

# ***Big Lake Area Structure Plan***

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Office Consolidation May 2014

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*Prepared by:*

Amended by Editor

*Current Planning Branch  
Sustainable Development  
City of Edmonton*

**Bylaw 9878 was adopted by Council in August 1991. In May 2014, this document was consolidated by virtue of the incorporation of the following bylaws:**

- Bylaw 9878* Approved August 24, 1991 - to adopt the Big Lake Area Structure Plan
- Bylaw 14802* Approved January 14, 2008 – to amend the Big Lake Area Structure Plan, removing the 127 Avenue flyover of Anthony Henday Drive, and replacing the original concept for Neighbourhood One with a new concept, approved as the Big Lake Neighbourhood One Neighbourhood Structure Plan under Bylaw 14803.
- Bylaw 15460* Approved August 23, 2010 – to replace the original concept for Neighbourhood Two with a new concept, approved as Big Lake Neighbourhood Two Neighbourhood Structure Plan under Bylaw 15461.
- Bylaw 15546* Approved September 13, 2010 - to amend the Big Lake Area Structure Plan by updating population statistics and neighbourhood plan map, and replacing the original concept for Neighbourhood Three with a new concept, approved as the Big Lake Neighbourhood Three Neighbourhood Structure Plan under Bylaw 15547.
- Bylaw 15986* Approved January 30, 2012 – to realign 137 Avenue, assign land uses to lands with and shift an un-named collector in Neighbourhood 5.
- Bylaw 16067* Approved April 30, 2012 - to reconfigure and reduce a Medium Density Residential site in the northeast corner of the Plan area and to redesignate a Medium Density Residential area to a Low Density Residential area on the west side of the Starling Neighbourhood.
- Bylaw 16742* Approved May 26, 2014 – to amend land uses in the western portion of Hawks Ridge Neighbourhood and update the figures accordingly.

**Editor's Note:**

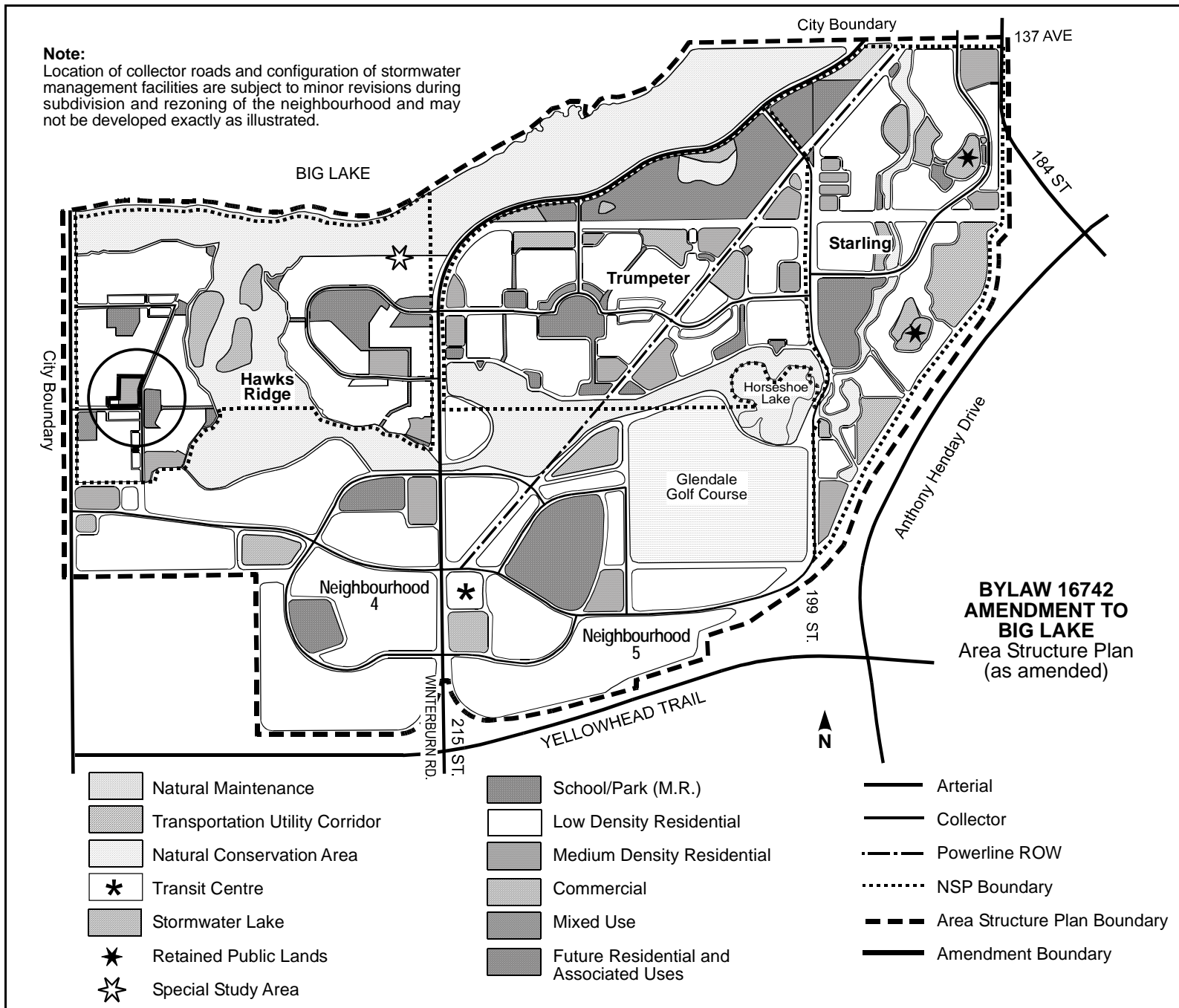
This is an office consolidation edition of the Big Lake Area Structure Plan, Bylaw 9878, as approved by City Council on August 24, 1991.

This edition contains all amendments and additions to Bylaw 9878. 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 Bylaw. 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.

City of Edmonton  
Sustainable Development

*Bylaw 16742*  
*May 26, 2014*



# **BIG LAKE AREA STRUCTURE PLAN**

**Prepared by**

**IMC Consulting Group Inc.**

**On Behalf of**

***a private corporation***

(Amended by Editor)

**August, 1991**

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## TABLE OF CONTENTS (Amended by Editor)

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	Page
FOREWORD	1
1.0 INTRODUCTION AND BACKGROUND	3
1.1 The Plan	3
1.2 Plan Area	4
1.3 Development Rationale	5
1.4 Scope of Plan	5
1.5 Report Format	6
2.0 CONTEXT	7
2.1 Regional Setting	7
2.2 Market Context	7
3.0 DEVELOPMENT CONSIDERATIONS	9
3.1 Introduction	9
3.2 Land Ownership	9
3.3 Geotechnical	9
3.5 Vegetation and Wildlife	12
3.6 Existing Land Use	16
3.7 Adjacent Land Use	19
4.0 DEVELOPMENT POLICIES AND OBJECTIVES	21
4.1 General	21
4.2 Overall Objectives	21
4.3 Residential Objectives	22
4.4 Commercial Objectives	22
4.5 Schools	22
4.6 Open Space	22
4.7 Transportation	23
4.8 Utilities	23
4.9 Natural Environment	23
4.10 Existing Uses	23

5.0	POLICY CONTEXT	24
5.1	Edmonton Regional Plan	24
5.2	Edmonton General Municipal Plan	24
5.3	North Saskatchewan River Valley Area Redevelopment Plan	25
5.4	Big Lake Management Plan	26
6.0	LAND USE CONCEPT	28
6.1	Development Concept	28
6.2	Residential Land Use	30
6.3	Future Residential & Associated Uses	31
6.4	Open Space/Park System	33
6.5	Schools and Institutions	35
6.6	Commercial	35
6.7	Circulation System	36
7.0	ENGINEERING AND UTILITY SERVICES	38
7.1	General	38
7.2	Sanitary Drainage System	38
7.3	Storm Drainage System	42
7.4	Water Supply and Distribution	51
7.5	Utility Services	53
8.0	IMPLEMENTATION OF THE DEVELOPMENT	54
8.1	General	54
8.2	Staging	54

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## **LIST OF APPENDICES**

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	Page
APPENDIX 1 LAND USE STATISTICS	57
APPENDIX 2 LAND OWNERSHIP	60
APPENDIX 3 NOTIFICATION LETTER	64
APPENDIX 4 WELL LOCATION AND STATUS	67

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## LIST OF EXHIBITS

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	Page
1. LOCATION PLAN	8
2. OWNERSHIP	10
3. NATURAL SITE FEATURES	13
4. SITE UTILITIES	18
5. RIVER VALLEY PROTECTION AREA	27
6. LAND USE CONCEPT	29
7. SANITARY DRAINAGE SYSTEM	39
8. ALTERNATIVE SANITARY OUTFALL	40
9. STORM DRAINAGE SYSTEM	43
10. WATERMAIN SYSTEM	44
11. NEIGHBOURHOOD PLAN	55

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## FOREWORD

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In order to encourage a continuation of development within the City of Edmonton while at the same time ensuring that citizens of the City of Edmonton enjoy a high standard of development with quality services for the lands covered by this Area Structure Plan, the Council of the City of Edmonton has made the policy decision to approve this Area Structure Plan recognizing the following limitations and acknowledgements:

- a) that final approval of residential servicing agreements remains subject to a review of detailed plans of subdivision within the context of the approved Infrastructure Performance Criteria necessitated by soil conditions as outlined in detail in the body of the Plan and that the City, by approval of the Area Structure Plan, does not warrant approval of any residential servicing agreement or future *rezoning*;
- b) that the City reserves the right to apply any additional Infrastructure Performance Criteria specific to the lands covered by the Area Structure Plan, in order to provide the quality services expected by the citizens of the City of Edmonton;
- c) that all development expenses and other costs, of every nature and kind, are expended at the developer's sole risk and that any additional expenses incurred by the developer as a result of any modifications resulting from the aforesaid Infrastructure Performance Criteria are for the sole account of the developer; and,
- d) that notwithstanding Area Structure Plan approval, Neighbourhood Structure Plan approval, *rezoning* approval, or subdivision approval, the developer will not apply for development permits or commence construction of buildings, surface and underground improvements until the servicing agreements encompassing the approved Infrastructure Performance Criteria have been

Amended by Editor

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executed and delivered, it being understood that this provision does not apply to site preparation work already completed or in progress for which a development permit or other approval has already been issued by the City.

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## 1.0 INTRODUCTION AND BACKGROUND

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### 1.1 THE PLAN

*Bylaw 15986  
January 30, 2012*

*The Big Lake Area Structure Plan describes the proposed development concept for an 890 ha. (2,199 ac.) area of land located in the northwest sector of the City of Edmonton. The plan has been prepared on behalf of two private landowners, the major owners of land within this area.*

Amended by Editor

This document and accompanying plans have been prepared in accordance with Section 64 of the Planning Act and with the City of Edmonton Terms of Reference for residential area structure plans. Its general purpose as stated in the Act is to prescribe proposed land uses, transportation and utility systems, population and densities and the natural sequence of development for the area.

#### **1.1.1. 2007 PLAN UPDATE**

*Bylaw 14802  
January 14, 2008*

*In December, 2006, the Sustainable Development Department received an application for a new Neighbourhood Structure Plan for the first neighbourhood within the Big Lake ASP. The application for the Big Lake Neighbourhood One NSP was accompanied by an amendment to this Plan to redefine the general land use, density and pattern of development and location of roadways for the lands located within Neighbourhood One.*

*The Neighbourhood One NSP incorporates several more contemporary planning principles and approaches that were not originally contemplated with this Plan. Since its approval in 1991, there have been no amendments to this Bylaw. During this time, planning policies and practices within the City of Edmonton have changed. As a result, some of the information contained within this ASP pertaining to Neighbourhood One is updated by the detailed guidelines and policies within the NSP itself, and not specifically amended or described through the text of this Plan. However, a summary of the changes affecting the Area Structure Plan, and therefore affecting the Land Use Concept of this Plan incorporated through the adoption of an NSP for Neighbourhood One, is listed below:*

- *Changes to the arterial roadway network due to the Province's acceptance of the removal of the 128 Avenue flyover from Anthony Henday Drive, resulting in adjustments to the boundaries of Neighbourhood One and adjacent neighbourhood to the northeast;*
- *Elimination of a north-south collector roadway that intersects the portion of the North Saskatchewan River Valley system in the central plan area; and*
- *Submission of an Area Master Plan amendment.*

*Changes relating specifically to Neighbourhood One within the Big Lake ASP are:*

- *Reconfiguration of the collector roadway network and recognition of the Electrical Transmission Corridor right-of-way;*
- *As a result of the reconfigured neighbourhood boundary and collector roadway network, redistribution of low and medium density residential uses, commercial uses, parks and open space and stormwater management facilities within the plan area;*
- *Removal of:*
  - *One commercial site, leaving one commercial site relocated to the northeast portion of the neighbourhood;*
  - *A public elementary school site as a result of updated student generation methods employed by Edmonton Public Schools;*
- *Addition of a mixed use site; and*
- *Simplification of land use designations as per current practice in new NSP's as either Low Density or Medium Density Residential.*

## **1.2 PLAN AREA**

The area for which the plan has been prepared is situated in the northwest sector of the City of Edmonton. More specifically, the plan area includes parts of Sections 13 and 24 within Township 53, Range 26 and part of Sections 17, 18 and 19 and 20 within Township 53, Range 25, west of the 4th Meridian.

