacted all the major landowners within the Area Structure Plan boundary and invited them to meet with IPS and, at times, representatives of *the private corporation (2)*, to review initial draft land use plans and share their concerns and suggestions. Meetings took place with almost all the major landowners with two of them being briefed by telephone and mail. IPS delivered notices to all businesses within Voyageur Industrial Park inviting them to a meeting held November 17th, 1999. An IPS associate visited Mooncrest Park landowners over a weekend and evening to meet with them individually.

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IPS and *private corporation (2)* representatives also held a meeting with representatives from *Alberta Transportation and Infrastructure* and Alberta Environment to discuss draft ASP elements. Representatives of the West Edmonton Business Association (WEBA) also met with IPS and *the private corporation (2)* representatives. A later meeting took place between IPS, Stantec, and the WEBA Transportation and Goods Movement Committee, at their request, to explain the transportation proposals in detail.

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An Open House regarding the draft ASP was held December 1, 1999. Display panels showed the existing and future land uses, future transportation networks, future water and sewer services, as well as information on how the environment would be protected, particularly the Kinokamau Lake conservation area. Future plans for the *Rail Intermodal Yard* and the *landfill site* were also displayed. Displays regarding *the private corporation's (2) DC2* application, originally shown at that Open House in late April 1999 were also present. Representatives from IPS Consulting, *the private corporation (2)*, Ducks Unlimited, and Stantec

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Consulting presented the draft Area Structure Plan to attendees and answered questions.

At the Open House, the draft ASP received a generally favorable response. (See Appendix B for attendee comments). Seventy-nine percent of those who filled out comment sheets supported the ASP and twenty-one percent supported it with reservations; no one responded that they did not support the ASP.

IPS and Stantec met with City Servicing departments after the Open House to discuss draft suggestions. In mid December, 1999 this Area Structure Plan document was prepared, as were the accompanying documents: Kinokamau Plains Land Analysis 1999, Kinokamau Plains Area Structure Plan Transportation Impact Assessment, and Kinokamau Plains Water and Drainage Servicing Study.

Responding to Landowner Input and Public Requests

Throughout the development of the Area Structure Plan, IPS Consulting has worked with landowners to develop a plan that meets their interests as well as the greater long term good. IPS has shifted future land uses and modified some of the staging of development in response to landowner requests. IPS Consulting has responded to reservations expressed by Mooncrest Park residents (in comment sheets and in our meetings with them) about noise in Mooncrest Park from the increased traffic in the area and the industrial area to the north of Mooncrest Park. IPS added buffer zones of trees and/or landscaping around Mooncrest Park on the future land use map.

Landowners in undeveloped areas have also expressed some concern about the cost of water and sanitary sewer servicing. IPS and Stantec have had meetings and discussions with *the rail line* and City representatives to find ways to bring these costs down.

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IPS and Stantec have also spoken and corresponded with the City, a *private corporation* (2), and *the rail line* with regards to both particular and general transportation concerns raised by various landowners. Some of these are reflected in the ASP and some were resolved outside the ASP process.

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IPS has responded to numerous phone calls and requests for meetings, handout maps, and information by landowners, real estate interests, and the general public throughout the ASP process.

2.0 Existing Site Conditions

2.1 NATURAL FEATURES

The natural features of the Kinokamau Plains area are shown in Figure 1 - Existing Land Use. The area is generally flat (680-685 metres above sea level) with higher areas found in the southwest, northwest, and northeast of the Area Structure Plan (ASP) area. The land generally slopes towards Kinokamau Lake east of 184th Street. West of 184th Street the land slopes west towards Big Lake and Kirk Lake.

An HBT-Agra hydrogeological study found that the ASP area is geotechnically suited for infrastructure construction and development. The east half of the area is flat terrain underlain primarily by medium and high plasticity lacustrine clay with minor silt and sand layers, followed by very stiff clay. The surface geology is lacustrine. Ground water in this terrain typically commences at 2 to 3 metres below the surface. The west side of the ASP area is hummocky, rolling terrain, underlain by variable sequences of clays of varying plasticities followed by extensive deposits of silt and sand. The surface geology here is pitted deltaic deposits with groundwater typically found at depths of 12 metres or more¹.

In terms of vegetation, undeveloped areas have forest or scrub bush cover or are vacant grassland. In 1999, a large portion of the area continued to be actively farmed.

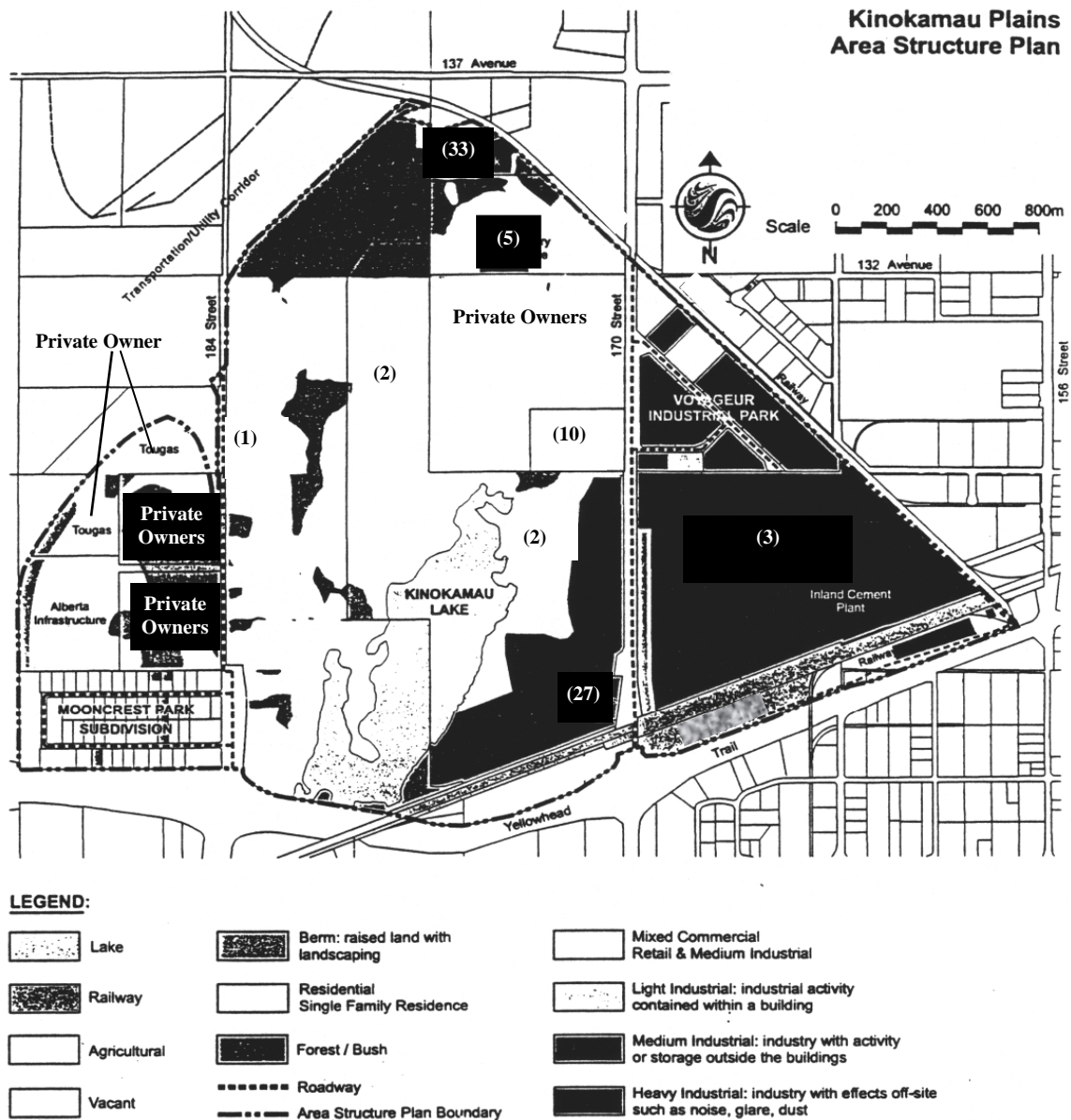
Kinokamau Plains includes some areas designated as environmentally sensitive or significant natural areas in the Inventory of Environmentally Sensitive and Significant Natural Areas, City of Edmonton report prepared for the City Planning and Development Department by GEOWEST Environmental Consultants in 1993. These areas are described below. They are the Freeman Woodland, *a private corporation's (5) woodland and wetland*, the Kinokamau Lake Woodland, and Kinokamau Lake.

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GEOWEST's criteria for significant natural areas involve a minimum size and represent good examples of vegetation as well as providing wildlife habitat; they

¹ *The Hydrogeological Evaluation – Kinokamau Plains and Mistatim Areas Northwest Edmonton (E.G. – 07605 August, 1993), prepared by HBT Agra Limited.*

Figure 1 – Existing Land Use Including Natural Resources and Land Ownership (Bylaw 12376, August 22, 2000)



EDITOR'S NOTE: The numbers on this map and in the text of this document correspond to the reference numbers in Table 1 - Land Ownership in Kinokamau Plains Area Structure Plan.

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Figure 1
Existing Land Use
Including Natural Resources
and Land Ownership
As of October 12, 1999

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"have the potential to remain sustainable within an urban environment and are significant from an environmental perspective to the community of Edmonton because of their size or features." Significant natural areas "can withstand various degrees of human use." Environmentally sensitive areas are "undisturbed or relatively undisturbed sites which, because of their natural features have value to society and ecosystems worth protecting, but are susceptible to further disturbance."

In order of importance regionally environmentally sensitive areas come first (Kinokamau Lake), followed by local environmentally sensitive areas (*a private corporation's* (5) Wetland), and then significant natural areas (Freeman Woodland, *a private corporation's* (5) Woodland, Kinokamau Lake Woodland).

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The Freeman Woodland was designated a significant natural area by GEOWEST. It is located west of 184th Street just north of Mooncrest Park. It is a mature mixed wood stand of roughly 23 hectares that provides habitat for deer and songbirds and a linking function to the Big Lake area.

A private corporation's (5) Woodland is also designated as a significant natural area. It is shown on Figure 1 as a green forested area at the north end of the ASP area. Some of this land has been cleared now for the *Rail Intermodal Yard*. This woodland is dominated by aspen and provides habitat for local wildlife, especially white-tailed deer. It provides a critical link for wildlife between the Transportation/Utility Corridor and the *private corporation's* (5) Wetlands. The *Rail Intermodal Yard* development was screened under the Canadian Environmental Assessment Act by the Canadian Transport Agency. Environment Canada was satisfied that replacement habitat was provided by *the rail line* off-site for any loss of trees. This replacement habitat was dedicated to a conservation group. Also, *the rail line* only took what was required for the yard and tracks, in its clearing, thereby minimizing tree loss.

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The *private corporation's* (5) comprises 2.71 hectares and is shown roughly on Figure 3 as the green bush area north of *a private corporation's* (5) warehouse along the rail line. This wetland is designated as a local environmentally sensitive area. It is a permanent wetland with a great diversity of vegetation. It "provides some of the best wildlife habitat for its size in Edmonton and area" (GEOWEST, 1993), and is one of only a few sites within Edmonton where black-

Amended by Editor

crowned night herons were observed. GEOWEST recommended that conservation measures be taken to preserve this site.

The Kinokamau Lake Woodland is located just west of Kinokamau Lake about midway along the lake and is shown as a forested area on Figure 1. This woodland has been designated a significant natural area by GEOWEST. It is a mature aspen-dominated stand, providing wildlife habitat, especially for white-tailed deer, and a critical linking function to other natural areas nearby and in the Big Lake area.

2.1.1 Kinokamau Lake

Kinokamau Lake has been identified as the most important wetland within Edmonton by Ducks Unlimited Canada, and as a regionally significant environmentally sensitive area (ESA) in the GEOWEST report to the City of Edmonton. City Policy C467 encourages voluntary conservation on developable lands and provides guidelines for developers of privately owned ESA lands for conserving such areas.

A significant portion of the bed and shore of Kinokamau Lake is owned by *a private corporation* (2). The remaining lands adjacent to the lake are owned by *a rail line*. *These two private corporations* jointly announced (May 1, 1998) a commitment to make available, under conservation easement, their deeded lands under and adjacent to Kinokamau Lake to Ducks Unlimited Canada (DUC). A Kinokamau Lake Management Committee will oversee the stewardship of this environmentally sensitive area. The committee will be comprised of *the two private corporations* and Ducks Unlimited. The committee will develop an Environmental Management Plan, manage the wetland habitat and the conservation easements.