The boundaries of the plan area are as follows:

North: The south shore line of Big Lake and the extension of 137 Avenue;

West: 231 Street which is the current west boundary of the City of  
Edmonton;

South: The Northern boundary of the “Yellowhead Highway - *Highway 16*”.

Amended by Editor

East: The outer edge of the Restricted Development Area (*Transportation and Utility Corridor*) and the extension of 184 Street to the Outer Ring Road (*Anthony Henday Drive*).

This delineation of the plan area creates a logical planning unit in terms of such considerations as easily identifiable boundaries and development servicing considerations.

### **1.3 DEVELOPMENT RATIONALE**

The Edmonton City Council authorized the preparation of the Big Lake Area Structure Plan 25 April 1989. The plan area is self contained as a result of the static boundaries. These boundaries, which include the Big Lake, the Transportation and Utility Corridor, the Yellowhead Highway, and the west boundary of the City of Edmonton, are boundaries which are not apt to change over time, therefore restricting expansion of the plan area in all directions. In addition to the above, the plan area affords the future residents of the plan area and the City with unique and interesting environmental areas and recreational opportunities.

The area can be served by existing and proposed economic, cultural, recreational, educational and religious facilities available both in the immediate adjacent areas, as well as within the plan boundary.

### **1.4 SCOPE OF PLAN**

The Area Structure Plan as proposed provides for the orderly development of the area, specifying land uses, residential density patterns, park and school requirements and locations, the transportation network, and servicing and utility requirements.

The design for the area is intended to establish a framework within which development will take place and incorporates municipal requirements for the area, in order that consistent and coordinated development may take place responsive to the needs and requirements of the future residents.

The Area Structure Plan will provide a sound framework within which City Council and relevant review agencies may properly and fully evaluate future Neighbourhood Structure Plans and *rezoning* applications. Furthermore, the plan serves as a guide for the *Subdivision Authority* to utilize when assessing detailed subdivisions.

Amended by Editor

It should be noted that the plan represents an optimum housing mix according to present trends. As such, it must be realized that within the time span for implementation of the plan, flexibility is required in order that changing demands can be accommodated. These demands may be for marketing alternatives, new housing forms and building types.

## **1.5 REPORT FORMAT**

This document has been disaggregated into seven (7) major parts. The first provides a brief introduction and background to the report. Sections 2 and 3 establish the basis and framework such as the urban context, and development considerations. Section 4 of the document describes the development principles and objectives, Section 5 deals with Policy Context, while Section 6 describes and outlines how the development objectives have been translated into a land use and transportation concept. Section 7 of the report describes the engineering servicing systems that will provide water, storm, sanitary, and transportation services into the area, while Section 8 outlines an implementation strategy for the Big Lake Area.

A detailed statistical profile of the Big Lake Development concept is provided in Appendix 1 of this Area Structure Plan. Appendix 2 details the land ownership within the plan area. Appendix 3 is a copy of the notification letter and Appendix 4 details well locations and their status.

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## **2.0 SITE CONTEXT**

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### **2.1 REGIONAL SETTING**

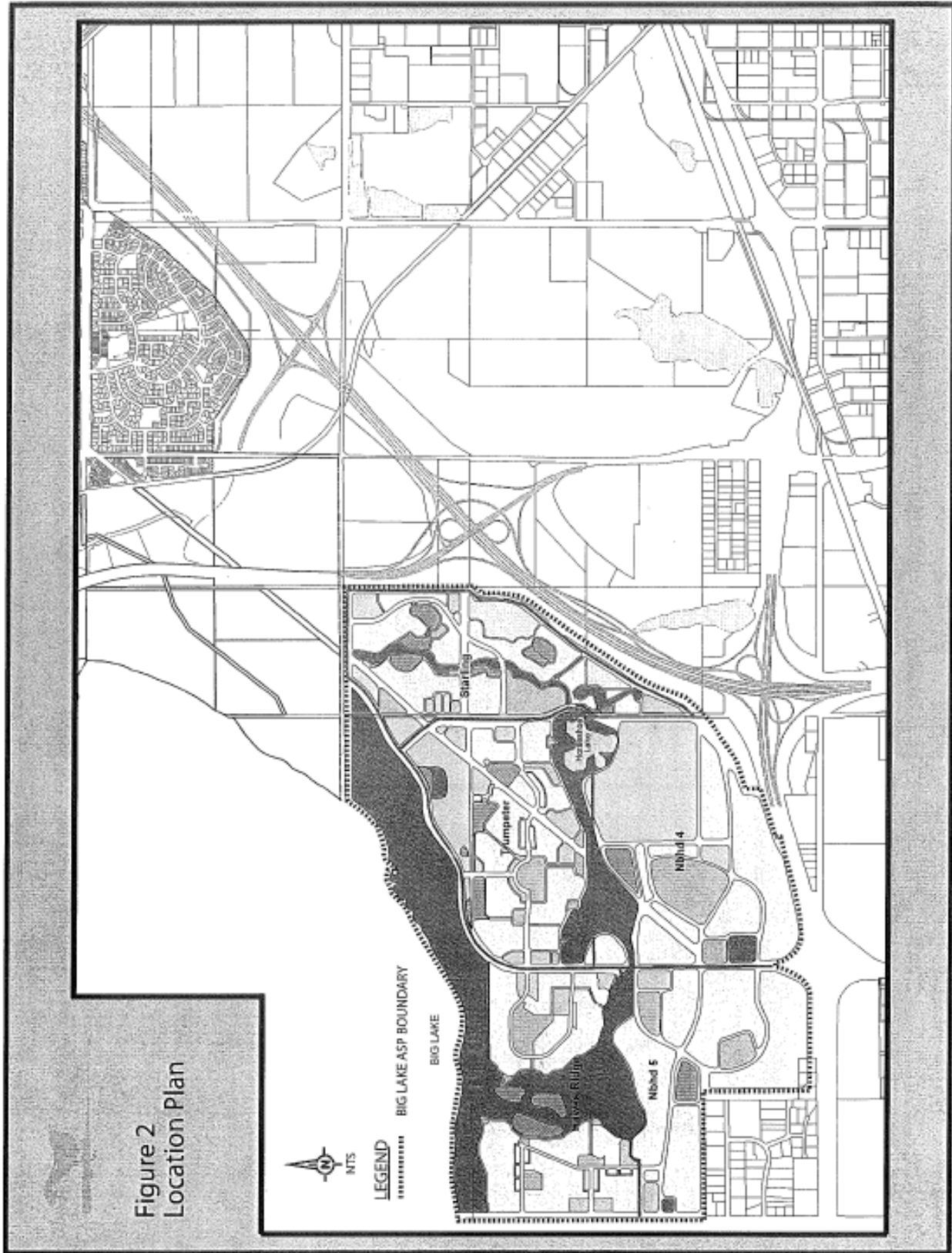
As illustrated by Exhibit 1, the Big Lake Area Structure Plan Area is located immediately north of *Highway 16 (Yellowhead Trail)* and west of the Restricted Development Area. At present, the lands are accessible from *Highway 16 (Yellowhead Trail)* at 199, 215 (*Winterburn Road*) and 231 Street and from the extension of 137 Avenue from the east. In the future, the lands will be well served by the proposed regional scale transportation network, which will include the development of the *Anthony Henday Drive* and the extension of 184 Street, which will provide convenient access to all parts of the City and the Provincial Highway network.

Amended by Editor

Amended by Editor

### **2.2 MARKET CONTEXT**

The plan proponents recognize that as the form of suburban neighbourhoods and personal preferences change, the requirements for servicing and neighbourhood forms will also change. Furthermore, they recognize the City's desire to maintain reasonable land prices through a competitive market. The plan proposes the use of predominantly low density residential development in conjunction with and adjacent to the environmentally sensitive areas. The recreational opportunities afforded by Big Lake are a major part of the market focus. This lower density type of development is a market which the owners believe will be of positive benefit to the City of Edmonton.



Bylaw 16067  
April 30, 2012

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## **3.0 DEVELOPMENT CONSIDERATIONS**

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### **3.1 INTRODUCTION**

In the preparation of the Area Structure Plan, it was necessary to examine existing site conditions and to inventory existing influences (natural and man-made) as these factors can affect the type and levels of development that can be achieved in the Big Lake area. These factors include topography, geotechnical information, vegetation, wildlife, existing land uses, resource extraction facilities, adjacent developments, and existing utilities.

The implication of these factors is more fully described in the following sections.

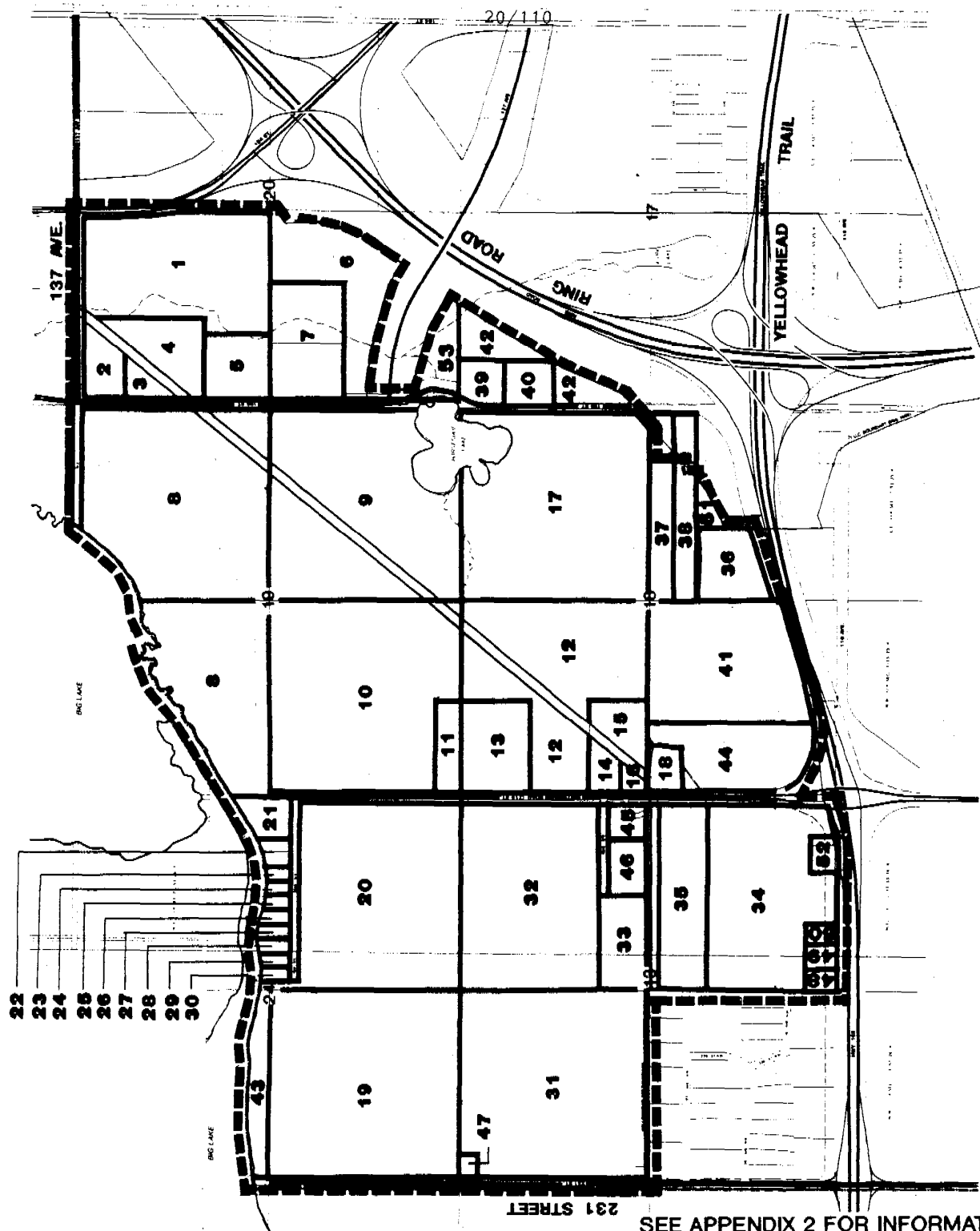
### **3.2 LAND OWNERSHIP**

Of the 35 landowners within the plan area, all were sent notification by way of a notice delivered by regular mail (See Appendix 2). The circulation of the land use concept resulted in eight inquiries. Those inquiries were with respect to additional information regarding timeframe for development, location of school park sites, access to the shores of Big Lake, etc. As a result of the notification a number of additional copies of the plan were distributed. Those who inquired were generally in support of the plan, however, it should be noted that one objection to the plan was received with respect to the location of a school park site.

### **3.3 GEOTECHNICAL**

A comprehensive soil sampling and groundwater testing program has been prepared and submitted to the City for its review (AD. Williams Engineering Ltd. "Geotechnical and Groundwater Evaluation Big Lake Area Structure Plan"). The following is based on information contained within the aforementioned.





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A horizontal scale bar with four segments. The segments are labeled from left to right: 0, 150, 350, and 700m. The bar is divided into three main sections: a white section from 0 to 150, a black section from 150 to 350, and a white section from 350 to 700.

## Exhibit 2

### OWNERSHIP

The Canada Land Inventory (CLI) classifies the soil in the area as predominantly Class 3 and Class 4 capability, which suggests that moderate to severe limitations restrict the range of crops or require special conservation practices.

Most of the site is covered by a thin organic topsoil layer, up to one meter in thickness, but generally in the range of 100 millimeters. Underlying the topsoil and/or peat is generally a glaciolacustrine deposit consisting predominantly of medium to high plastic clay material. The clay deposit is up to 83 meters in thickness but is generally in the range of three to five meters.

A peat moss and organic soil deposit up to seven meters in thickness was encountered in the southeast corner of the study area. Furthermore, two meters of organic soils were encountered on the north shore of Horseshoe Lake. Based on air photo interpretation, a north-south trending depression extends from Horseshoe Lake to south of *Highway 16 (Yellowhead Trail)*. This depression is likely in filled with thick organic soils and peat as encountered in the aforementioned (A. D. Williams 1990). These organic soils for the most part are contained within the existing Glendale Golf Course. These areas, where necessary, will be addressed at the Neighbourhood Structure Plan stage by way of further study and specific design criteria so as to facilitate development.

Amended by Editor

A groundwater monitoring program was undertaken to determine the local groundwater conditions and its influence on the proposed development. A total of 43 standpipe piezometers were installed in the field program. The piezometers were installed in the two main lithologic units; the clay and sand units. Nine of the 18 piezometers installed in the clay unit have detected water. Seven of these have registered a water level within three meters of the ground surface. Seventeen of the 25 piezometers installed in the sand unit have detected water. Five of these have registered a water level within four meters of the ground surface. The deepest water level measured in sand piezometers was 15.4 meters below the ground surface. The program summarized a strong influence of the local topography, as well as the

lithologic units, on the piezometers level. (A. D. Williams).

Normally, a groundwater elevation contour map is helpful in determining the groundwater conditions, provided the topography is relatively even. Due to the wide variance in relief of the study area, the groundwater conditions are elevated in terms of the depth to water level below ground surface. Therefore, for preliminary

*(Remainder of paragraph and Section 3.4 missing from original Bylaw)*

Amended by Editor

### **3.5 VEGETATION AND WILDLIFE**

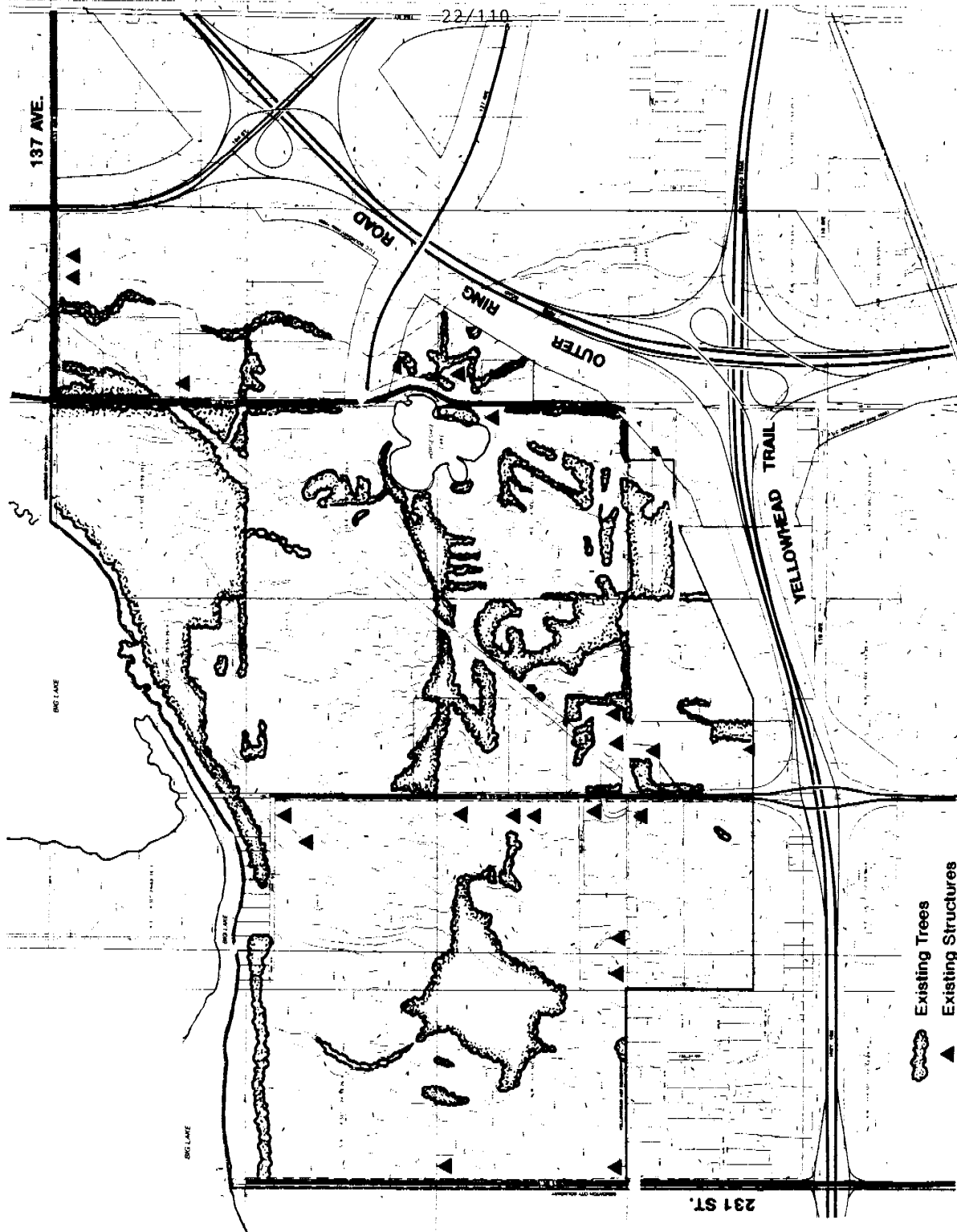
A comprehensive Environmental Evaluation of the Big Lake Area has been prepared and submitted to the City for its review. (D. Penner 1990, Environmental Evaluation of the Big Lake Area Structure Plan). The following information is based on the aforementioned.

Most of the better drained lands within the study area have been cleared for cultivation.

The remaining natural vegetation is generally associated with adverse topography hydrologic and drainage characteristics which have generally precluded cultivation in the past (see Exhibit 3).

Natural vegetation is characteristic of the Aspen Parkland Region with components of the Boreal Mixed Wood Forest Region occurring in localized areas.

Trembling Aspen is the dominant tree species on the better drained uplands, while Balsam popular frequent the moist areas.



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### Exhibit 3 NATURAL SITE FEATURES

Paper Birch and White Spruce occur sporadically in small stands.

Common understory species include Wild Rose, Saskatoon, Chokecherry, Snowberry, Red Osier, Dogwood, Willow, Aster Bunchberry, Twin Flower, Yarrow and Grasses.

The steep north facing slope of Big Lake supports a diverse forest cover. Several mature white spruce stands are notable vegetation features along this rugged terrain. In addition, this slope contains a variety of understory plant species. The plan area contains two larger tracts of natural forest cover. The first, a large wooded area west of Horseshoe Lake, is a bog characterized by black spruce and Labrador tea and a larch/sedge fen with some cattail and bulrush vegetation in the central, poorest drained area (Penner 1990). These lands are for the most part within the NSRVARP.

The second natural area in the north half of Section 13 and portions of Section 24 covers about 28 ha. As determined by A. D. Williams (1990), this area contains an upward hydraulic gradient in the area, suggesting a local discharge of water. The groundwater discharge has influenced development of hybrid vegetation types, notably a black spruce/larch-sedge-sphagnum bog near the discharge site and riparian willow (balsam poplar-sedge communities along the drainage (Penner 1990). A reconnaissance of the wooded area found a high degree of plant community and wildlife habitat diversity within a localized area.

It would appear that the aforementioned areas are most probably maintained by poor drainage and/or groundwater discharge. These conditions would appear to render these lands unsuitable for subdivision development. The site conditions and vegetation communities bear similarities to the Warner Bog, a special natural area located 7 km west along *Highway 16 (Yellowhead Trail)*. The Warner Bog supports a variety of uncommon species such as orchids and carnivorous plants and a wide variety of flowering plants. Similar species could be anticipated within the above-noted areas and, as such, the perspective gained from the current evaluation is that these bog habitats are significant natural areas worthy of preservation (Penner 1990).

Amended by Editor

Further study and evaluation is required at the Neighbourhood Structure Plan stage to support an objective assessment of these habitats. These lands are within the NSRVARP and, as such, the municipality has the option to attempt to acquire these lands as Environmental Reserve pursuant to policy statements within the NSRVARP and regulations within the Planning Act.

Another large area of natural vegetation (though less significant than the aforementioned) is located within Section 19. This area supports a lush stand of large ferns and an overstory of willow, red osier dogwood, high-bush cranberry, honeysuckle, balsam poplar and aspen (Penner 1990). This vegetation community would have high value for wildlife habitat, natural vegetation features and low intensity recreational use.

As such, this area has been designated as Municipal Reserve so as to facilitate the uses envisioned within the Big Lake Management Study (EMRPC 1989). The issue of Municipal Reserve is dealt with in later sections of this plan.

These wooded areas and the associated shoreline of Big Lake support a diversity of fauna. Approximately 43 mammal species (Smith 1979), 170 bird species and 7 species of amphibians and reptiles can be expected to occur as year round residents, seasonal residents or migrants in the area. These areas provide potentially good ungulate habitat as evidenced by the presence of white-tailed and mule deer within the area. Other mammals in the area include coyote, red squirrel, snowshoe hare, porcupine, ermine, striped skunk, pocket gopher, deer mouse, Gappees red-backed vole and dusky shrew (Penner 1990). In addition, special habitat afforded by the tree stands and bog areas within the NSRVARP may provide habitat for less common species such as northern flying squirrel and water shrew.

The nature forest and variety of plant species provide habitat for, as previously mentioned, 170 bird species including, but not limited to, ring-necked pheasants, gray partridge, ruffed grouse, red-tailed hawk, marsh hawk, great horned owl and

goshawk, pileated woodpecker, downy woodpecker, blue jays, etc. (Penner 1990).

Most of the urban and recreational development (school park sites) proposed will occur in the well drained uplands which have been previously cleared and cultivated, therefore it will not displace significant numbers of wildlife.

As previously mentioned, the important wildlife habitat has been identified in the land use concept as either Environmental or Municipal Reserve in accordance with the requirements of the Planning Act.

These natural areas serve as a valuable amenity to the residents of the Big Lake Area and, as such, further study will occur at the NSP stage to further redefine and integrate these areas within the plan area. Attention will be given to the provision of vegetated wildlife corridors in order to retain the larger wildlife species.

### **3.6 EXISTING LAND USE**

The predominant land use within the plan area is agriculture, mostly grain and hay production. Several farmsteads and rural residences exist throughout the area. The Glendale Golf and County Club exists within the plan area in the NE ¼ of Section 18. Should the Glendale Golf and Country Club be redeveloped at a future date, reserves will be provided to the satisfaction of the *Asset Management and Public Works* Department in accordance with the Planning Act.

Amended by Editor

The plan area contains a *private utility* power line right-of-way-which traverses the plan area from northeast to southwest (see Exhibit 4).

Amended by Editor

The *private utility* Right-of-Way Plan 5622 MC is an active natural gas pipeline (3") that begins in the LSD 10 NE 1/4 Sec. 19– 53 – 25 – W4. The line travels westward across the NW 1/4 Sec. 19–53–25–W4 exiting the plan area through Big Lake (NE 1/4 Sec. 24-53-25–W4). It is anticipated that the minimum lifespan of the gas reserves is 10 years.

Amended by Editor

A second pipeline exists on the west side of the plan area. Right-of-Way Plan 2073 K.S. is a crude oil pipeline which travels north through NW 1/4 Sec. 13-53-26-W4 and the SW 1/4 Sec. 24-53-26-W4 exiting the plan through Big Lake. The right-of-way is held by *a private corporation* who has indicated that an application to discontinue the operation of the line has been submitted to the Energy Resources Conservation Board.