Amended by Editor

The first step in the creation of an Environmental Management Plan is to compile good baseline information. The overall objective of existing baseline studies, done over a year long period of the Kinokamau Lake area, was to obtain a sense of the productivity of Kinokamau Lake and to use this information to assist in the development of a long term habitat enhancement, operation, and management plan of the wetland ecosystem. The baseline studies were of land use, hydrology, water quality, vegetation, benthics, small mammals, amphibians, and birds.

Significant findings from these baseline studies are summarized below:

- Kinokamau Lake has undergone significant changes over the past century, having shrunk significantly in size, gone dry and been farmed. It has recently stabilized around elevations of 678.0 m to 678.8 m above sea level.
- The lake has a good supply of protein rich benthics – food for breeding ducks that inhabit the lake during periods of open water.
- The lake does not contain any fish due to its shallow lake bottom.
- Ten vegetation ecosites were identified – seven are naturally occurring and three result from human activity. Three major wetland vegetation types are awned sedge, cattail – duckweed, and open water. Upland vegetation included cultivated areas, aspen woodlots, and willow-dwarf birch.
- Wood frogs and striped chorus frogs were the only two herptile species found in the vicinity of Kinokamau Lake. Their populations represent the largest and most vigorous in the City of Edmonton.
- Small mammals were detected that represent four species: red-backed vole, deer mouse, meadow vole, and dusky shrew.
- Water quality is below guidelines for chlorides, phosphorus, ammonia, and some metals (manganese, mercury, and cadmium). The lake is classified as eutrophic to hyper-eutrophic.
- 128 bird species were observed in 1998. Of these, 50 are confirmed breeders with another 32 as potential breeders. The species represented diverse bird groups with water birds, waterfowl, raptors, shorebirds, and songbirds being most common.
- Overall, the studies helped illustrate the inter-dependence of ecological components investigated and solidified the fact that land use on the upland was an important factor to the integrity of the wetland.

2.2 EXISTING LAND USE

Land use in the Area Structure Plan (ASP) area, as of October 12th, 1999 is illustrated in Figure 1. Land uses are generally heavy or medium industrial, and agricultural with the exception of Mooncrest Park, largely an acreage residential subdivision.

The area east of 170th Street is predominantly industrial. The Voyageur Industrial Park is largely given to medium industrial activities such as trucking and concrete manufacturing. The *private corporation's* (3) landfill site and *another corporation's cement plant* are heavy industries south of Voyageur Industrial Park. Just north of Yellowhead Trail and west of 170th Street are *a private corporation's* (2) clay extraction pits and an asphalt plant near Kinokamau Lake, as well as the *private corporation's* (27) warehouse. Most of the area around Kinokamau Lake and north of it, between 170th and 184th Streets, is used for agriculture or is vacant. At the north edge of the ASP area west of 170th Street, *a private corporation* (5) have a large warehouse and trucking operation. *The rail line* is constructing an Intermodal Yard, just east of 184th Street, which runs from the *rail* main line across Kinokamau Lake to the north edge of the ASP area.

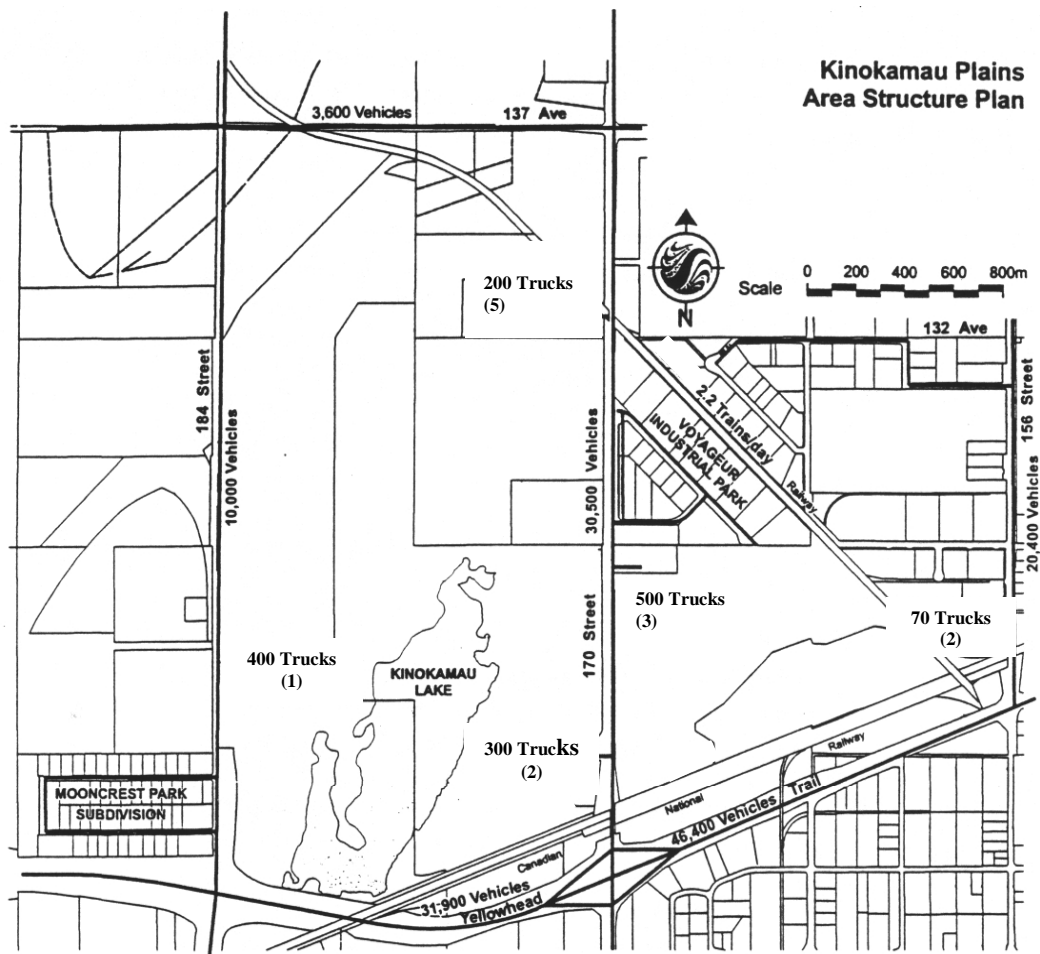
West of 184th Street and just north of Yellowhead Trail is the Mooncrest Park subdivision, made up of one and three acre lots, which are mostly residential or vacant, with the exception of a few trucking firms and a lawn ornament manufacturer and sales outlet. North of Mooncrest Park and west of 184th Street are wooded lands and agricultural land with three residences.

2.3 EXISTING TRANSPORTATION NETWORK

The major roadways around and through the Kinokamau Plains Area Structure Plan area are shown in Figure 2 and are as follows:

- Yellowhead Trail is a four lane divided expressway along the south edge of the area. The posted speed limit is 80 km/h and access to the roadway is restricted to major intersections such as 170th and 184th Streets.
- 170th Street is a five lane undivided arterial roadway with a posted speed limit of 70 km/h. There is an 8 metre wide gravel service road along the east side of 170th Street from 128A Avenue to 129th Avenue.
- The intersection of 170th Street with Yellowhead Trail is a diamond interchange with signals while the intersection at 128A Avenue is signalized. In addition, there are a number of other unsignalized accesses to other roads and businesses along the roadway.
- 184th Street is a two lane 8 metre wide arterial roadway with a posted speed limit of 70 km/h. The intersection of 184th Street with Yellowhead Trail is

Figure 2 – Existing Traffic Volumes
(Bylaw 12376, August 22, 2000)



LEGEND:

400 Trucks Two-Way Daily Traffic Volume 1999/2000
46,400 Vehicles Two-Way Daily Traffic Volume (AADT) 1998

NOTE:

Shown here are:

- Traffic volumes per day, including traffic both ways, on major roadways
- Number of truck trips (in and out) of major industries
- Number of trains

EDITOR'S NOTE: The numbers on this map and in the text of this document correspond to the reference numbers in Table 1 - Land Ownership in Kinokamau Plains Area Structure Plan.

Figure 2
Existing Traffic Volumes

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- signalized. There are a number of field and residential access points along the roadway including access to the *Rail Intermodal Yard*.
- The roadways in Mooncrest Park (121st Avenue, 122nd Avenue, and 190th Street) have a 7 metre wide rural cross-section.
- The roadways in the Voyageur Industrial Park (128A Avenue and 129th Avenue) have a 7 to 9 metre wide rural cross-section.

Amended by Editor

Currently the roadways in the Area Structure Plan area are rural cross-sections which mean they have no curbs, gutters, or sidewalks, and stormwater drainage is through open ditches.

Existing daily and AM Peak Hour traffic volumes are illustrated in Figure 2. These two-way vehicle counts have been supplied by the City of Edmonton. Daily truck trip generation information has been provided by major traffic generators in the area.

Edmonton Transit presently provides no service to the ASP area. Edmonton Transit does however provide a single trip service along 118th Avenue during the AM and PM Peak Hours to a *plant* just west of 184th Street and south of Yellowhead Trail. Edmonton Transit provides no service along 170th Street, but St. Albert Transit does and is expected to continue this service.

Amended by Editor

2.4 EXISTING SERVICES

2.4. Emergency Services

IPS Consulting met with a representative of the City Emergency Response Department to determine existing emergency services for Kinokamau Plains. No emergency service infrastructure is located within the plan area.

The primary fire response travels via 170th or 184th Street from one of the following three firehalls:

- #23 at 178 Street and 102 Avenue
- #8 at Yellowhead Trail and 127th Street
- #17 Castle Downs at 15505 Castle Downs Road

Ambulance and police service are roving but Yellowhead Trail and 170th and 184th Streets provide good access to the area.

2.4.2 Existing Water Service

Existing and future water services are shown in Figure 9. Potable water and some fire protection service is currently supplied to *three private corporations (3, 5, 27) and the Voyageur Industrial Park* from a 450 mm diameter main that is buried beneath 170th Street. *A private owner's (10) property* (see Figure 1) has received approval to connect to this line. This water is supplied from the North Jasper Place Reservoir. The A private corporation property is supplied with potable water from 156th Street and industrial water from its own on-site stormwater pond.

Amended by Editor

The balance of the area between 170th and 184th Streets is not currently serviced with piped water. *The rail line* intends to provide on-site water services and does not require piped City water.

Amended by Editor

Residents west of 184th, including those in Mooncrest Park supply their own water through wells or by trucking in water to cisterns.

2.4.3 Existing Sanitary Sewage Service

Existing and future sanitary sewer systems are shown in Figure 11.

The *private corporation (2)* discharges its sanitary sewage to an existing sewer along 156th Street. The Voyageur Industrial Park, *two other private corporations (3, 5)*, and the *private owner's (10)* lands are connected to a gravity sewer system that discharges into a new lift station in Voyageur Industrial Park. This lift station, in turn, discharges through a force main to a trunk sewer main on 156th Street. This system was financed by a local improvement bylaw.

Amended by Editor

The balance of the area is not currently serviced with city sewers. *The rail line* intends to either provide on-site sewage disposal or provide on-site holding tanks and transport the sewage off-site with vacuum trucks.

Amended by Editor

Residents west of 184th Street, including those in Mooncrest Park, provide their own sanitary sewer services. These services are provided on-site either via on-site sewage disposal systems or trucked off-site from sewage holding tanks.

3.0 Land Ownership

Existing land ownership is shown on Figure 1. *The rail line and cement plant [owned by a private corporation (2)]* are the major landowners with 195 Hectares (29.1 % of the ASP area) and 162 Hectares (24.2 % of the ASP area) respectively. The remaining larger parcels of land that are developed are owned by *two other private corporations (3, 5)*. The other larger parcels are currently agricultural, vacant, or forested and are owned by individuals, or groups of individuals, looking to sell or develop their land. Small land holdings existing in Mooncrest Park west of 184 Street, north of Mooncrest, or in Voyageur Industrial Park with the exception of a *private corporation (27)* west of 170th Street.

Amended by Editor

See Table 1 provides the details of land ownership.