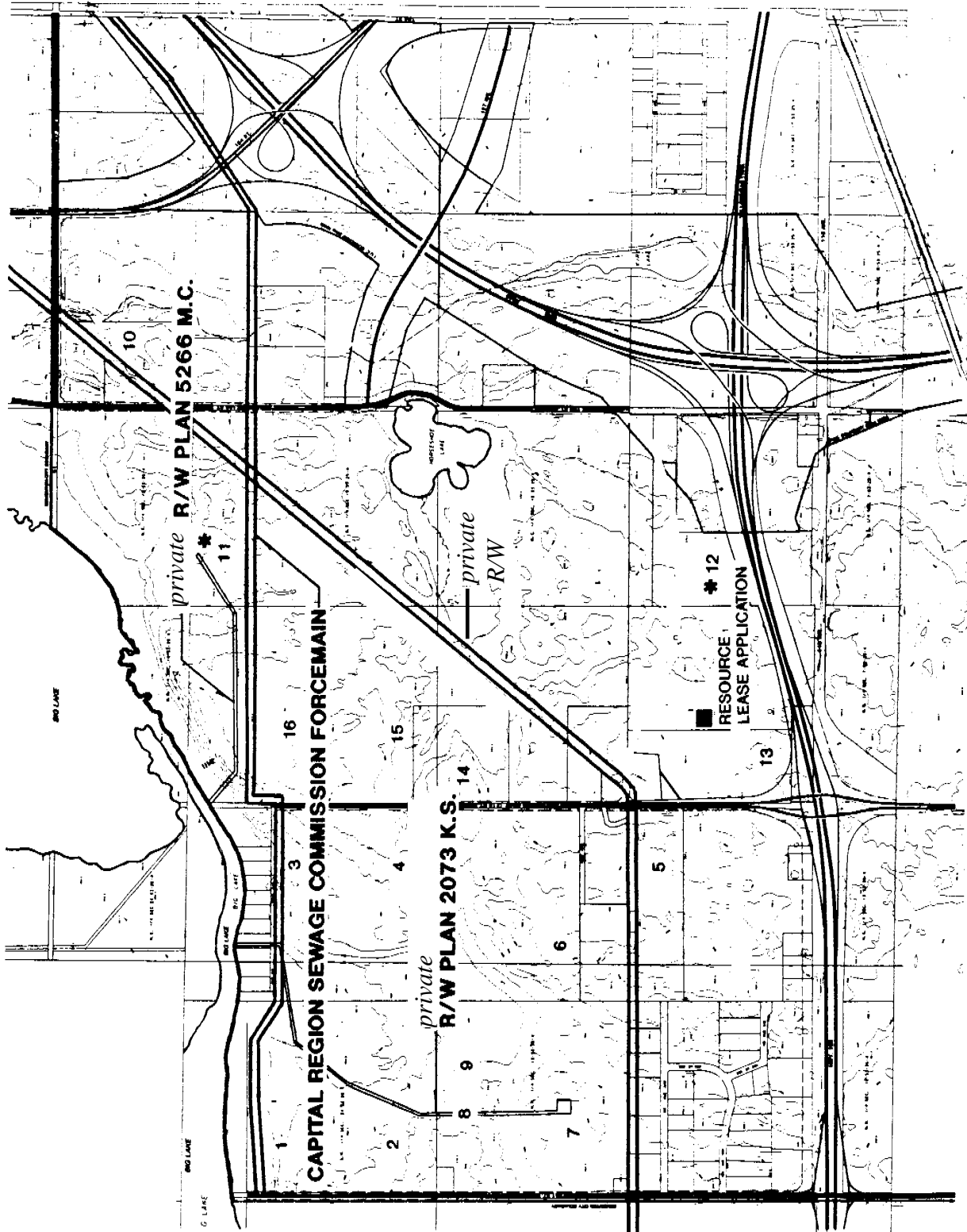
Amended by Editor

In addition, the Capital Region Sewage Commission force main (Plan 842-2193) traverses the plan area from east and west and is located in the north portion of the plan.

The Big Lake area has seen a number of wells drilled over the past several years. There are presently 14 abandoned and capped wells within the plan area and 2 active wells. (See Appendix 4 and Exhibit 4). *A private corporation* currently has an application for a resource lease in SW 18-53-25-W4. The application is presently being reviewed by the *Alberta Energy Regulator* (see Exhibit 4).

Amended by Editor





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\* Indicates Active Well  
(See Appendix 3)

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## Exhibit 4\*

### SITE UTILITIES

\*as amended by Editor

The *Alberta Energy Regulator* held an inquiry in March and April of 1983 into resource development and the possible conflicts between urban development in West Edmonton. The *Regulator* found that reasonable co-existence was possible and they recommended a set of land use planning guidelines. In September of 1985 Edmonton City Council approved Policy Guidelines for the Integration of Resource Operations and Urban Development. These guidelines were to ensure that urban uses and resource operations can coexist without any adverse impacts.

The Big Lake Area Structure Plan will conform to the *Alberta Energy Regulator* requirements and those guidelines approved by the City when integrating energy resource facilities within the urban fabric. Extensive landscape screening will be provided to the satisfaction of the City for the active well or any be developed at the Neighbourhood Structure Plan stage. In addition, well sites will be configured in accordance with required separation distances and to allow for their successful integration into the surrounding land uses once the facility has been abandoned.

The existing land uses pose minor constraints to future development within the Big Lake Plan area. However, in most cases existing land uses can be integrated into residential subdivisions or recreational developments.

### **3.7 ADJACENT LAND USE**

The adjacent land uses pose constraints to the future expansion and or enlargement of the Big Lake Area Structure Plan. To the north the area is bordered by Big Lake and the City of St. Albert. Both pose a significant constraint to expansion of the plan area.

The area south of the plan area is *Highway 16 (Yellowhead Trail)*. The Yellowhead is a major transportation link within the Edmonton Metropolitan Area. The lineal piece of land paralleling *Highway 16* is presently within the boundaries of the Yellowhead Corridor Area Structure Plan. These lands consist of a developed country residential subdivision (low density) and vacant lands designated Industrial Business pursuant to the Yellowhead Plan. The *Sustainable Development* Department has requested that

Amended by Editor

Amended by Editor

these lands, with the exception of the country residential subdivision, be incorporated within the boundaries of the Big Lake Area Structure Plan. The City of Edmonton Planning and Development Department will amend the Yellowhead Corridor A.S.P. to designate these lands as predominantly single family residential.

Adjacent to the east boundary of the plan is the Edmonton Transportation and Utility Corridor. These lands are reserved for the future ring road (*Anthony Henday Drive*) and various utility and transmission installations. The corridor serves as a static boundary which constrains expansion of the plan area to the east.

Amended by Editor

To the west of the plan area are lands contained within the *Parkland County*. These lands are currently utilized for mixed use agriculture and country residential development. At the present time, the *Parkland County* is preparing an Area Structure Plan for approximately 8 sections of land immediately adjacent to the Big Lake Plan Area. These lands are being planned to accommodate low density country residential housing. This low density housing will compliment the low density residential envisioned in the Big Lake Area.

Amended by Editor

Though the above pose constraints to expansion of the plan area, they do not constrain development within the plan area.

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## **4.0 DEVELOPMENT POLICIES AND OBJECTIVES**

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### **4.1 GENERAL**

The Area Structure Plan, which is the intermediate link between the Edmonton General Municipal Plan and the Neighbourhood Structure Plan, provides the overall policy framework for the development of the area. The recognition of the potential role of the development area as an important segment of the urban fabric of Edmonton leads to the formulation of a number of objectives which will guide the development of the area. The following principles and objectives have guided the preparation of the Development Plan for the Big Lake Area. These principles provide the necessary framework and flexibility to accommodate changes in policies and/or market conditions.

### **4.2 OVERALL OBJECTIVES**

- To provide a land use framework for the detailed planning of a high quality residential area and associated complementing land uses.
- To conserve and optimize the use of natural environment through sensitive integration of the development with natural features.
- To preserve all significant viewpoints and vistas and other significant views provided from the area.
- To provide services to the standards of the City.
- To provide planning flexibility and stimulate innovation in planning and design of residential areas.
- To encourage energy efficiency in planning whenever possible.
- To allow for economical phased development at the earliest practical date consistent with City policies.
- To conform to the general intent and objectives of the Big Lake Management Plan, and Edmonton's General Municipal Plan.

#### **4.3 RESIDENTIAL OBJECTIVES**

- To create an attractive residential community.
- To conform to neighbourhood planning requirements utilizing quality urban design principles.
- To promote the establishment of a low density predominantly single family community and provide a variety of housing alternatives for its residents.
- To create sub-neighbourhood sectors which are flexible to change at subsequent planning stages dependent upon area analysis and market conditions at that time.

#### **4.4 COMMERCIAL OBJECTIVES**

- To satisfy the community and neighbourhood convenience commercial needs of the Big Lake Area.

#### **4.5 SCHOOLS**

- To establish locations for schools which meet the requirements of the Public and Separate School Boards.
- To economize on land by joint use school/park sites.

#### **4.6 OPEN SPACE**

- To recognize the use of the power line corridor rights-of way for limited recreational use.
- To meet the demands of future residents for active, passive and aesthetic green space and recreational areas on both a neighbourhood and district scale.
- To fulfill the statutory requirements of the Planning Act by providing ten (10%) of the area for open space and schools/or as money in lieu of municipal reserve land.
- To preserve those lands determined to be environmentally sensitive in the Big Lake Management Study and as defined in the Planning Act as Environmental Reserve.

#### **4.7 TRANSPORTATION**

- To provide safe and convenient access for vehicles and pedestrians.
- To provide an efficient hierarchical circulation system for automobiles, pedestrians, bicycles and public transit within the neighbourhoods which connect with major arteries.
- To provide for the future regional transportation needs as identified by the City of Edmonton and Province of Alberta.

#### **4.8 UTILITIES**

- To integrate power transmission corridors into the plan concept.
- To provide an economical servicing system and phasing sequence based on extending City services and utilities.
- To utilize stormwater retention and detention facilities in the plan area as amenity features whenever practical.

#### **4.9 NATURAL ENVIRONMENT**

- To maintain mature vegetation as an amenity feature where practical. Public access to the natural environmental reserve areas will be highlighted for all modes within the development area.
- Preservation of environmentally sensitive and significant areas.

#### **4.10 EXISTING USES**

- To allow for the continuation of existing uses, until the land is required to accommodate urban development within each neighbourhood.

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## **5.0 POLICY CONTEXT**

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A number of plans are currently in effect for the Big Lake Area. The plans are as follows:

1. Edmonton Regional Plan
2. Edmonton General Municipal Plan
3. North Saskatchewan River Valley Area Redevelopment Plan
4. Big Lake Management Plan

### **5.1 EDMONTON REGIONAL PLAN**

The plan area is contained within and generally conforms with the Edmonton Metropolitan Regional Plan. The broad policy directives of the Regional Plan are principally met by the specific land allocations and servicing proposals outlined in the Area Structure Plan.

### **5.2 EDMONTON GENERAL MUNICIPAL PLAN**

Pursuant to Section 64 (2) (a) of the Planning Act, the Big Lake Area Structure Plan shall conform to the General Municipal Plan. The plan quotes as its Vision of Edmonton, "A need to protect high quality agricultural land and a natural environment which focuses on the unique attraction of the North Saskatchewan River Valley and Ravine System protecting it and weaving it into the urban form". As mentioned throughout, the plan proposes lands within the ravine system as Environmental Reserve. These lands are interwoven with residential development so as to maximize their use and enjoyment to Edmonton's residents.

Pursuant to the General Municipal Plan Development concept, the lands, with the exception of those areas within the NSRVARP are designated suburban. Section 8, Implementation, Map 8 of the General Municipal Plan shows those areas of the city considered suitable for the preparation of development concept plans, Area Structure Plans or Area Redevelopment Plans. Map 8 denotes the Big Lake Area as "suitable for Area Structure Plan or Development Concept Plans." Section 8, Implementation,

furthermore states that Council may authorize the preparation of such plans as it determines they are necessary. It should again be reiterated that Council authorized the preparation of the Big Lake Area Structure Plan 25 April 1989.

The plan has been developed so as to comply with objective 6B of the General Municipal Plan. Objective 6B states, "To protect the natural environment of the River Valley and Ravine System." More specifically, Policy 6B(8) states that the plan must "Ensure that any development adjacent to Big Lake considers the guidelines and principles established in the Big Lake Plan adopted as a guideline by Council on April 11, 1989." Every effort has been made to protect the natural environment of the North Saskatchewan River Valley and Ravine System as well as comply with the guidelines of the Big Lake Plan.

The Edmonton General Municipal Plan states under Growth Strategy, Managing Suburban Growth, that "Suburban single family dwellings are likely to account for a large majority of total new housing starts in Edmonton over the Plan period". The Big Lake Plan area is envisioned as one such suburban area.

Also indicated under Growth Strategy, Managing Suburban Growth, "Flexibility in designing attractive and functional neighbourhoods is encouraged". The Big Lake plan provides for the flexibility indicated above. During the subdivision design stage, the existing tree coverage and the topography will be utilized and integrated so as to provide an attractive neighbourhood.

### **5.3 NORTH SASKATCHEWAN RIVER VALLEY AREA REDEVELOPMENT PLAN**

The purpose of the NSRVARP is to "protect the North Saskatchewan River Valley and Ravine System as part of Edmonton's valuable open space heritage and to establish the principles for future implementation plans and programs for parks development". By enunciating policies and a plan of action, the NSRVARP forms part of a comprehensive River Valley and Ravine Management programme.



Portions of the Big Lake Area Structure Plan are contained within the NSRVARP. It is the intent of the Big Lake ASP to comply with the purpose of the Plan by protecting those River Valley and Ravine lands. Section 3.2.8 of the NSRVARP states, "It is the policy of this plan that the City may acquire through subdivision, all lands lying below the geomorphic limit of the River Valley and Ravine systems as Environmental Reserve in accordance with the provisions of the Planning Act." Those environmentally sensitive lands, as determined in conjunction with the *Asset Management and Public Works* Department, the *Sustainable Development* Department, and an environmental consultant, will be dedicated as Environmental Reserve, pursuant to the Planning Act, at the time of subdivision.

Amended by Editor

#### **5.4 BIG LAKE MANAGEMENT PLAN**

The subject Area Structure Plan has complied with the Big Lake management plan. Land within the plan area are for the most part allocated as Agricultural/Long Term Residential Development Potential and Natural Maintenance. As well, small pockets of Natural Conservation, Existing Commercial Recreation and Agricultural/Long Term Recreational Development Potential are found within the plan area. The development proposed has been developed in accordance with the purpose and provisions of the various land use classifications within the Big Lake Management Plan. More specifically, those lands indicated as natural conservation will be acquired as Environmental Reserve at the time of subdivision. Land designated Natural Maintenance will for the most part be designated as Municipal Reserve where possible and utilized for recreational purposes having due regard to soil limitations and/or sensitive vegetation and wildlife. The issue of Environmental and Municipal Reserve will be in accordance with the Planning Act and City policy. This issue is dealt with in greater detail later in the report. The Big Lake Management Plan envisaged a lower density than normally found in typical subdivisions within the City.



**IMC**  
Consulting  
Group Inc.



0 150 350 700m

## Exhibit 5 RIVER VALLEY PROTECTION AREA

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## **6.0 LAND USE CONCEPT**

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### **6.1 DEVELOPMENT CONCEPT**

The development concept prepared for the Big Lake Area has evolved in response to several factors including:

- natural site features
- physical and functional relationships to Big Lake.
- access considerations
- servicing considerations
- the Big Lake Management Plan
- Edmonton General Municipal Plan
- North Saskatchewan River Valley Area Redevelopment Plan

The intent of the development concept is to integrate these factors in order to guide future urban development in a rational manner.

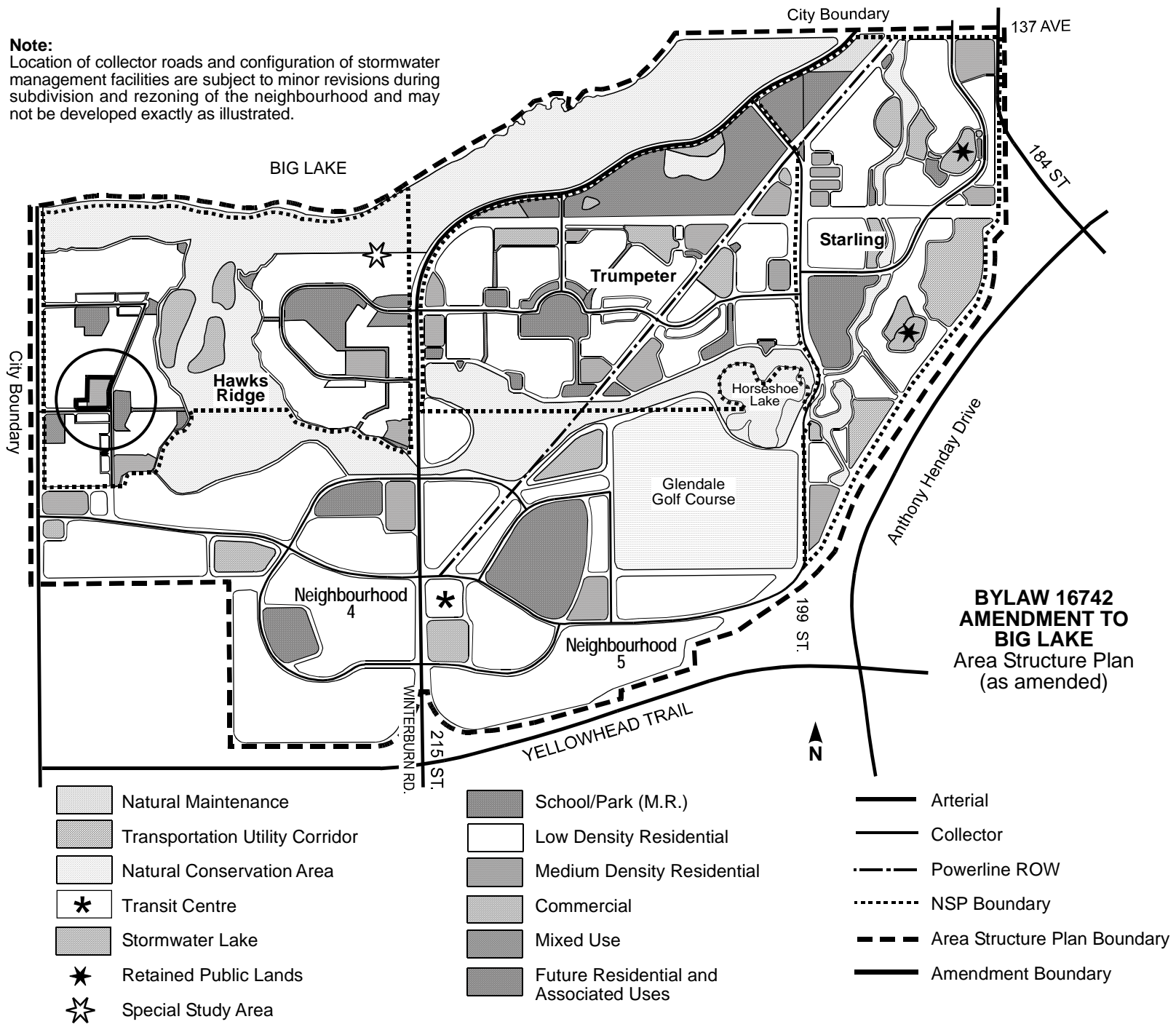
*Overall, the concept calls for the development of five residential neighbourhoods, accommodating a total residential population of 25,874 people.*

*Bylaw 16067  
April 30, 2012*

The following sections identify in greater detail the major land uses within the development concept and their relationships to each other. The infrastructure systems which support the development concept are detailed in the following section (see Exhibit 6).

**Note:**

Location of collector roads and configuration of stormwater management facilities are subject to minor revisions during subdivision and rezoning of the neighbourhood and may not be developed exactly as illustrated.



## 6.2 RESIDENTIAL LAND USE

*The majority of land within the Big Lake Area is designated for residential purposes. The plan provides for a range of dwelling types and densities permitting a choice of accommodation. Residential development within the Big Lake Area will result in a density of 42.70 persons per gross developable hectare (17.3 persons per gross developable acre). The aforementioned densities are based on the adjusted gross developable area which deletes the 53.93 ha Glendale Golf Course. Based on the tentative land use mix and density range given for the five neighbourhoods as outlined by the neighbourhood statistics in Appendix 1, the area will contain approximately 10,822 dwelling units and population of approximately 25,874 persons.*

*Bylaw 16067  
April 30, 2012*

*The emphasis is being placed on low density residential due to the suburban type market envisioned for the area as a result of the distance from the city centre. It is anticipated that the low density residential will be developed with densities of approximately 22 dwelling per gross hectare. The plan proposes approximately 307.7 ha of low density residential development, not including lands designated as Future Residential and Associated Uses.*

*Bylaw 16067  
April 30, 2012*

*In addition, the plan calls for medium density residential development. Medium density residential development consists of row housing, stacked row housing and low rise apartments accommodated by the RF5, RF6 and RA7 zones. Medium density residential housing will be provided at varying densities ranging from 42-125 dwelling units per hectare. Medium density residential housing has been provided throughout the plan area having regard to surrounding land uses and the transportation network. The plan provides approximately 35.9 ha of medium density residential development, not including lands designated as Future Residential and Associated Uses.*

*Bylaw 16067  
April 30, 2012*

*An area approximately 21.55 ha (53.25 ac) has been designated as a Special Study Area. A portion of this land is presently owned by a private corporation and utilized for parking. A portion of the Special Study Area (3.22 ha) is ravine lands covered by the North Saskatchewan River Valley Area Redevelopment Plan. These lands may consist of recreation and/or specialized residential uses. The parameters and details of*

*Amended by Editor*

this area will be further defined in the context of an Area Structure Plan Amendment in the future.

Provision of *social* housing within the plan area will be in response to demand. The amount and location of public housing sites will be determined in conjunction with the *Housing and Economic Stability* section of the *Sustainable Development* Department at the Neighbourhood Structure Plan stage.

*Amended by Editor*

The plan recognizes the need to buffer residential lands from the Yellowhead Trail. The specification and determination of such buffering will be determined at the Neighbourhood Structure Plan stage. In addition the plan recognizes that buffering may be required where the plan abuts the Big Lake Estates Country Residential Subdivision. Any buffering provided will consist of an open landscaped space and/or a grassed berm. The details of the buffering will be further defined at the Neighbourhood Structure Plan stage. Similar buffering is envisioned along the west side of the lands presently occupied by the Glendale Golf and Country Club.

It is anticipated that figures regarding residential development will vary over the development period in response to changing factors including, but not limited to, market preference, interest rates, and household sizes.

In keeping with the low density intent of the plan, high density apartment housing has not been proposed within the plan area.

### **6.3 FUTURE RESIDENTIAL AND ASSOCIATED USES**

*Bylaw 15986  
Jan. 30, 2012*

*The Future Residential and Associated Uses designation is intended to be and interim and generalized land use designation. It applies to two areas within the ASP. The larger of the two areas is located within the north portion of the Trumpeter neighbourhood. The smaller is located within the northwest corner of the Starling neighbourhood.*

*The designation is intended to be interim and generalized in recognition that the affected landowner is not yet prepared to undertake detailed planning for the affected lands. However, it does provide the landowner or future developer an increased level*

*of certainty that the subject lands will be considered by the City of Edmonton for residential expansion. Prior to any rezoning or subdivision of the lands within this area, an NSP amendment will be required to layout the exact type of residential and associated uses to be developed and further detailed studies (i.e., traffic impact assessment, drainage reports, etc) will also be required.*

*The residential component of this designation is expected to accommodate a range of low and medium density residential uses. This may include the built forms of single and semi-detached dwelling, row housing, stacked row housing, and low-rise apartments. The residential density of these areas should strive to meet the same density planned in the balance of their NSPs or higher in order to meet the density targets assigned by the Capital Region Board to this portion of Edmonton.*

*The associated uses component of this designation acknowledges that the future development of low and medium density residential uses will require the development of supporting related uses. Associated uses included circulation (public road, walkways, lanes if necessary, etc), municipal reserve (parks), and public utility lots (stormwater management facilities, utility right-of-ways, lift stations if necessary, etc.).*

*The Future Residential and Associated Uses designation does not include an opportunity develop any type of commercial uses to support the future residential development, the respective neighbourhoods, or to the greater Big Lake area. Such a development proposal would necessitate an ASP amendment with sufficient rationale to support the re-designation of land for commercial uses in this area. Other non-residential uses, such as those prescribed in the Urban Services Zone of the Edmonton Zoning Bylaw (libraries, churches, community centres, etc) would also necessitate an ASP amendment.*

*Some of the lands designated Future Residential and Associated Uses within Trumpeter are encumbered by pipeline right-of-ways and abandoned wells. The future Trumpeter NSP amendment to undertake more detailed planning within the Future Residential and Associated Uses area shall investigate these encumbrances and appropriately incorporate them and their setbacks, if applicable, into the design*

*of the residential area.*

*As the future Residential and Associated Uses areas are adjacent to a regional sewer line and power corridor, the more detailed planning at the future NSP amendment stages for both neighbourhoods shall require consultation with the Alberta Capital Region Wastewater Commission (ACRWC) and AltaLink on any applicable setback requirements or any additional right-of-way requirements. This will ensure these facilities are protected from incompatible development and that additional land for regional infrastructure is identified, if necessary.*

#### **6.4 OPEN SPACE/PARK SYSTEM**

The components of the open space/park system includes areas of land within the NSRVARP, combined school park sites, neighbourhood parks, pedestrian walkways and an existing golf course.