Table 1*
Land Ownership in Kinokamau Plains Area Structure Plan
(September 1999)

Reference #	Property Owner(s)	Hectares	% of total ASP area
<u>Larger Holdings (greater than 9 Ha)</u>			
1	<i>Private Corporation (Rail Line)</i>	194.63	29.1
2	<i>Private Corporation (Cement Plant)</i>	161.96	24.2
3	<i>Private Corporation (Landfill Site)</i>	64.47	9.6
4	<i>Private Corporations</i>	52.91	7.9
5	<i>Private Corporation (Food Warehousing/Distribution)</i>	25.96	3.8
6	<i>Alberta Transportation and Infrastructure</i>	17.93	2.7
7	<i>Private Owners</i>	16.18	2.4
8	<i>Private Owner</i>	14.98	2.2
9	<i>Private Corporations</i>	13.21	1.8
10	<i>Private Corporation</i>	9.45	1.4
<u>Smaller Holdings (less than 10 Ha)</u>			
11	<i>Private Corporation</i>	4.04	.6
12	<i>Private Corporation</i>	2.84	.5
13	<i>Private Corporation</i>	0.404	-
14	<i>Private Corporation</i>	0.546	-
15	<i>Private Owners</i>	0.807	-
16	<i>Private Owners</i>	0.404	-
17	<i>Private Owners</i>	0.405	-
18	<i>Private Corporation</i>	0.547	-
19	<i>Private Owners</i>	1.21	.2
20	<i>Private Corporation</i>	2.05	.3
21	<i>Private Owner</i>	0.404	-
22	<i>Private Corporation</i>	1.27	.2
23	<i>Private Owners</i>	0.808	-
24	<i>Private Owners</i>	0.432	-

Reference #	Property Owner(s)	Hectares	% of total ASP area
25	<i>Private Owner</i>	0.405	-
26	<i>Private Owners</i>	0.404	-
27	<i>Private Corporation (Food Warehousing/Distribution)</i>	3.33	.5
28	<i>Private Owners</i>	0.502	-
29	<i>Private Owner</i>	0.403	-
30	<i>Private Owners</i>	0.809	-
31	<i>Private Corporation</i>	0.028	-
32	<i>Private Owners</i>	0.356	-
33	<i>Private Corporation (Clay Resource Extraction)</i>	4.50	.7
34	<i>Private Owners</i>	0.404	-
35	<i>Private Owner</i>	0.391	-
36	<i>Private Owner</i>	0.716	-
37	<i>Private Owner</i>	0.391	-
38	<i>Private Owners</i>	0.405	-
39	<i>Private Owners</i>	1.22	.7
40	<i>Private Owner</i>	0.405	-
41	<i>Private Corporation</i>	0.917	-
42	<i>Private Owners</i>	0.405	-
43	<i>Private Owners</i>	1.22	.2
44	<i>Private Corporation</i>	5.05	.8
45	<i>Private Corporation</i>	1.01	.2
46	<i>Private Owners</i>	0.404	-
47	<i>Private Owners</i>	0.809	-
48	<i>Private Corporation</i>	2.77	.4
49	<i>Private Owner</i>	1.21	.2
50	<i>Private Owners</i>	0.405	-
51	<i>Private Owners</i>	0.836	-
52	<i>Private Owners</i>	1.21	.2
53	<i>Private Owner</i>	0.405	-
54	<i>Private Owner</i>	0.405	-
55	<i>Private Corporation</i>	2.57	.4
56	<i>Private Owner</i>	0.404	-
57	<i>Private Owner</i>	0.404	-
58	<i>Private Owners</i>	1.22	.2
59	<i>Private Owners</i>	0.404	-
60	<i>Private Owners</i>	1.21	.2
61	<i>Private Owners</i>	0.808	-
62	<i>Private Corporation</i>	0.546	-
63	<i>Private Corporation</i>	0.405	-
64	<i>Private Owners</i>	0.405	-
65	<i>Private Owners</i>	0.405	-
66	<i>Private Owner</i>	0.356	-
67	<i>Private Corporation</i>	2.02	.3
68	<i>Private Owner</i>	0.810	-
69	<i>Private Owner</i>	0.405	-
70	<i>Private Owners</i>	0.404	-
71	<i>The City of Edmonton</i>	3.93	.6
72	<i>Parkland County No. 31</i>	0.201	-
73	<i>Private Owners</i>	0.810	-
74	<i>Private Corporation</i>	0.547	-
75	<i>Private Corporation</i>	4.27	.7

*Amended by Editor

Total Areas:

(Approximate only)

▪ Lands in Certificates of Titles:	623.8 Hectares
▪ Lands in Public Access Corridors:	<u>25.2 Hectares</u>
Total Subject Area:	667.53 Hectares

In terms of the requirement of the City of Edmonton that at least fifty percent of landowners support an Area Structure Plan, this ASP has well above that level of support. *The private corporation (2) and rail line*, which together own 57 percent of the ASP land, have expressed their support for the Area Structure Plan. Most of the other larger landowners have also expressed their support of the ASP elements presented to them in our meetings with them and at the Open House.

Amended by Editor

4.0 Development Concept

The future land use concept depicted in Figure 3 was created to achieve the ASP objectives as set out in Section 1.3. The existing land use shown in Figure 1 shows that this area is already partially developed and serviced. This is not the kind of area for which an Area Structure Plan is typically created in which land is predominantly agricultural at the edge of urban development. Rather, the Kinokamau Plains area already contains an industrial subdivision (Voyageur Park), a residential/light industrial subdivision (Mooncrest Park), a landfill [*private corporation (3)*], a cement plant [*private corporation (2)*], major food warehousing/distribution [*two private corporations (5, 27)*], and clay resource extraction [*two private corporations (33, 2)*].

Amended by Editor

The rail line's new Intermodal Yard is under construction east of 184th Street. This major transportation facility will likely accelerate business and employment development in west Edmonton. This development could take several forms:

Amended by Editor

- businesses that serve the Intermodal Yard itself (e.g. trucking firms)
- businesses that rely upon products/merchandise flowing into Edmonton via the Intermodal Yard for warehousing and distribution (e.g. automotive parts)
- businesses that add value through the manufacturing process which either rely upon the Intermodal Yard for input materials, outputted products, or both (e.g. machinery assembly plants).

4.1 OVERALL CONCEPT

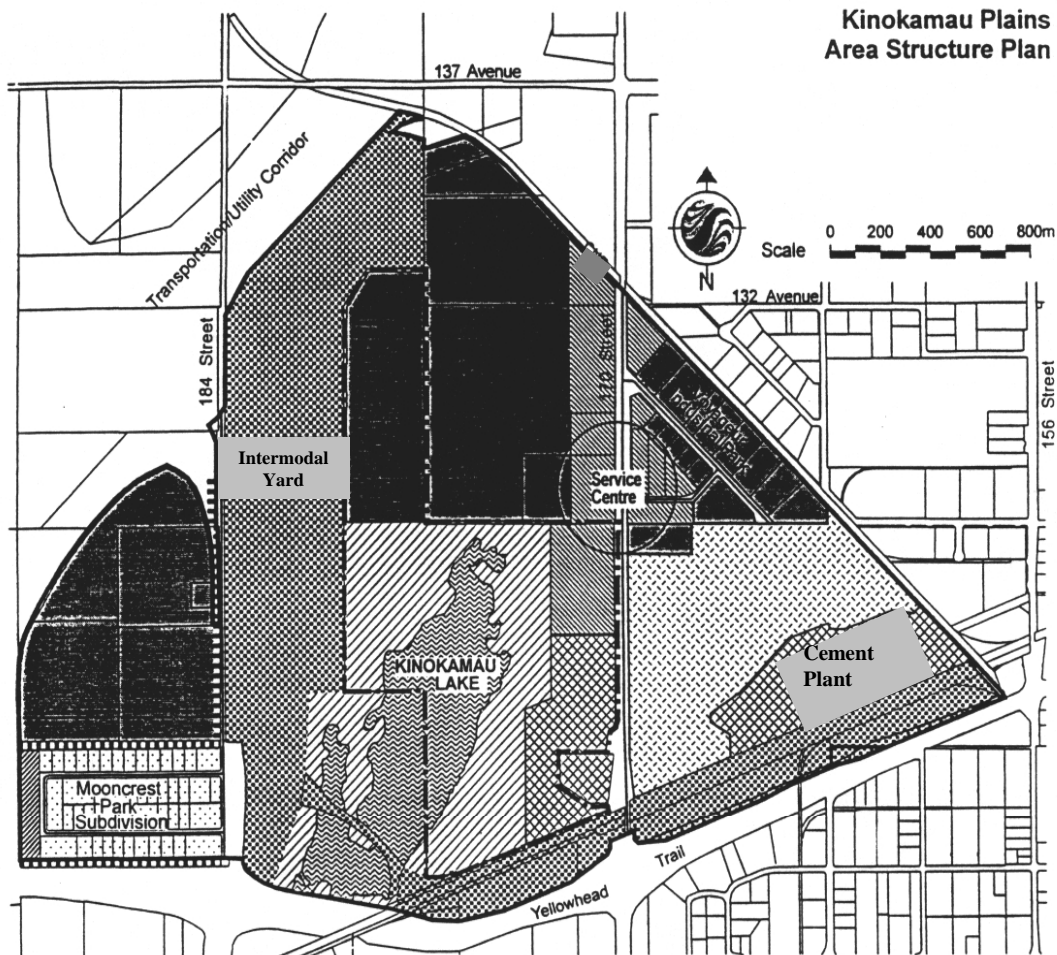
The overall concept for development of Kinokamau Plains is one that acknowledges existing land uses, interim land uses, emerging urban land uses, and the environmentally sensitive Kinokamau Lake.

Land uses and services will be focused on 170th and 184th Streets. The *private corporation (2)* which will continue to be accessed from 156th Street. Only the existing *rail line* Bissell Yard will front onto Yellowhead Trail.

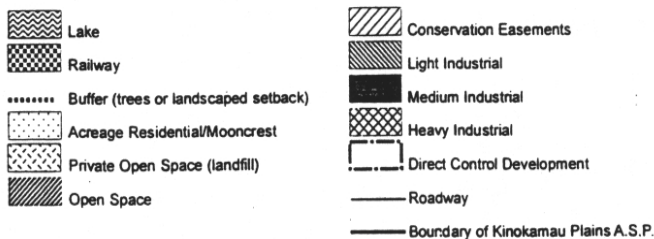
Amended by Editor

The land use pattern on 170th Street consists largely of medium industrial development north of 128A Avenue and a mixture of light industrial/commercial, parks and recreation, and heavy industrial south of 128A Avenue. A Kinokamau Plains service centre surrounds the intersection of 128A Avenue and 170th Street.

Figure 2 – Existing Traffic Volumes
(Bylaw 12376, August 22, 2000)



LEGEND:



NOTE:

The Service Centre would provide services (eg. office, food, convenience stores) to employees of nearby industries

EDITOR'S NOTE: The numbers on this map and in the text of this document correspond to the reference numbers in Table 1 - Land Ownership in Kinokamau Plains Area Structure Plan.

110264300Report\Figure_3.cdr July 2000

*Amended by Editor

Figure 3
Future Land Use (in 30 years)

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This intersection is already serviced with water and sewer and enjoys access to both a local market and regional market as reflected by the existing high traffic volumes on this five lane arterial (170th Street).

The land use pattern fronting 184th Street is dominated by the *Rail Intermodal Yard* along the entire eastern edge of 184th Street within the ASP area. The acreage residential - mixed use subdivision of Mooncrest Park is located on the northwest corner of the 184th Street/Yellowhead Trail intersection. Large undeveloped parcels of land currently make up the balance of land west of 184th Street. This land is highly suited for the development of medium industrial uses which serve the Intermodal Yard across the street.

Amended by Editor

All of the land within the conservation area surrounding Kinokamau Lake will be developed into enhanced upland areas following clay extraction. These enhanced upland areas will be reclaimed back to their original elevations and vegetated into types which support the wildlife that frequent the lake. A 50 metre setback from the normal high water line of the lake will be maintained as per the license from the approving authority. The lake, the 50 metre setback, and upland area will be managed by Ducks Unlimited Canada under a conservation easement. Both *the private corporation (2)* and *rail line* will retain ownership to the bed and shore of the lake and the uplands. The *private corporation's (2)* existing asphalt plant will be phased out in the next five years.