111.14 ha (274.62 ac) of Municipal Reserve have been proposed within the plan area. This Municipal Reserve land consists of nine sites, some of which are joint school park sites. A portion designated natural maintenance area is included in the municipal reserve.

*(Paragraph deleted by Bylaw 15546, September 13, 2010)*

*Bylaw 14802  
January 14, 2008*

Further to the above, a large area of land 63.81 ha (157.67 ac) located in the northeast portion of the plan area adjacent to the major arterial road has been identified as being environmentally sensitive. The City will attempt to acquire these lands as Municipal Reserve. *This area reflects the Big Lake Management Plan which designates these lands as a combination of Natural Conservation Area and Natural Maintenance.* This area reflects the Big Lake Management Plan which designates these lands as a combination of Natural Conservation Area and Natural Maintenance. These lands will be utilized as areas of active and passive recreation providing a large regional park within close proximity to Big Lake. The lands represent areas of severe development limitations potentially due to soil limitations and/or sensitive vegetation and wildlife. It must be ensured that future use and development of these areas is in harmony with its identified sensitivity relating to soils, vegetation and/or wildlife. The importance of these lands has been explained in previous sections.

*Bylaw 15986  
Jan. 30, 2012*



It should be noted that the total Municipal Reserve lands proposed consist of 111.14 ha (274.67 ac), which is in excess of the 10% allowable pursuant to the Planning Act of 75.0 ha (185.32 ac). Should the Provincial Government or the City of Edmonton be unable to purchase the entire 63.81 ha (157.67 ac) of those lands designated as Natural Maintenance pursuant to the Big Lake Management Plan, these lands may be developed as low density residential.

*Another integral component of the open space system is those lands delineated as Natural Conservation Area, which includes Environmental Reserve (ER). The plan designates 173.3 ha (428.2 ac) as Natural Conservation Area. All of those lands included with the statistics of the five neighbourhoods will be dedicated as ER. For those lands within the balance of the ASP, only the portion of those lands below the top-of-bank can be dedicated as ER. The Natural Conservation Area lands consist of sensitive areas contained within the boundary of the NSRVARP and designated areas of natural conservation under the Big Lake Management Plan. The sensitivity of and reason for preservation of these lands has been previously indicated in Section 3.5. These lands will be surveyed in detail in conjunction with the Sustainable Development Department, the Asset Management and Public Works Department and an independent environmental consultant at the Neighbourhood Structure Plan stage. Those lands deemed Environmental Reserve will be acquired by the municipality upon subdivision in accordance with Section 98 of the Planning Act. Those lands not deemed ER may be acquired by the City through other means, of which some could be dedicated as Municipal Reserve.*

*Bylaw 15986  
Jan. 30, 2012*

*Amended by Editor*

*Bylaw 15986  
Jan. 30, 2012*

As well, it should be mentioned that the Big Lake Plan area contains the Glendale Golf and Country Club. This facility consists of 18 holes of golf, a clubhouse and associated maintenance buildings.

Pedestrian walkways also form part of the open space system. However, as they serve an important function with respect to circulation, their discussions is contained within Section 6.6.

Additional parkland may be identified at the Neighbourhood Structure Plan stage.

The City has the option of redefining Municipal Reserve requirements (other than those required for school/park purposes) at the NSP stage.

## **6.5 SCHOOLS AND INSTITUTIONS**

School sites are a dominant factor in establishing the configuration of residential neighbourhoods.

*(Paragraph deleted by Bylaw 15546, September 13, 2010)*

*Bylaw 14802  
January 14, 2008*

The size of the sites has been determined in conjunction with the Public and Separate School Boards and the *Asset Management and Public Works* Department.

*Amended by Editor*

The exact location of the school sites and frontage for school sites will be addressed in detail at the Neighbourhood Plan stage and will be in accordance with the School Boards and *Asset Management and Public Works* Department requirements. No utilities or pipeline corridors of any kind will be permitted to bisect school or park lands and all sites shown will be serviced by the Developer at no cost to the City.

*Amended by Editor*

It should be noted that the Edmonton Public School Board have requested that educational facilities be provided on the basis of a two tier system (Elementary K-8, High School 9-12) as opposed to a three tier system (Elementary K-6, Junior High 7-9 and High School 10-12).

Other institutional uses will depend to a large degree on civic and provincial programs and policies at the time of development. Most uses, such as a police station, fire hall, library, social or health service centers, are to be located in Edmonton Communities to the south and east. Potential church sites are not specifically identified. The actual location of church sites will be identified at the Neighbourhood Structure Plan stage; depending on social and market requirements. Should it be determined that additional lands are required for other institutional uses such as police, firehall, and library sites, they will be identified at the NSP stage.

## **6.6 COMMERCIAL**

*Three commercial sites and three commercial/residential mixed use sites are proposed to serve the community level and neighbourhood needs of the plan area.*

*Bylaw 15546  
September 13, 2010*

*There are three neighbourhood sites totaling 4.2 ha, three neighbourhood mixed use sites (commercial component only) totaling 0.8 ha in size, and one community level site of 3.50 ha that will serve the shopping and local retail needs of the residents of Big Lake. The smaller sites will provide convenience commercial and neighbourhood service uses for the residents. No commercial uses may be developed within those lands designated Future Residential and Associated Uses without amendment to the ASP and the future Trumpeter NSP.*

## **6.7 CIRCULATION SYSTEM**

The circulation system proposed for the Big Lake Area is illustrated in the Area Structure Plan Development Concept - see Exhibit 6.

The transportation system within the plan area will consist of major arterial, major collector, minor collector and local roadways.

The plan will contain two major arterial roads through the plan area. The 215 Street (Winterburn Road) roadway extends northward from Highway 16 following the present alignment of Winterburn Road until the roadway reaches the north portion of the plan area. *The 2 land roadway then travels northeast parallel to the lake shore to the intersection of 137 Avenue and 199 Street. 137 Avenue enters the City of St. Albert east of the current intersection of 137 Avenue and 199 Street. Within St. Albert, it continues north of LeClair Way, eventually intersecting with Ray Gibbon Drive outside of the plan area to the north. (Sentence deleted by editor)*

*Amended by Editor*

*Bylaw 15986  
Jan. 30, 2012*

*Amended by Editor*

*A major collector roadway abuts the western boundary of the plan area following the present alignment of 231 Street. This roadway ends adjacent to the south shore of Big Lake. A turnaround will be provided to facilitate the termination of 231 Street. A second major collector roadway runs west to east, beginning at 231 Street and ending at 199 Street.*

*Bylaw 14802  
January 14, 2008*

A number of minor collector roadways are contained within the plan area. These roadways provide for the efficient circulation of traffic within the plan area. Looping of collector roadways has been proposed to provide for efficient movement of public transit. The plan provides sufficient exiting capacity from the loops. Furthermore, the

location of the collector roadway intersections on the arterial have been spaced so as not to prejudice the overall operation of the arterial roadway.

The southeast corner of the plan area contains a roadway which encroaches into the Transportation and Utility corridor. Ministerial consent from Alberta Environment is required prior to its development. Moreover, it must be noted that support in principle has been obtained from Alberta Environment.

All roadways within the plan area will be designed in accordance with City Engineering guidelines and standards. Where roadways cross lands designated Environmental Reserve, fill and culverts as opposed to structures, will only be permitted as an exception and in cases where it is supported by an Environmental Impact Assessment. Such an EIA must be completed at the N.S.P. stage. Furthermore, all crossings must be direct.

In keeping with existing City policy, pedestrians will use the local road pattern for the most part. Walkways will be restricted to short functional connections.

Walkways will be designed to minimize walking distance to transit stops particularly for the multi-family sites. The road pattern must take into account the routes residents require between their houses and the parks, schools, commercial areas and the bus routes. In this regard, special attention should be paid to pedestrian routes connecting the schools. Due to the proximity of the RDA to the plan area, screen fencing will be provided to restrict pedestrian access to the RDA. The pedestrian system will be further defined at the Neighbourhood Structure Plan stage.

The top-of-bank roadway policy will be implemented, where appropriate, at the neighbourhood stage.

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## 7.0 ENGINEERING AND UTILITY SERVICES

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### 7.1 GENERAL

This section of the Area Structure Plan describes the design concepts proposed for sanitary sewers and storm drainage systems, water supply and distribution and utility service including power, telephone and natural gas. *A Big Lake Area Master Plan amendment was reviewed and approved by the Drainage Services Branch of the Asset Management and Public Works Department in 2007, updating the servicing concept for the area.*

*Bylaw 14802  
January 14, 2008*

### 7.2 SANITARY DRAINAGE SYSTEM

The elements of the internal sanitary drainage basin shown on Exhibit 7 are as follows:

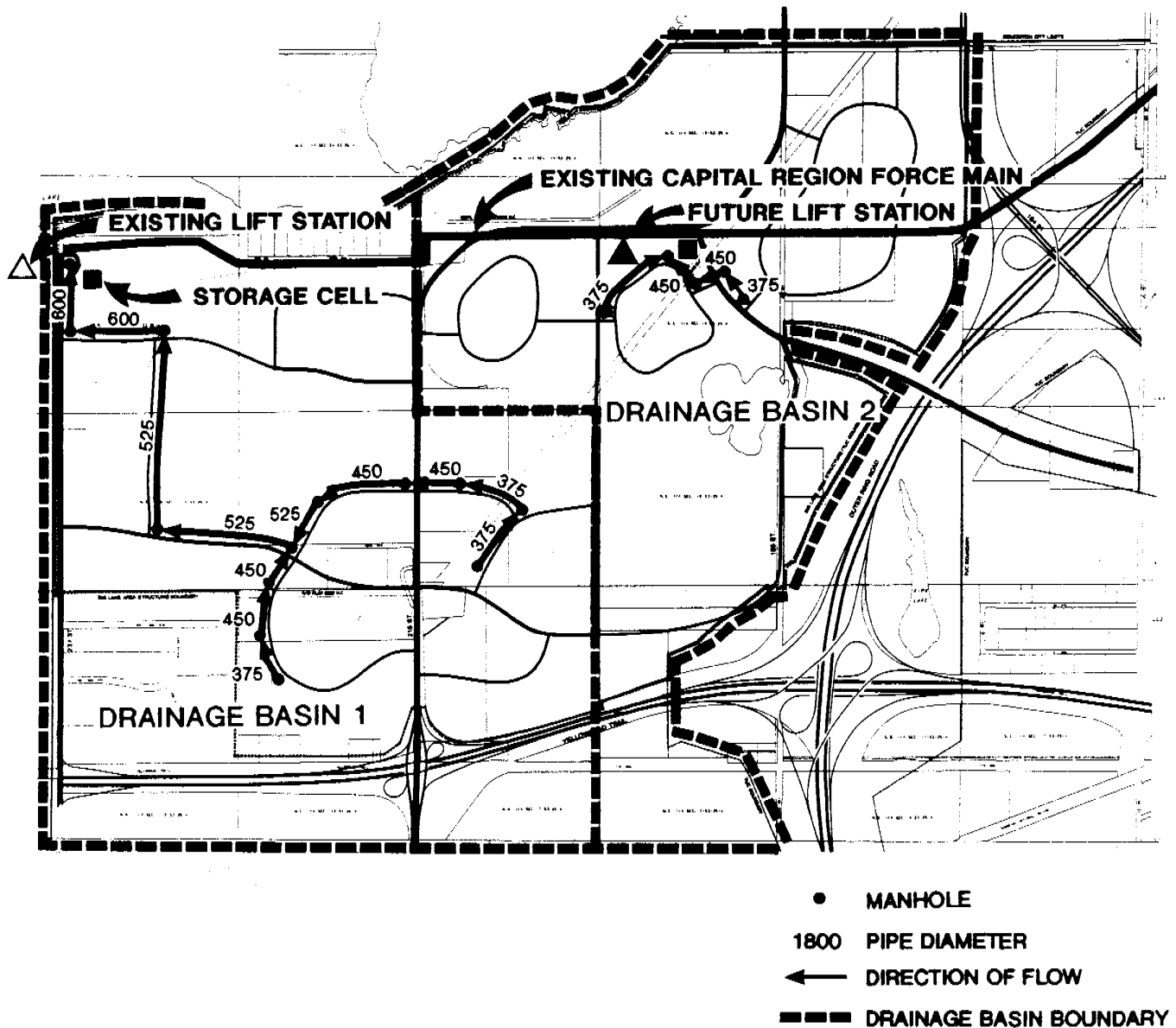
- The area has two drainage basins with *Winterburn Road* being approximately the common point.
- Each basin will have a gravity system draining to the lowest elevation in their basin.