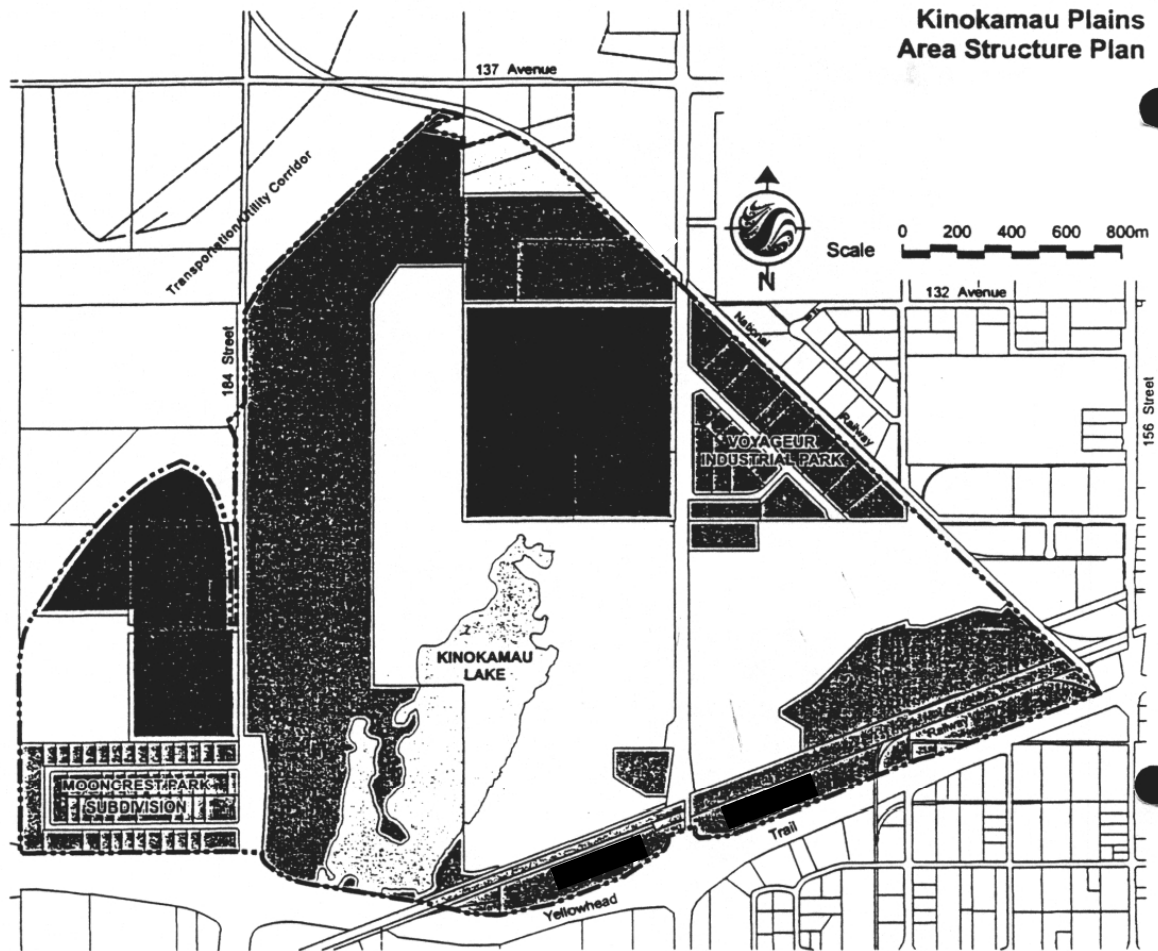
Amended by Editor

4.2 STAGING






The stages of development are shown in Figure 4. Stage 1 reflects existing development and includes the *Rail Intermodal Yard* currently under construction. Stage 2 lands are those which will likely develop in the near term and more or less reflect lands within the two proposed medium industrial areas. Stage 3 lands are those that will develop over the longer term. They are presently undergoing interim land use changes (i.e. landfill and clay extraction). The Kinokamau Lake conservation area will be revegetated to upland habitat and the balance of Stage 3 lands will be converted to long-term, urban land uses upon reclamation.

Amended by Editor

Figure 4 – Stages of Development
(Bylaw 12376, August 22, 2000)



LEGEND:

	Stage 1 Development		Lake
	Stage 2 Development		Area Structure Plan Boundary
	Stage 3 Development		

EDITOR'S NOTE: The numbers on this map and in the text of this document correspond to the Reference Numbers in Table 1 - Land Ownership in Kinokamau Plains Area Structure Plan.

Figure 4
Stages of Development

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*Amended by Editor

4.3 INDUSTRIAL AREAS

4.3.1 Light Industrial/Service Center

A service centre for Kinokamau Plains is proposed at 170th Street and 128A Avenue. Suggested light industrial uses could include some limited commercial uses such as restaurants, service stations, offices, and office supplies stores which are allowed under the City of Edmonton *Zoning Bylaw*. The land in the vicinity of this intersection is already serviced with water and sewer and is located on the busiest arterial roadway in the ASP area. This light industrial area extends from the 128A Avenue intersection north to the rail line for all properties that front onto 170 Street.

Amended by Editor

4.3.2 Medium Industrial

Other than the existing Voyageur Industrial Park, two new medium industrial areas are proposed: (1) south of the *rail line*, west of 170th Street and (2) on 184th Street, north of Mooncrest Park. Developments in these two areas are expected to consist of relatively large parcel sizes or even large single industrial entities, possibly with direct ties to the Intermodal Yard. Should smaller lots be developed, then the cost of servicing may be an important factor in determining lot sizes. A buffer in the form of additional landscaped setback (to a max. of 6 m) from 184 Street will be required for those sites that will front onto 184 Street.

Amended by Editor

4.3.3 Heavy Industrial

The existing heavy industrial areas are significantly reduced under the Kinokamau Plains Area Structure Plan. The existing landfill will eventually be reclaimed to a park, the heavy industrial uses west of 170th Street will be removed from the lakeshore, and the existing 170th Street clay pit will be filled with clean, surplus clay materials from site preparation activities at the Intermodal Yard.

A heavy industrial consolidation area is proposed along the southern portion of 170th Street across from the existing landfill. This is a long term development area to consolidate some of *the private corporation's (1)* Edmonton area operations at one location. Regional offices associated with the *private corporation's (1)* operations throughout Western Canada could be located towards 128A Avenue.

Amended by Editor

4.3.4 Direct Control Development

To ensure appropriate land use context for the land owned by *the private corporation (1)* and with regards to the clay extraction license and the conservation easement, a Direct Control District has been developed. The intent of the Direct Control District is to establish appropriate land uses fronting the west side of 170 Street, east of the *rail intermodal yard*, the proximity of Kinokamau Lake, and the preservation and maintenance of the lake. All sub areas in the direct control districts will have appropriate development criteria to ensure that develop[ment in each area complies with the vision addressed in the ASP. The direct control zoning around Kinokamau Lake will contain a strict set of Development Criteria including a 50 meter development setback, establish water levels for the lake, and method to ensure a clean supply of water for the lake.

Amended by Editor

Although clay extraction and industrial development will occur in the interim upon the uplands, the regulations in conjunction with the license and the conservation easement will ensure that the uplands are developed as a natural wildlife habitat in the long term. For the area fronting 170 Street, appropriate berming and landscaping is required to screen the site from the travelling public.

4.4 MOONCREST PARK

Mooncrest Park subdivision was developed under *Parkland County's* jurisdiction as an acreage subdivision that resulted in light commercial and industrial businesses to occur on the same lot as a residence. When annexed by the City of Edmonton in 1982, the existing Parkland County zoning of industrial/commercial was continued by the City. When properly enforced, the *IC Zone* proved unworkable for a majority of Mooncrest Park property owners and five *DC2 Provisions* were approved in 1994. This allowed for a mix of acreage residential with major home occupations and light industrial/commercial development.

Amended by Editor

The future land use map (Figure 3) recognizes this land use pattern for Mooncrest but also calls for the establishment of buffers surrounding the community to provide a transition between the Mooncrest Park area and Yellowhead Trail, and the future industrial development to the north.

The details of the buffer will be established as subdivision of the area, north of Mooncrest Park occurs. The buffer will be designed to provide an appropriate setback of industrial uses from the residential uses.

4.5 PRESERVING THE ENVIRONMENT

This Area Structure Plan includes provisions for conserving the productive habitat around Kinokamau Lake - the largest and most important remaining wetland within Edmonton. This area is especially important because of the biological diversity present, and because so many wetlands are lost each year to development. This is why *the private corporation (2)* is foregoing a fifteen year supply of clay to preserve the lake and *the rail line* is building its Intermodal Yard as far west as possible on its site.

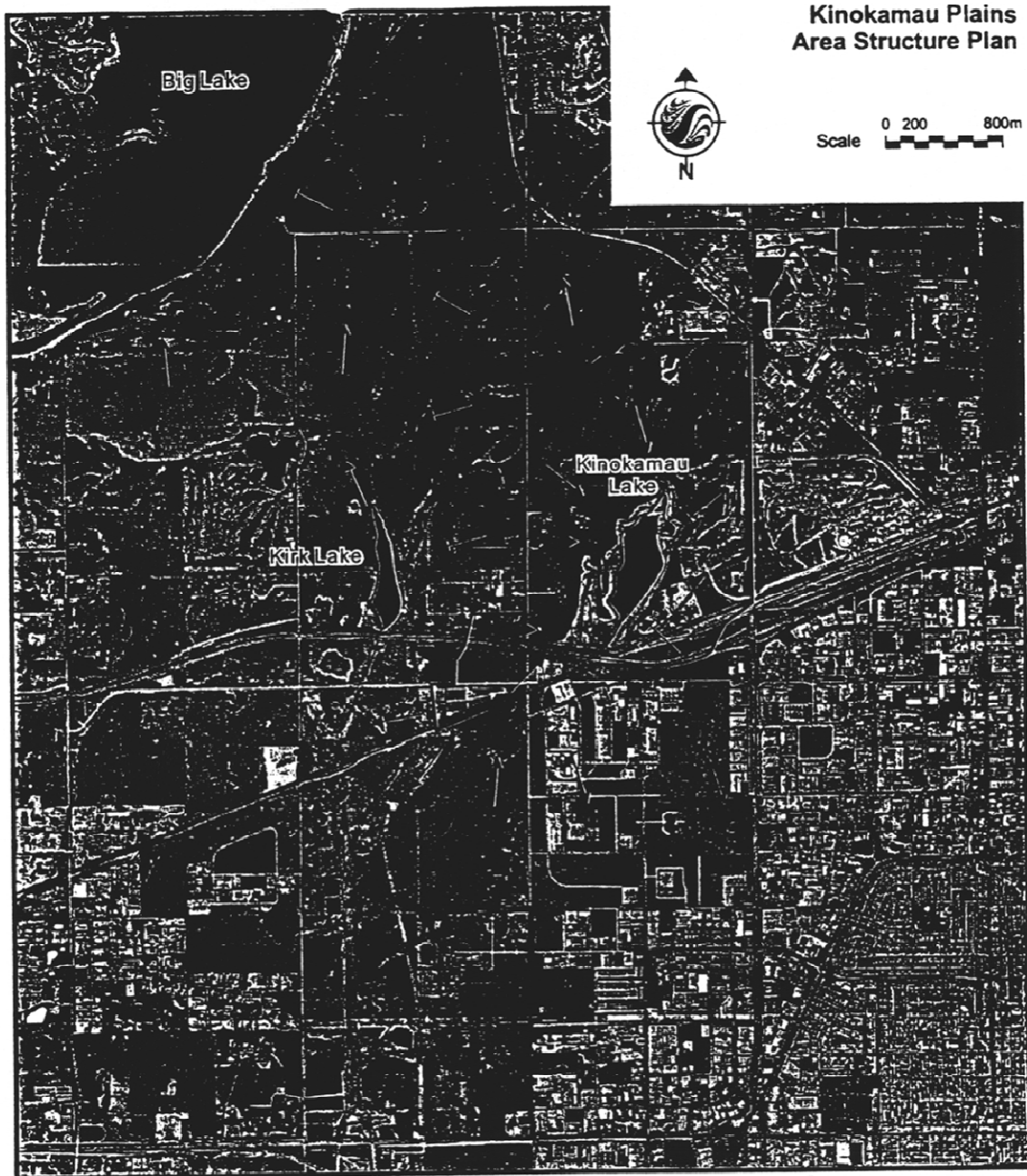
Amended by Editor

Steps that will be taken to conserve Kinokamau Lake include:

- No clay extraction/development within at least 50 metres of the normal high water line as per the resource extraction license from Alberta Environment.
- Stormwater drainage will be passed through treatment ponds before flowing into the lake.
- The area around the lake shall be reclaimed and maintained as upland habitat to complement the wetland.
- Ducks Unlimited Canada will steward the lake and upland habitat area as per the conservation easements between Ducks Unlimited and *the rail line* and *a private corporation (2)*.
- Previously completed environmental baseline studies will be used to guide an environmental management plan.
- Development and subdivision applications in, and adjacent to, the Kinokamau Lake watershed, (see Figure 5) will be referred to the Kinokamau Lake Management Committee by the City for comments prior to consideration for approval.

Amended by Editor

Figure 5 – Kinokamau Lake Drainage Basin
(Bylaw 12376, August 22, 2000)



Legend
 — K-Lake Watershed Boundary
 → General Drainage Direction

Scale: 1:40,000



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Figure 5
Kinokamau Lake Drainage Basin

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*Amended by Editor

The Kinokamau Lake Woodland, described in Section 2.1, will be maintained as upland wildlife habitat, until comparable woodland habitat is developed in the conservation area (about 20 years).

To ensure that development has no adverse effect on the water quality or the wildlife and vegetation of the Kinokamau Lake conservation area, the City of Edmonton Planning and Development Department will circulate Development Permit and subdivision applications to the Kinokamau Lake Management Committee for comments based on the environmental principles presented below. The Kinokamau Lake Management Committee will be made up of representatives of *the rail line, a private corporation (2)*, and Ducks Unlimited Canada. They will provide advice to the Planning and Development Department as warranted.

Amended by Editor

4.5.1 Environmental Principles for Kinokamau Lake

The following environmental principles apply to any development within the area covered by the Kinokamau Lake watershed, as well as any development within 1.0 kilometres of the Kinokamau Lake Drainage Basin (see Figure 5) which might impact upon stormwater flow to Kinokamau Lake. Development that may affect the environment in ways such as, but not restricted to, those described below will be referred to the Kinokamau Lake Management Committee for review and comment prior to consideration by the Planning and Development Department.

Water Quality and Quantity

Any development application that involves activities such as those listed below (but not restricted to those below) that might affect the quantity and/or quality of water in, or draining into, Kinokamau Lake.

- paving of a large area within the watershed of Kinokamau Lake
- construction of large buildings (large roofs)
- other construction that might affect the timing of flood peaks of water draining into Kinokamau Lake
- land reclamation

- redirecting water flows such that the amount of water draining into Kinokamau Lake changes
- any development that increases potential flow into Kinokamau Lake of toxic substances such as, but not restricted to, salt, oil, grease

Noise

Any development that might result in excessive noise and/or disturbance that could deter birds from using Kinokamau Lake.

Air-borne Particles

Any development that results in airborne substances falling on or passing over Kinokamau Lake.

Obstacles

Any development that results in obstacles to bird flight such as, but not restricted to, electrical or communication towers, tall buildings, or smoke stacks that could increase the risk of collision-related bird mortality.

4.5.2 Kinokamau Lake Management

Ducks Unlimited Canada has secured commitments from both *the private corporation (2)* and *rail line* to manage the Kinokamau Lake regional environmentally sensitive area via a conservation easement. This conservation easement includes the bed and shore of the lake as well as upland areas surrounding the lake (see Figure 6).

Amended by Editor

An upland habitat management program will be developed with *the private corporation (2)* and *rail line* to progressively reclaim land upon completion of a clay extraction pit and to enhance existing habitat on *rail lands* in the conservation easement areas.

Amended by Editor

Maintaining the levels of biodiversity identified during the Baseline Studies will require that diversity of habitats are available throughout the development period. Since habitats like aspen woodlots may require up to 20 years to develop, there is a need to plan and begin implementing these enhancements as soon as possible. Further, there may be an opportunity to revegetate former agricultural areas with

Figure 6 – Kinaukamau Lake Conservation Area
(Bylaw 12376, August 22, 2000)



Note:

The conservation area will include Kinokamau Lake and grassland/wooded upland areas as wildlife habitat. Eventually an interpretive centre could be built for the public.

Locations of rail lines for the CN Intermodal Yard are approximate.

Figure 6
Kinokamau Lake
Conservation Area

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*Amended by Editor

EDITOR'S NOTE: The numbers on this map and in the text of this document correspond to the reference numbers in Table 1 - Land Ownership in Kinokamau Plains Area Structure Plan.

native plant materials specifically designed for the species that inhabit these upland areas and the lake.

4.5.3 Stormwater Drainage Concept

Preserving the water quality of Kinokamau Lake and Kirk Lake is an important element of the Area Structure Plan. The stormwater management system intended to serve the Kinokamau Plains area envisions a combination of wetland wastewater treatment systems, stormwater treatment ponds, and natural lakes. This system generally conforms to the drainage study recently carried out by Associated Engineering Ltd. for the City of Edmonton¹. The proposed stormwater drainage concept is shown in Figure 7.

The developed area between 170th Street and *rail lands* will drain into Kinokamau Lake via two wetland wastewater treatment ponds in order to reduce the environmental impact of the proposed development on the Kinokamau Lake ecosystem. Stormwater drainage from the *Rail Intermodal yard* will be channelled into a stormwater treatment pond along 184th Street. Water from the pond will be treated in an oil/water separator before being pumped through an underground pipeline to the west area of Kinokamau Lake.

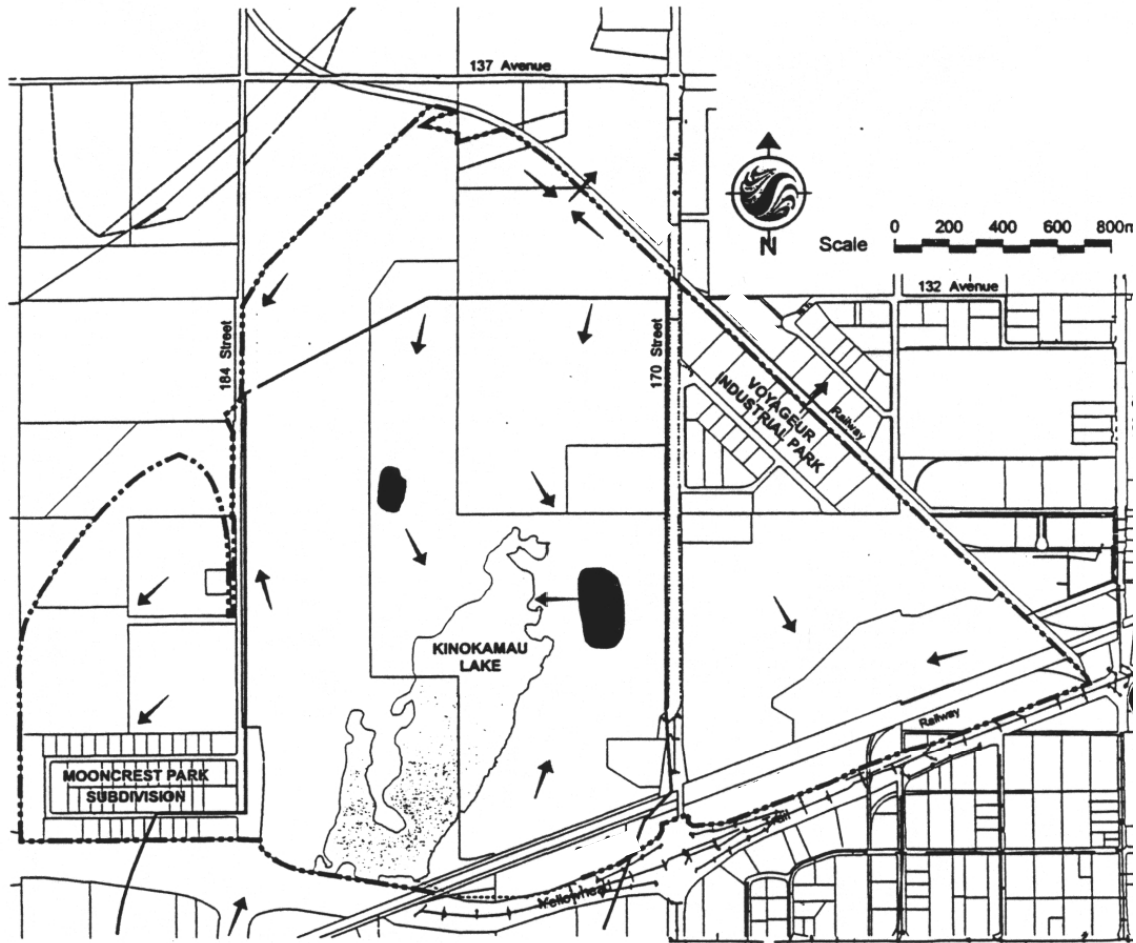
Amended by Editor

Kinokamau Lake will drain through a proposed 900 mm storm outfall into the existing 1050 mm storm sewer on Yellowhead Trail which is part of the Quesnell storm drainage system. Water levels in the lake will not be allowed to rise above 678.8 metres to prevent flooding. Ducks Unlimited Canada will work with the surrounding landowners and the City to try to maintain a water elevation of at least 678.0 metres during dry years. This will be done by retaining stormwater stored on-site. Only natural runoff will be used to top up the lake levels. The outflow from the lake will be controlled by a Real Time Control Structure so that discharge will take place when the downstream capacity is available.

As the area located west of 184th Street naturally drains into Kirk Lake, the runoff from this area, will also drain into this lake. To improve the water quality of storm runoff, a small wetland storm retention pond is suggested to be located upstream of the lake. Runoff from the developed area will then flow through this pond prior to entering Kirk Lake.

¹ *Kinokamau Lake Basin and 184th Street Interchange - Conceptual Drainage Report produced by Associated Engineering Ltd., 1999.*

Figure 7 – Future Stormwater Drainage Concept
(Bylaw 12376, August 22, 2000)



LEGEND:

- | | | |
|---------------------------|------------------------------|---|
| —●— Existing Storm Piping | ----- Proposed Storm Piping | Proposed Wetland Stormwater Treatment Ponds |
| - - - Existing Ditch | - - -●- - - Proposed Manhole | — Drainage Basin Boundary |
| ==== Existing Culvert | → Proposed Flow Direction | Stormwater Treatment Ponds |

Figure 7
Future Stormwater
Drainage Concept



110264300ReportFigure_7.cdr July 2000

IPS CONSULTING INC.

*Amended by Editor

These systems meet Alberta Environment guidelines for water quality, providing the detention time is at least 24 hours. Water quality should be tested before releasing water from retention ponds into Kinokamau Lake or Kirk Lake.

The actual sizes and locations of the Kirk Lake retention pond and the wetland wastewater treatment facilities are a function of detailed design to be undertaken at the time of subdivision of the area north of Mooncrest, in consultation with The City of Edmonton.

4.5.4 Freeman Woodland

“City Council passed the following motion on August 22, 2000 after the approval of Bylaw 12386;

Bylaw 12451
November 15, 2000

“That the Administration prepare for City Council and advertise an amendment which would require that an environmental study of the Freeman Woodland, be completed and assessed prior to any development in the area west of 184 Street and north of the Mooncrest Park Subdivision.”

Under Policy C-467, Conservation of Natural Sites in Edmonton’s Table Lands, the City will encourage the conservation and integration of as many environmentally sensitive and significant natural areas into Edmonton’s future urban environment as are sustainable and feasible. The identification of environmentally sensitive areas and significant natural areas has no legal implications for respective owners and with the exception of the information requirements, participation in the policy is voluntary.

Specifically, the developer(s) of the land known as the Freeman Woodland will be required, at the time of their first application for a Development Proposal or Strategy (as defined in Policy C-467), to comply with Policy C-467. A copy of a map showing the Freeman Woodland is contained in Appendix. “C”.