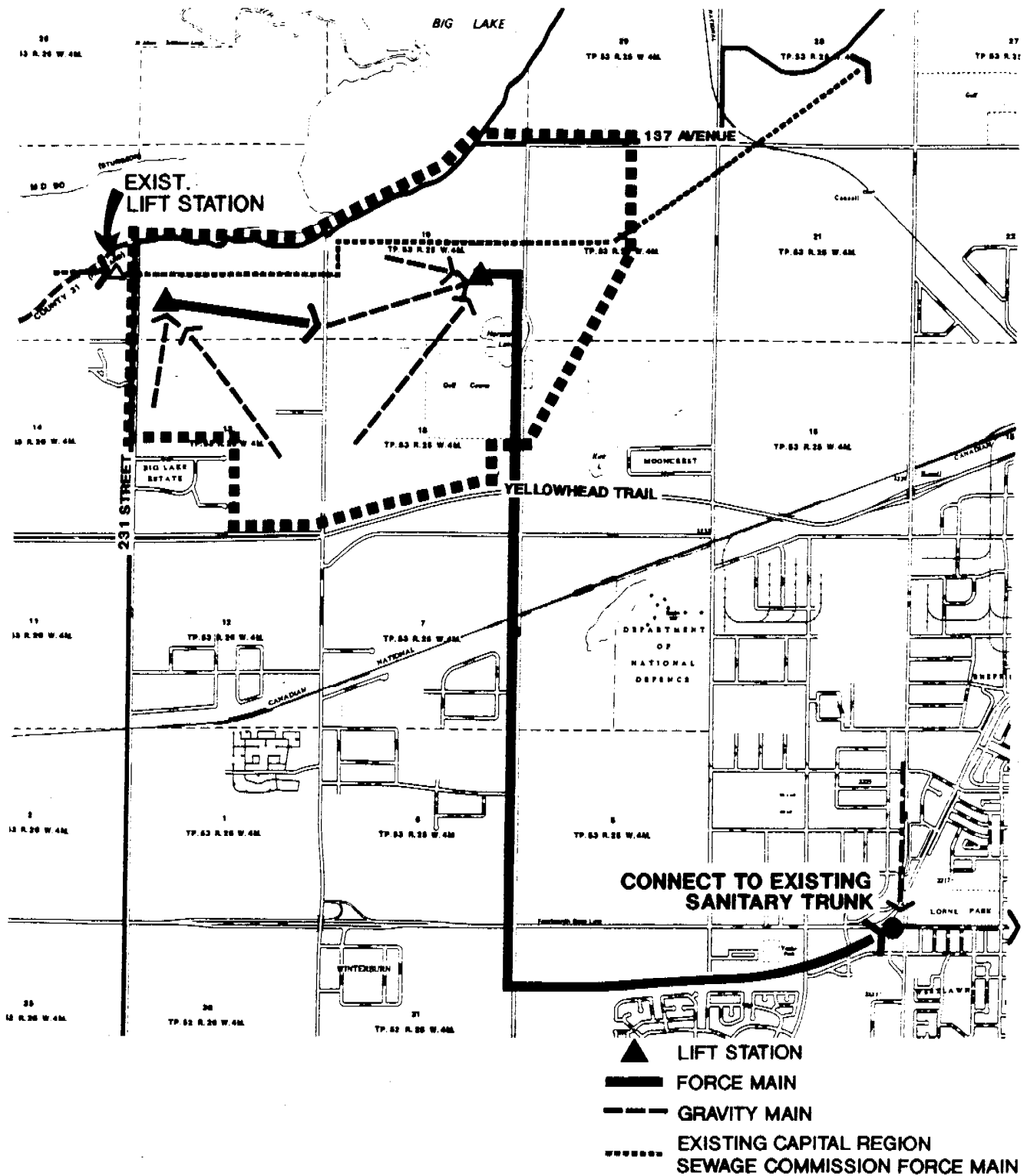
*Amended by Editor*

Two methods of discharge were examined in an Area Master Plan prepared by IMC Consulting Group and submitted to *the Drainage Services Branch* for review, comments and approval. The two methods are as follows:

*Amended by Editor*

- Connect to the adjacent and existing Capital Region Commission facilities. The west basin gravity system would connect to the existing lift station while the east basin gravity system would have a new lift station with a force main connected to the Commission forcemain.
- Discharge to the City of Edmonton existing sanitary sewer as shown on Exhibit 8. This alternative requires two new onsite lift stations due to topography and a very long forcemain to connect to the City of Edmonton infrastructure.





Order of magnitude costs for each alternative, not including maintenance and operating costs are as follows:

- Use Commission Facilities:

• Lift station, force main, storage	\$2,250,000
• Connection fee to commission	\$4,760,000
• Engineering & contingency	\$1,400,000
<b>Total</b>	<b>\$8,410,000</b>

- Use Existing City of Edmonton Facilities:

• Lift station @ 199 Street & 231 Street c/w storage	\$3,000,000
• Force mains	\$5,676,000
• Engineering & contingency @ 20%	\$1,735,000
<b>Total</b>	<b>\$10,411,000</b>

Note: Costs do not include an allowance for downstream upgrading of City of Edmonton infrastructure.

The alternatives were examined as to advantages and disadvantages as follows:

	<u><b>Advantages</b></u>	<u><b>Disadvantages</b></u>
• Utilizing Capital Region Sewage Commission Facility	<ul style="list-style-type: none"> <li>• Least cost</li> <li>• Low operating cost</li> <li>• Access to the system is readily available</li> <li>• Easily staged</li> </ul>	<ul style="list-style-type: none"> <li>• Requires an agreement with the Capital Region Sewage Commission</li> </ul>
• Utilizing City system with two pump stations	<ul style="list-style-type: none"> <li>• Uses City system with no other agency involved.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest cost</li> <li>• 2 lift stations to operate</li> <li>• Large number of easements are needed</li> <li>• High operating costs of lift station due to length of outfall line</li> <li>• More difficult to stage</li> <li>• Would impose additional burden on an already overtaxed infrastructure and Gold Bar Waste Treatment Plant</li> </ul>



The City of Edmonton is currently pursuing an agreement with the Capital Region Sewage Commission, which will allow utilization of their system. Capacity of the Big Lake area is not a constraint as outlined in the 7 June 1989 letter from Alberta Environment and enclosed in the appendix for reference.

The Capital Region Sewage Commission has advised that they are presently preparing a computer model that will determine the future upgrading and timing of some of their system based on the proposed needs of the City of Edmonton. This will provide a determination of costs and a potential customer contribution to finance future upgrading.

The City of Edmonton Draft Master Plan concludes that the Big Lake area is best serviced by a connection to the Capital Region Sewage Commission facilities and is presently providing flow data for Big Lake to the Commission for input into their model.

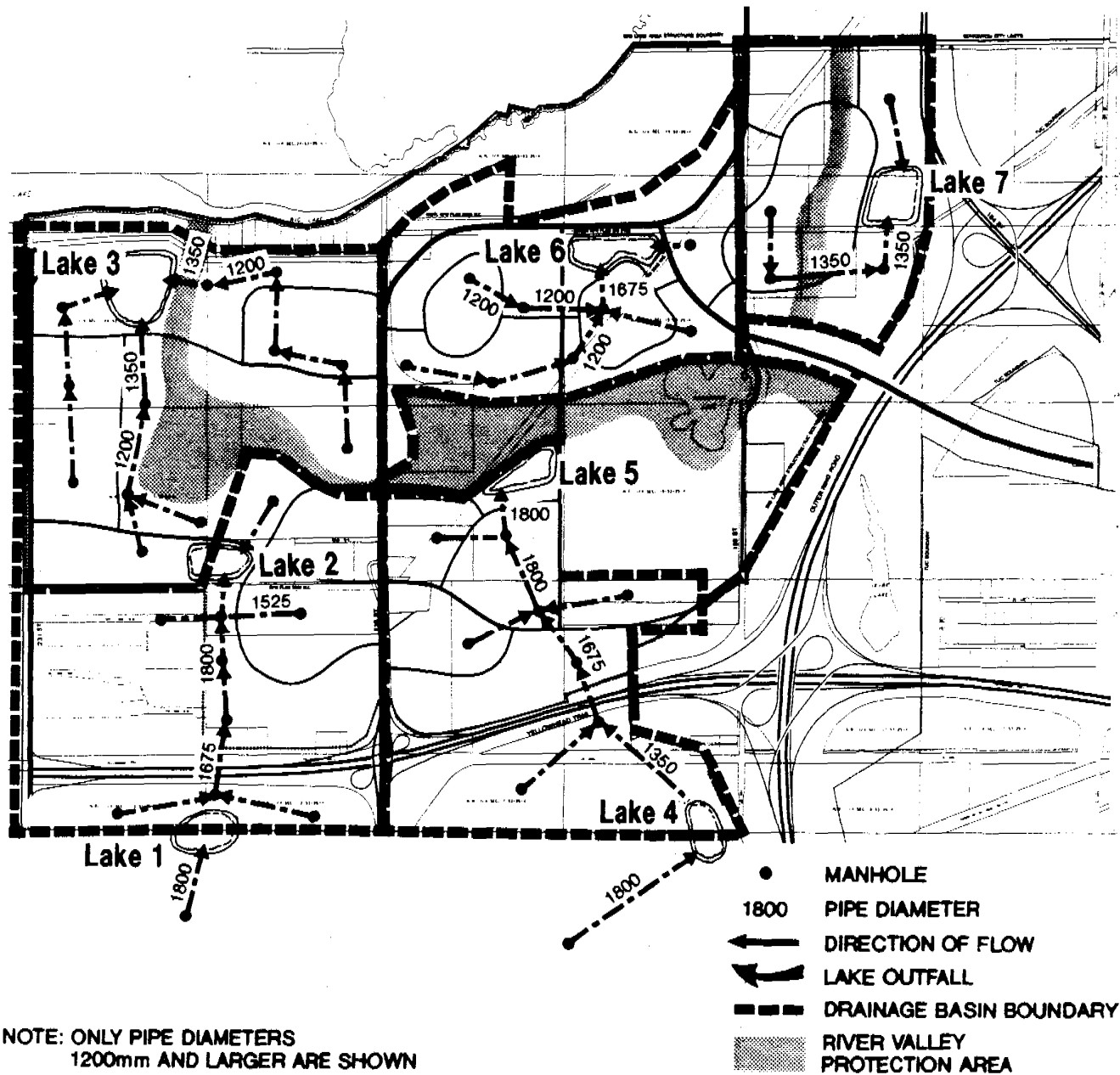
The City of Edmonton, *Drainage Services Branch*, has reviewed the design concept for sanitary drainage and finds it acceptable at the Area Structure Plan level. They have also advised that additional information will be required before the Neighbourhood Structure Plan stage.