4.6 FUTURE TRANSPORTATION NETWORK

4.6.1 Future Road Network

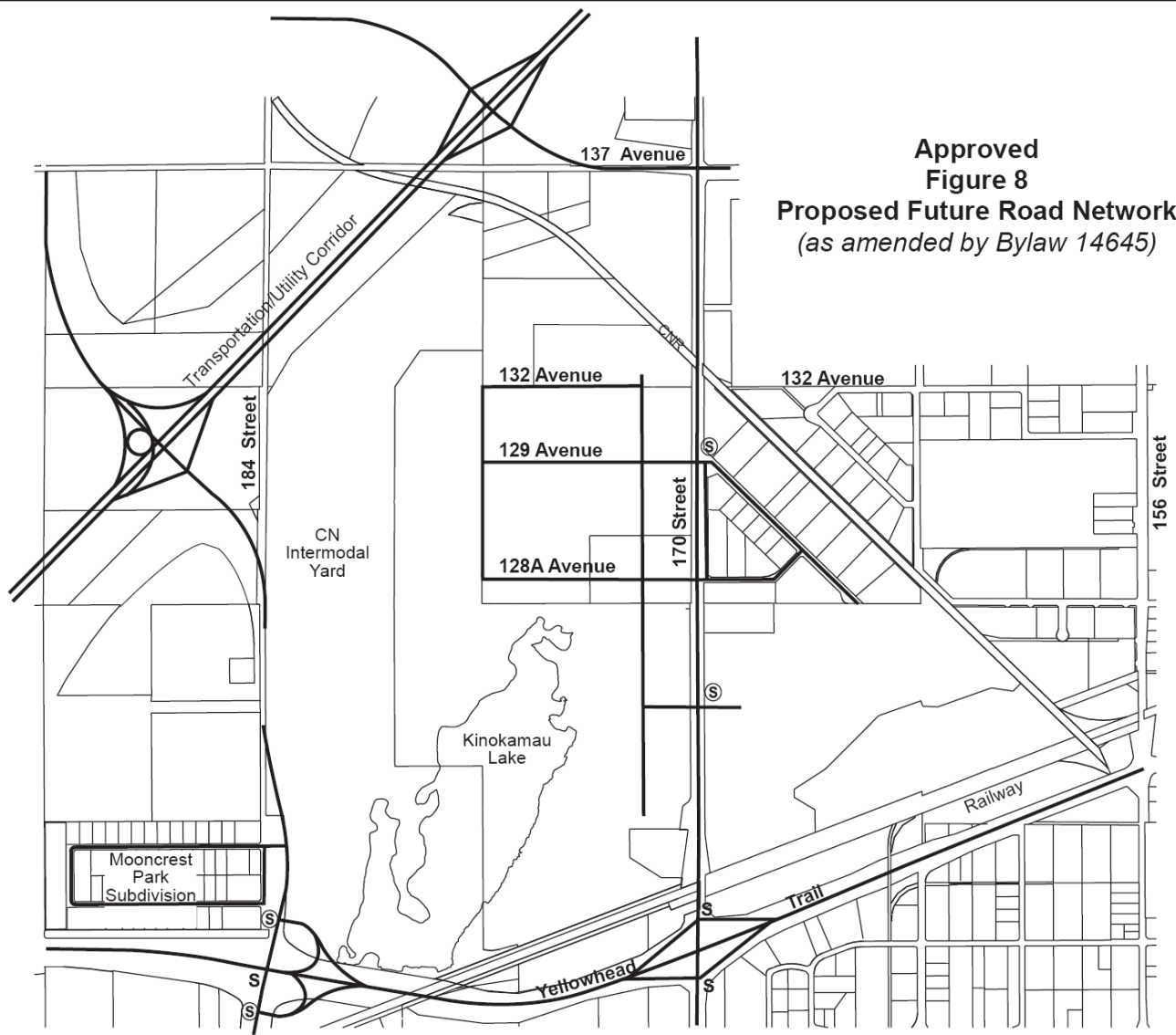
Amended by
Bylaw 14645

The two main roadways serving Kinokamau Plains are 184th and 170th Streets and several changes are planned. These are shown on Figure 8.

The City of Edmonton plans on building a grade separated interchange at 184th Street and Yellowhead Trail within the next five years. This would also entail moving 184th Street to the east, north of Yellowhead Trail and upgrading it to a four lane divided road to approximately 500 metres north of 127th Avenue.

The only future access to Mooncrest Park would be a single unsignalized entrance at 122nd Avenue.

**Approved
Figure 8
Proposed Future Road Network
(as amended by Bylaw 14645)**



Legend

- Future Road Network
- Ⓢ Possible Future Traffic Signal
- S Existing Traffic Signal

Note:

Roads and signal lights may be improved or developed as the areas develop over time.

- Roads west of 170 Street will be built to serve the industries there as they are built
- 170 Street ultimately widened from 5 to 6 lanes
- An underpass or overpass may ultimately be warranted for consideration at the 170 Street rail crossing
- 184 Street widened to 4 lanes

Location of internal road networks west of 170 and 184 Streets are conceptual only - details will be determined at time of subdivision.

*Amended by Editor

Eventually (beyond 20 years), it is expected that Anthony Henday Drive will be extended in a north easterly direction from Yellowhead Trail to 97th Street. In order to provide access to St. Albert, Anthony Henday Drive will likely be extended north to 184th Street within the next twenty years. When this occurs, 184th Street will be realigned to the northwest to cross the TUC and will be upgraded to a four lane divided arterial.

Also beyond the twenty year horizon, it is likely that 170th Street will require widening to six lanes to accommodate projected traffic volumes. The existing at-grade rail crossing at 170 Street north of the *private corporation's* (5) lands may warrant a grade- separation (underpass or overpass) in the long term. This would be based on standard transportation formulas that take rail and vehicle traffic volumes into account, as well as factoring in train speed and location of other grade-separated crossings. Daily train volumes on this rail line are expected to increase from 2.2 trains per day to 6 per day and ultimately to 10 to 11 per day.

Amended by Editor

Internal roadway systems can be developed as the lands in Stage 2 and 3 west of 184th and 170th Streets are developed into industrial or commercial uses. A proposed roadway network is shown on Figure 8. These alignments are only suggested to illustrate how these lands might be serviced. Exact alignments will be the subject of negotiations with the City at the time of subdivision. Signal lights at main intersections will allow for easier access onto 184th and 170th Streets as demand warrants. The two northernmost access roads to areas west of 170th Street are placed opposite existing roads or signals. The southernmost access road to areas west of 170th Street is proposed to be opposite the entrance to the park that will be built on the current landfill site.

4.6.2 Future Transit Service

Amended by
Bylaw 14645

Edmonton Transit envisages expanding service along 184th Street to north of Yellowhead Trail as development occurs in this part of Kinokamau Plains.

The likely service would consist of a loop to the west of 170th Street using the proposed 128A and 129th Avenues. Given the full-sized buses likely to

be used for providing this service, a major collector roadway standard would be required.

4.6.3 Accommodation for Pedestrians and Cyclists

Given the industrial and low density rural acreage nature of land uses in the ASP area, projected pedestrian and cyclist movements are expected to be minimal. The internal circulation roadways proposed will have a rural cross-section with 1.5 metre sidewalks. It is proposed that 1 metre wide shoulders be provided along all collector roadways to accommodate cyclists.

4.7 FUTURE WATER AND SANITARY SERVICING

Providing piped water and sanitary services to the presently undeveloped properties will be a challenge for this area. This is due to the fact that relatively small areas remain for development along both 170th Street and 184th Street and the existing subdivided and developed properties enjoy a mixture of both on-site services in the case of Mooncrest Park and recently installed off-site services in the case of Voyageur Industrial Park. Other factors, such as land uses with long frontages that do not require city water and sewer on both 170th Street (*landfill site*) and 184th Street (*rail line*), when combined with the existing servicing patterns, small areas, and Kinokamau Lake create an environment where conventional city water and sanitary services may be expensive. Other semi-urban or rural type servicing alternatives will to be investigated at the time of development.

Amended by Editor

4.7.1 Future Water Service

Water service could be provided to those areas not currently serviced in a variety of ways. Three options are presented below ranging from full City services to landowners providing their own on-site services. Cost and the need for full fire protection will likely be the major determinants of which option will be selected.

The full service Option 1 is presented in Figure 9. Lines can be constructed from the 170th Street transmission main line to provide potable water to developed areas west of 170th Street. A main line could also be constructed from the 170th Street transmission main line to service areas along 184th

Street with potable water. This main line could follow the alignment shown as Option A on Figure 9 along Yellowhead Trail, or could follow a more direct route, shown as Option B. During this interim period, water quantity and pressure would be insufficient for adequate fire protection. Where stormwater ponds become available on developed lands for drainage water quality purposes, pump systems could be installed on-site to provide water from these ponds in the case of a fire.

As the area develops, there may be enough water demand to warrant building a water reservoir along 184th Street. Water could then be pumped from the reservoir along the main line to service developments west of 170th Street as well as those along 184th Street. With the construction of a reservoir, full fire flows would be provided and the connections to the 170th Street transmission main line would no longer be necessary as a source of water. The size and location of the reservoir and the suggested water mains are a function of detailed design to be undertaken at the time of subdivision.

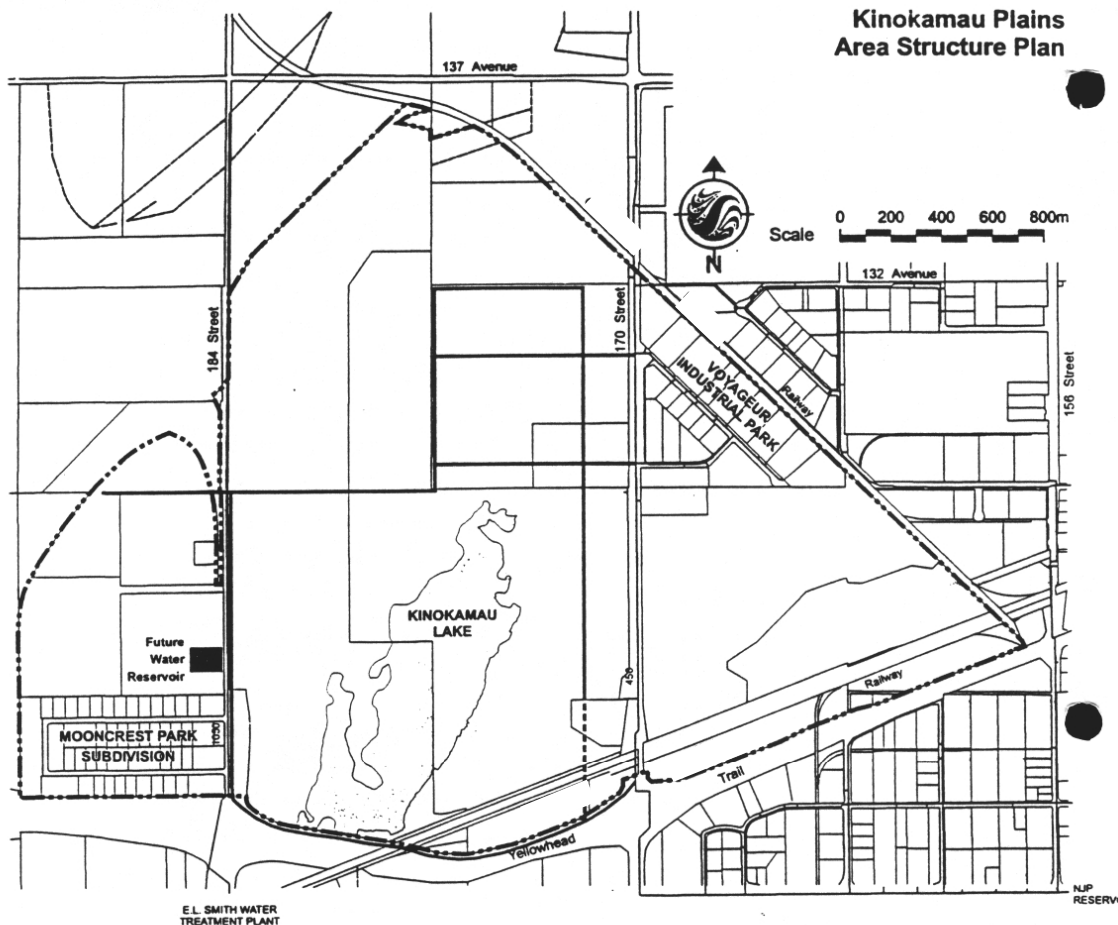
Option 2 (Figure 10) would provide water service with some fire flows. These fire flows would not meet requirements for high value properties and some landowners may need to provide supplemental on-site systems for fire protection. In this option, areas west of 170th Street could be serviced by lines constructed from the 170th Street transmission main line. Another line could be constructed along 184th Street to service areas along 184th Street. This line would connect to the main line along 184th Street at the Yellowhead Trail intersection.

Option 3 would be for landowners to provide their own on-site water servicing through means such as trucking water to cisterns, wells, and using bottled water for drinking.

4.7.2 Future Sanitary Service

The preferred long-term method of providing full urban sanitary sewer servicing to the Kinokamau Plains area is to discharge into the proposed West Edmonton Sanitary Trunk Sewer (WESS) located south of the Kinokamau Plains ASP area. Due to capacity limitations in the existing sewers south of the Yellowhead Trail,

Figure 9 – Existing and Future Water Services – Option 1
(Bylaw 12376, August 22, 2000)



LEGEND:

- Existing Water Main
- Future Water Main (Option A)
- Future Water Main (Option B)

NOTE:

- Low-pressure water lines now exist along 170 Street and 184 Street. The 184 Street line is suitable to supply a reservoir but not to service property directly.
- A water line could be constructed from 170 Street to service Stage 1 and 2 developments along 184 Street.
- The water line from 170 Street could be built along Yellowhead Trail (Option 1) or north of Kinokamau Lake (Option 2).
- As properties west of 170 Street develop in Stage 2 and 3, they could be serviced from water pumped from a water reservoir (serviced from 184 Street line)
- Locations of internal lines are conceptual only. Details will be determined at the time of development.

Figure 9
Existing and Future
Water Service - Option 1

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*Amended by Editor

Figure 10 – Existing and Future Water Services – Option2
(Bylaw 12376, August 22, 2000)

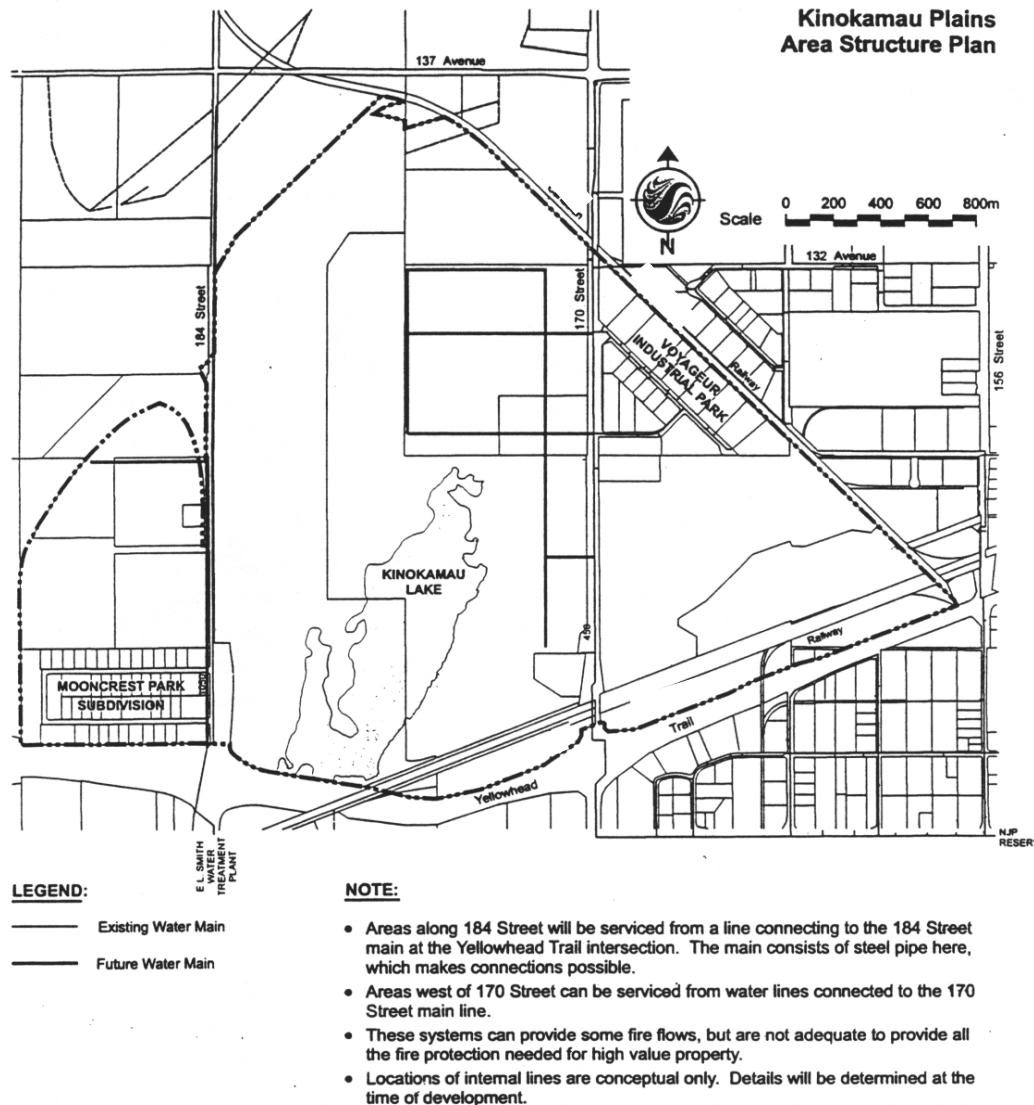


Figure 10
Existing and Future
Water Service - Option 2

IPS CONSULTING INC.

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*Amended by Editor

it is required to store all wet weather flows and discharge them when downstream capacity is available. The alignment of possible sanitary sewer systems are shown in Figure 11. The west sanitary sewer system can collect sewage from the areas along 184th Street (Mooncrest Park, future industrial areas west of 184th Street, and possibly the *Rail Intermodal Yard*) and can discharge some flow into the existing 300 mm sewer located at 184th Street and Yellowhead Trail as an interim measure.

The possible east (170th Street) sanitary sewer system can collect sewage from developed areas between 170th and 184th Streets that are not currently serviced. [A private corporation (5) and a private owner's (10) lands are currently serviced]. This system could discharge some flow into the existing 300 mm sewer located north of Yellowhead Trail and west of 170th Street as an interim measure. Each alignment will require a lift station and a storage tank as shown in Figure 11.

Amended by Editor

The ultimate sanitary sewer connections shown in Figure 11 could be developed to connect both the west and east systems to the West Edmonton Sanitary Trunk Sewer (WESS) which was proposed by the City of Edmonton Asset Management and Public Works Department in their Sanitary Servicing Strategy for the 21st Century report published in September, 1999.

The west and east sanitary sewer systems described above would both typically be servicing only one side of the major developed areas through which they will be built. This is because the area east of 170th Street is already serviced and the rail line currently plans to supply its own on-site sanitary sewage facilities east of 184th Street, unless the City can provide a competitive cost option for them.

Amended by Editor

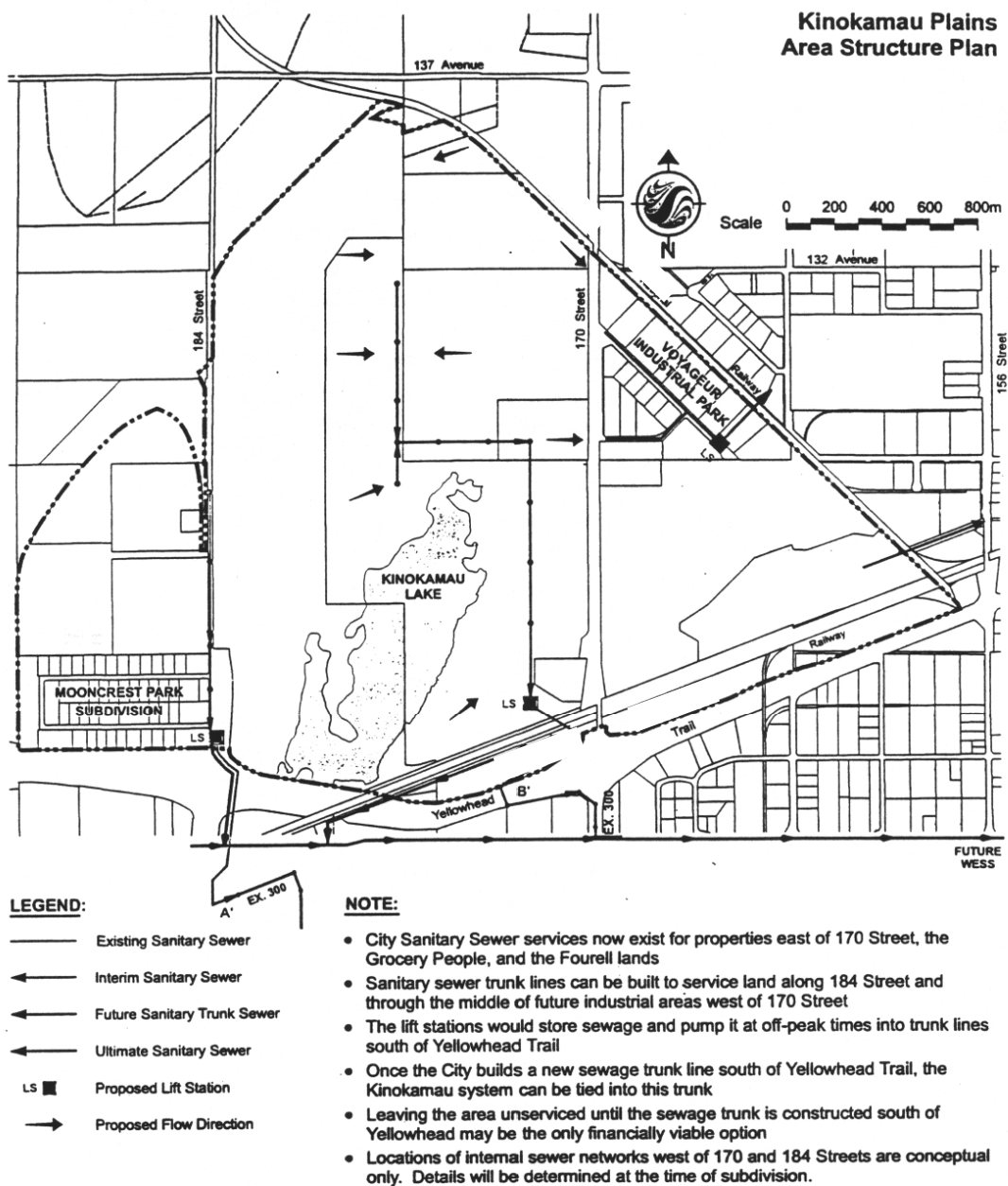
Thus it is possible that future sanitary sewage services may be provided on-site, through rural type septic fields or pump out tank systems or other approved private treatment and disposal methods, for lands that are currently undeveloped and unserved. Developments attracted to the area may therefore tend to be ones that would not need conventional City servicing.

4.8 IMPLEMENTATION

The Kinokamau Plains Area Structure Plan (ASP) provides a guideline for the future development of this area over the next 30 years. Once this ASP is adopted by City Council, individual property owners can come forward with *rezoning*

Amended by Editor

Figure 11 – Existing and Future Sanitary Sewer Concept
(Bylaw 12376, August 22, 2000)



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**Figure 11
Existing and Future
Sanitary Sewer Concept**

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*Amended by Editor

proposals which better describe intended uses than does the present industrial/commercial zoning inherited from the *Parkland County*.

Amended by Editor

Decisions with respect to the provision of water and sewer services in this area will in large part be driven by economics and the level of service required. Land use for the most part is relatively low intensity, thereby continuing to offer landowners a choice between semi-urban or on-site services.

Special considerations are required when it comes to stormwater and Kinokamau Lake and Kirk Lake. Kinokamau Lake will be operated as an environmental conservation area and not as a stormwater pond. Individual landowners will be required to control runoff discharge rates from their property as well as water quality. This can be achieved through the use of on-site stormwater/wetland ponds. Since Kinokamau Lake will be preserved as a wildlife habitat and managed by Ducks Unlimited Canada via a conservation easement, all development proposals, including subdivisions and development permits, within the Kinokamau Lake watershed (Figure 5) are required to be circulated by the City to the Kinokamau Lake Management Committee for review and comment. This includes establishing an overlay district in the *Zoning Bylaw* which will require a development permit for any site-grading and site-filling activities within the Kinokamau Lake drainage basin. In addition, any development within 1.0 km of the Kinokamau Lake drainage basin which might impact upon stormwater flow to Kinokamau Lake will also be referred to the Kinokamau Lake Management Committee for review and comment prior to approval by the City.

Amended by Editor

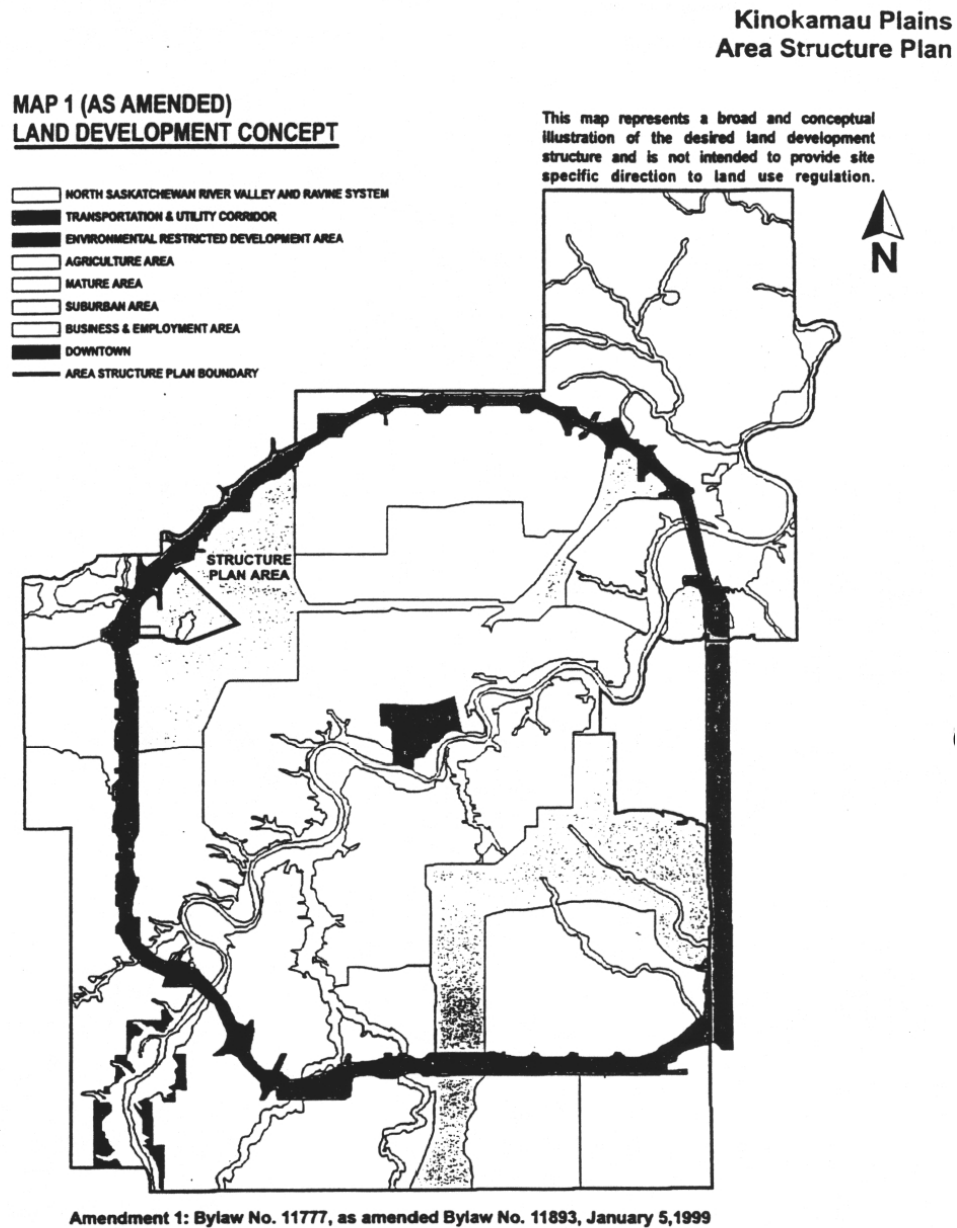
4.9 CONFORMANCE WITH STATUTORY PLANS

Under the City of Edmonton's Municipal Development Plan (Bylaw11777) approved by Council in August 1998 and known as Plan Edmonton, the Kinokamau Plains area (with the exception of Mooncrest Park residential suburban area) is designated as a Business and Employment Area on Map 1 - Land Development Concept. This Area Structure Plan conforms with that designation (see Figure 12).

Map 2 - Economic Activity Centres and Heavy Industrial Areas of Plan Edmonton shows part of the Area Structure Plan area [east of 170th Street including *two private corporations (1, 3)*, and the southeast section of the Voyageur Industrial park] designated as a Heavy Industrial Area. These Heavy Industrial Areas are designated to

Amended by Editor

Figure 12 – Urban Development Context – City of Edmonton’s Municipal Development Plan (Bylaw 12376, August 22, 2000)



ote:
This figure is from Edmonton's Municipal Development Plan.

**Figure 12
Urban Development Context:
City of Edmonton's Municipal
Development Plan**

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0264300\Report\Figure_12.cdr July 2000

"promote the development of existing and potential economic activity centres where locational advantages or existing facilities provide special opportunities for economic development in the knowledge-based economy of the twenty-first century."

The disclaimer on Map 2 states "This map represents a broad and conceptual illustration of the desired land development structure and is not intended to provide site specific direction to land use regulation."

In fact, *the private corporation (2)* has been extracting clay west of 170th Street since 1992 and has operated an asphalt plant on the east shore of Kinokamau Lake since 1990. Also *another private corporation (33)* has previously extracted clay west of 170th Street and north of *a private corporation's (5)* property adjacent to the *rail line* in the northernmost tip of the ASP area. *The private corporation (2)* will phase out the asphalt plant from the shores of Kinokamau Lake and to reclaim clay pits in the conservation area around the lake to suitably vegetated upland habitat.

Amended by Editor

In this Area Structure Plan portions of Plan Edmonton's Heavy Industrial Area in northwest Edmonton are designated as medium industrial, light industrial/commercial, and parkland. At the time Plan Edmonton was developed, the *Rail Intermodal Yard* was not envisaged for Kinokamau Plains. Medium industrial designations near the Intermodal Yard will allow for businesses which will be economically advantaged by being close to it, such as warehousing and trucking operations. The medium industrial developments will also benefit from light industrial/commercial activity nearby to service their needs. The future parkland is *landfill site* which is being redeveloped as a private park, the most appropriate use for a former landfill.

Amended by Editor

This Area Structure Plan conforms with, and supports the intent of Plan Edmonton. This can be seen in numerous sections of Plan Edmonton, for example, the Area Structure Plan supports economic activity as per: "1.1.5 Ensure an adequate supply of industrial land" (pg. 15). The Area Structure Plan also supports the priority

"Recognize the existence and potential of economic activity centres within the City and encourage these vibrant growth areas by fostering the mix of services and businesses which support and link them" (pg. 19).

1. Land use proposals within the Area Structure Plan conform with;
 - "1.3.3 Support contiguous development that is adjacent to existing development in order to accommodate growth in an orderly and economical fashion" (pg. 18).
2. The Area Structure Plan "encourages the conservation and integration of natural areas that are sustainable and feasible" (pg. 21) and conforms with;

"4.4.4 Consider environmental impact as a factor in the decision-making process for land, transportation and infrastructure development" (pg. 52).
3. Servicing strategies in the Area Structure Plan conform with;

"2.5.2 Develop strategies to address areas where Edmonton's cost of services or tax rates are not competitive" (pg. 31).
4. Transportation strategies in the Area Structure Plan conform with;

"4.3.2 Provide and maintain a transportation system which protects and enhances the Edmonton Capital Region's ability to keep and attract business ..." (pg. 51) .

Appendix A
Letter of Authorization for Area Structure Plan

September 29, 1999

Mr. Terry McDougall
IPS Consulting Inc.
14640 - 88 Avenue
Edmonton AB T5R 4J8

Dear Mr. McDougall:

Re: **Authorization to Prepare an Area Structure Plan for Kinokamau Plains**

In reply to your letter of August 18, 1999, it is Planning and Development Departments position that it is not necessary to receive City Council approval for the preparation of an Area Structure Plan prior to commencing with preparation of a new plan for the Kinokamau area.

At the September 15, 1992 meeting of Council the following motion was passed:

"That the Administration prepare an area concept plan with Mooncrest Park being dealt with as a neighbourhood within the concept Plan."

We believe this is sufficient mandate to proceed with the preparation of an Area Structure Plan for Kinokamau. The boundaries for such a plan would be defined as per the attached map.

It is important to remember that the Kinokamau Servicing Concept Design Brief plans were tabled indefinitely by City Council on May 16, 1994. At that time, council made the following additional motions:

- That any future servicing concept design briefs be done by private landowners in the area, and
- that any design briefs show residential uses as extending beyond the Mooncrest subdivision to provide for viable residential neighbourhoods keeping in mind the compatibility of residential and heavy industrial uses.

With regards to the timing as indicated in your letter, setting the timing for a bylaw to After the process is complete, Planning and Development Department will forward a report and bylaw to

council for consideration.

If you have any questions, please contact Mark Garrett at 496-6090 or Don Read at 496-6226.

Sincerely,

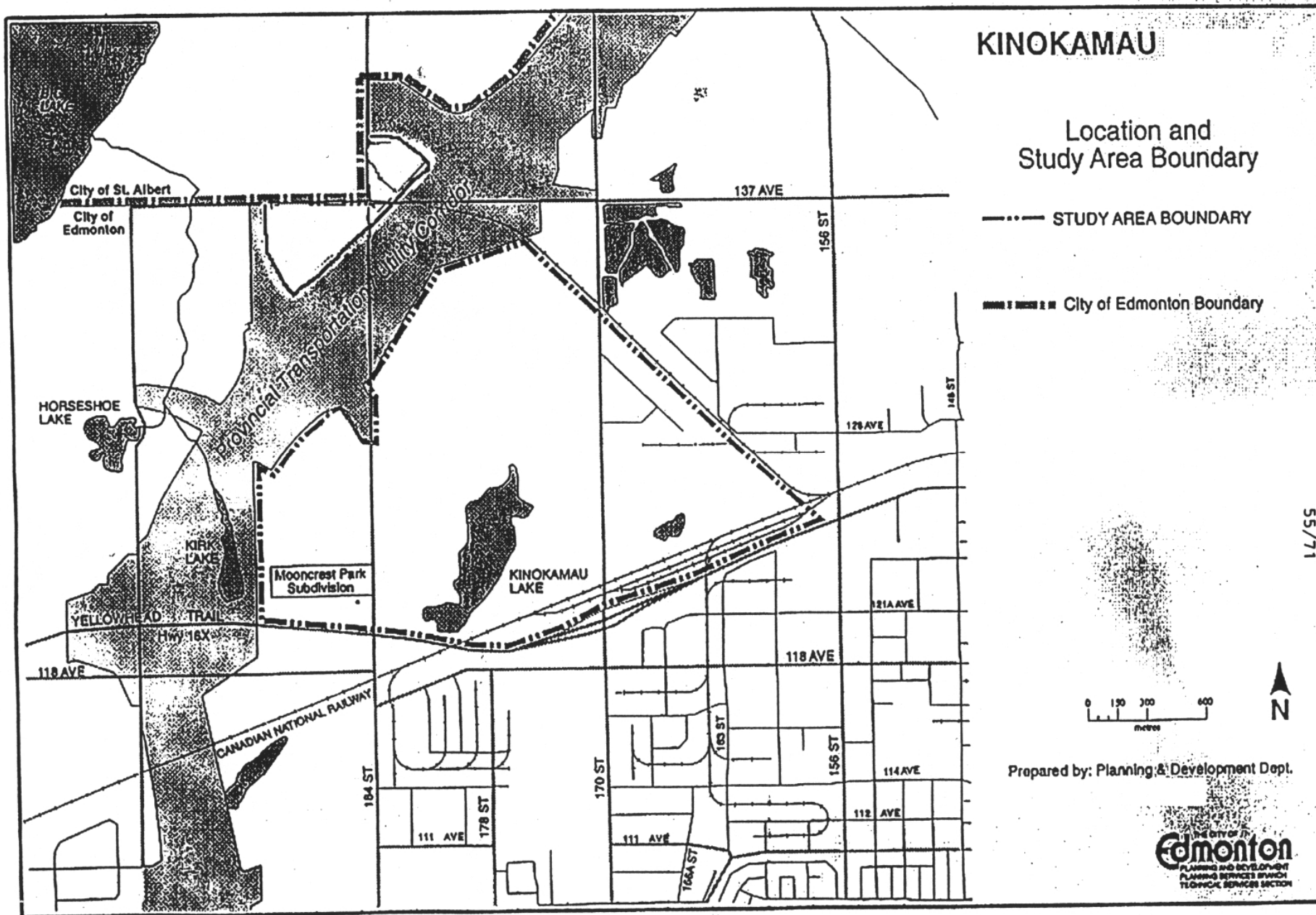
A handwritten signature in black ink, appearing to read 'Bob Caldwell', followed by a large, stylized checkmark or 'H' symbol.

For

Bob Caldwell
Manager
Planning and Policy Services Branch

DR/dr

Enclosed



55/71

Appendix B
Kinokamau Plains Area Structure Plan
Open House Comments

APPENDIX B

KINOKAMAU PLAINS AREA STRUCTURE PLAN

OPEN HOUSE COMMENTS

Roughly 54 people attended the Open House. Of these, about 30 were landowners and residents or business people within the Area Structure Plan area. Roughly 9 attendees were real estate agents or land developers. 4 attendees represented other interests in the area, such as those of the City Planning and Development Department or Alberta Infrastructure. 19 comment sheets were returned by attendees and their comments are summarized below.

1. Which community do you live in?
 - Mooncrest - 5
 - West of 184 Street north of Mooncrest - 1
 - St. Albert -5
 - Edmonton - 5
 - East Crestwood - 1
 - Goldbar - 1
2. Do you work or have a business within the Area Structure Plan boundary?
 - Yes - 5 (26%)
 - No - 13 (68%)
3. Were the displays informative?
 - Yes - 19 (100%)
 - No-0
4. Did the representatives answer your concerns and questions to your satisfaction?
 - Yes - 19 (100%)
 - No-0
5. Given what you now know about the Area Structure Plan, do you:

- support it? - 15 (79%)
- not support it? – 0
- support it with reservations? 4 (21%)

Appendix C
Kinokamau Plains Area Structure Plan
FREEMAN WOODLAND

FREEMAN WOODLAND
Bylaw 12451
November 16, 2000

Kinokamau Plains
Area Structure Plan