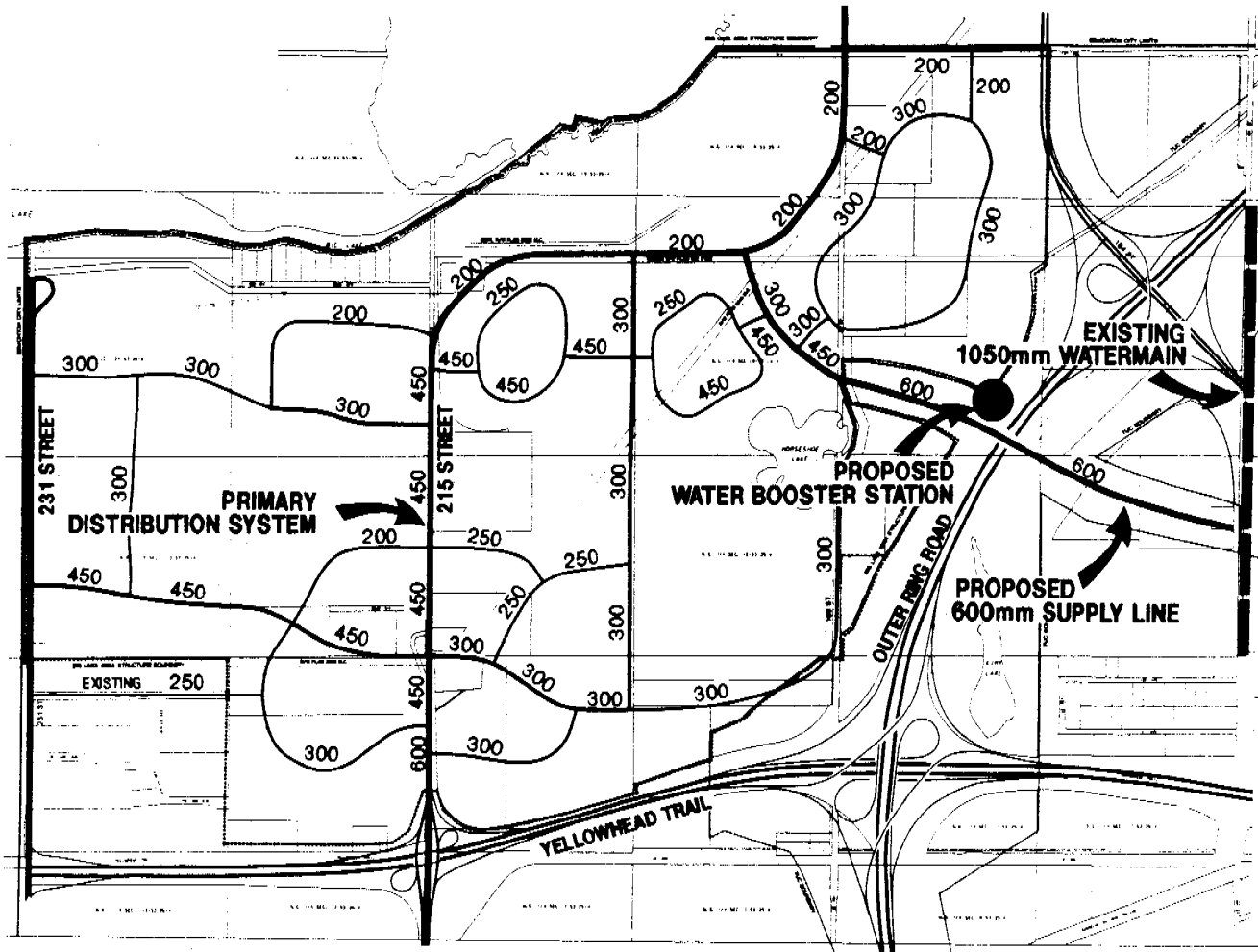
*Amended by Editor*

### **7.3 STORM DRAINAGE SYSTEM**

The natural runoff for stormwater from the plan area flows to the north and discharges to Big Lake. A smaller area within the larger drainage basin drains naturally to the existing Horseshoe Lake, which in turn overflows through a natural drainage channel to Big Lake.

The Big Lake plan area was included in a Watershed Study prepared by Marshall, Macklin and Monaghan in 1982 for the Northwest Annexation area. The study shows that the plan area is within the Big Lake drainage basin that encompasses an area of some 3,328 square kilometers of land. The plan area is about 8 square kilometers.





The study further advises that peak flows from the plan area, once developed, are far lower than the peaks generated from the entire Big Lake drainage basin and that the peak flows and volumes from the plan area pass through the Big Lake system before the basin peaks. The study concludes that direct discharge is possible without any changes in downstream conditions.

Although the Marshall Macklin study shows direct discharge is acceptable, alternatives for stormwater ponds were also offered. The stormwater pond design concept was selected for the plan area and supported by the Penner and Associates Environmental Evaluation of the Big Lake Area Structure Plan prepared in March 1990, mainly for the following reasons:

- To control flows to Big Lake to predevelopment rates.
- To provide a system that will detain flows and provide a facility to improve water quality from urban runoff, especially under low flow conditions from the frequent minor storm events.
- To use natural drainage courses to maintain their habitat and prevent disturbance of the Big Lake shoreline.

A hydrogeological evaluation of the study area was undertaken by A. D. Williams Engineering Ltd in March, 1990. The conclusions drawn in their report describe the suitability of the study area both as to groundwater conditions and stratigraphy. Their recommendations and conclusions are summarized as follows:

- The majority of the study area is suitable for the proposed subdivision development.
- The area within the River Valley Protection Area and a channel crossing the Glendale Golf Course were not recommended for development because of poor soils and high groundwater table.
- Isolated low areas were not recommended for development because of a high groundwater table. However, these areas are suitable for stormwater ponds because they possess a thick clay cap in the order of 4 to 5 meters.
- Surface clay soil is not prone to erosion so there would be no problem in using natural channels to handle stormwater flows.

An environmental evaluation of the study area was prepared by Penner and Associates Ltd. in March, 1990. They suggested measures to mitigate impacts and identified where more detailed assessments are required as planning proceeds to the neighbourhood and subdivision level. Their recommendations are as follows:

- No direct discharge to Big Lake, so the stormwater should be managed through a system of ponds discharging to natural channels.
- Use sediment traps at pipe inlets to the ponds.
- Provide erosion control during construction.
- Control the outflow to pre-development rates.

The proposed storm drainage system, also included in the Area Master Plan, is shown in Exhibit 9.

The system consists of an underground piped system (storm sewer trunks are shown on the Exhibit) that are routed to stormwater management ponds. The stormwater ponds are interconnected in some cases, and use natural stream courses in other cases, that ultimately discharge to Big Lake. Since Big Lake is within the jurisdiction of Alberta Environment, the Area Master Plan and support documents, such as the hydrological evaluation and the Environmental Assessment, were forwarded to them for review and comments. Their response can be summarized as follows:

- The overall design concept for storm drainage at the Area Structure Plan level are acceptable.
- Hydrology - the conceptual plan for managing stormwater does not present any concerns. Alberta Environmental wants to review and comment on the detailed drainage designs of the neighbourhoods as development proceeds in the area.
- River Engineering - since the flow released to Big Lake will not be increased beyond natural discharge rates, there is no concern in this area.
- Hydrogeology - requested additional information on the groundwater levels after development has occurred. This information is being provided.
- Environmental Evaluation - the evaluation was generally sufficient but will want to review and comment on the detailed plans for specific neighbourhoods. Additional information was requested on wildlife and

vegetation in the Big Lake Management Plan and this is being provided.

- A license to discharge to Big Lake is required under the Water Resources Act prior to construction of any stormwater facility that discharges to Big Lake.

A copy of Alberta Environment's correspondence is included as an appendix to this report.

As outlined in the Area Master Plan, the design criteria for planning the storm drainage system are as follows:

- Rational method for calculating the 5 year piped system.
- Storm pond sizing based on 120 mm of rainfall for the sub-basin area for conceptual design purposes.
- Discharge rates at 1.2 cm/sq. km from each pond for conceptual design purposes.

The conceptual design for storm trunk pipe diameters are shown on Exhibit 9.

The pertinent information for each pond is shown below:

**Pond Number 1**

- |  |       |        |
|--|-------|--------|
| • Drainage area                        | 121.6 | ha     |
| • Surface area at 100 year water level | 6.0   | ha     |
| • Normal water level                   | 689.0 | meters |
| • High water level                     | 692.0 | meters |
| • Discharge rate                       | 0.5   | cms    |
| • Drawdown time for 100 year storm     | 3.4   | days   |

**Pond Number 2**

- |  |       |        |
|--|-------|--------|
| • Drainage area                        | 92.0  | ha     |
| • Surface area at 100 year water level | 4.4   | ha     |
| • Normal water level elevation         | 683.0 | meters |
| • High water level                     | 686.0 | meters |
| • Discharge rate                       | 0.5   | cms    |
| • Drawdown time for 100 year storm     | 2.5   | days   |

**Pond Number 3**

- Drainage area 246.7 ha
- Surface area at 100 year water level 12.0 ha
- Normal water level 657.7 meters
- High water level 660.7 meters
- Discharge rate 1.0 cms
- Drawdown time for 100 year storm 3.4 hours

**Pond Number 4**

- Drainage area 198.4 ha
- Surface area at 100 year water level 9.5 ha
- Normal water level 676.0 meters
- High water level 679.0 meters
- Discharge rate 1.0 cms
- Drawdown time for 100 year storm 2.8 hours

**Pond Number 5**

- Drainage area 162.0 ha
- Surface area at 100 year water level 8.0 ha
- Normal water level 682.5 meters
- High water level 685.5 meters
- Discharge rate 1.0 cms
- Drawdown time for 100 year storm 2.3 days

**Pond Number 6**

- Drainage area 109.0 ha
- Surface area at 100 year water level 5.3 ha
- Normal water level 668.5 meters
- High water level 671.5 meters
- Discharge rate 1.0 cms
- Drawdown time for 100 year storm 1.5 days

**Pond Number 7**

- Drainage area 127.9 ha
- Surface area at 100 year water level 6.2 ha
- Normal water level 659.3 meters
- High water level 662.5 meters
- Discharge rate 1.0 cms
- Drawdown time for 100 year storm 1.8 days

The primary purpose of the stormwater management lakes is the attenuation of post-development stormwater flows, thereby providing optimum convenience to area residents and minimize or negate the impact on the receiving lakes and stream courses. A secondary function of the stormwater ponds, albeit no less important, serve to enhance the quality of water prior to its discharge into the natural receiving stream. Other, less important functions served by these ponds would be those such as increased neighbourhood aesthetics.

The proposed system of 7 stormwater ponds is the most technically and economically feasible option given the rolling topography of the Big Lake area. A reduced number of ponds would require the installation of deep storm sewer trunk mains in order to interconnect them, and an increase in size of each pond thereby resulting in increased construction and maintenance costs. An increase in the number of ponds would merely increase construction and maintenance costs and reduce the amount of developable land without achieving any noticeable benefit.

In addition, this system of 7 stormwater ponds allows the greatest flexibility when determining the development sequencing for the Big Lake area. From studying Exhibit 9 it can be seen that development could commence in any one of the areas serviced by any one of Lakes 2, 3, 5, 6 or 7 without impacting on the natural stormwater flow in the surrounding areas.

The location selected for Pond No.3 was mentioned in the environmental evaluation prepared by Penner and Associates Ltd. in March, 1990. Basically, they stated that the main constraint on using this site for a stormwater management pond was the 1:100 year flood elevation of Big Lake (654.15 m). Since the pond is located above this elevation, it is feasible to locate it there. Also, Penner stated that due to the low gradient at this site, stormwater discharges to Big Lake would produce little or no channel bed erosion.

The area directly north of Pond 3 has a low gradient sloping toward Big Lake and is well treed. Therefore, the stability of this slope should not pose a difficulty with respect to locating the pond at that site. However, a much more detailed geotechnical



assessment of the area must be undertaken at the Neighbourhood Structure Plan stage in order to more accurately determine its suitability.

It will be noted from Exhibit 9 that the majority of overland flow, which previously discharged to the natural stream courses, is now to be diverted away and flow into the stormwater ponds. This resulted in the natural stream courses only carrying a fraction of the flow they used to and raised concerns from Alberta Environment in regards to possible negative ecological and groundwater impacts on the stream courses (River Valley Protection Area). Consequently, in order to address these concerns, Ponds 2 and 5 will discharge into the natural drainage courses. The pollution of the stream courses was not viewed as a problem by Alberta Environment because most pollutants from urban development become trapped in the sediments which are washed from the streets. Since the majority of overland flows would pass through stormwater management ponds prior to discharging into the natural streams, and the ponds would remove the majority of sediments, the pollution threat to the stream courses is minimized.

Special mention is necessary with regards to the matter of water quality of storm runoff. As indicated, one of the reasons a system of ponds was selected for the drainage system was to be able to improve the water quality of storm runoff. The ponds will be designed with sediment traps to capture suspended matter in the water. This is important during low flow conditions which are most frequent and normally carry heavy sediment loads. Ponds will be discharged via natural stream courses which will further reduce contaminants before reaching Big Lake. It should be noted that special care will be taken during the course of construction to minimize dirt, etc., entering the storm system and ultimately reaching the ponds. The ponds also provide the capability to allow aeration systems or similar oxygen generating systems to keep the stormwater fresh. Water quality monitoring of the ponds can be undertaken and measures taken, if necessary, to maintain an acceptable water quality.

Big Lake will receive flow from 4 stormwater ponds. Following is the summary of those flows based on a 1 in 5 year storm.

- Pond 2 will discharge directly in the natural stream course. At this point of discharge of Pond 2 (max = 1.0 c.m.s.) the natural stream will be carrying approximately 1.60 c.m.s. at a velocity of 0.30 m/s.
- At this point where Pond 3 discharges (max = 1.0 c.m.s.) natural stream will be carrying 2.20 c.m.s. at a velocity of 0.30 m/s.
- This flow then discharges into Big Lake via the natural stream course.
- Pond 6 discharges (max = 1.0 c.m.s.) into Big Lake via a natural stream which will carry approximately 1.05 c.m.s. at a velocity of 0.20 m/s at the point where the pond discharges.
- Pond 7 discharges (max = 1.0 c.m.s.) into a natural stream course and at the point of the pond's discharge the stream will be carrying 1.20 c.m.s. at a velocity of 0.40 c.m.s.

Horseshoe Lake will receive a flow from the natural stream, including the discharge from Pond 5 (max = 1.0 c.m.s.) of about 1.85 c.m.s. at a velocity of 0.10 m/s. The low velocity is due to the fact that the stream course in this area is very wide with a very gradual gradient.

The City of Edmonton Drainage *Services Branch*, have reviewed the Area Master Plan and advise that the design concepts are acceptable at the Area Structure Plan level. The review also requires revisions to the Area Master Plan and further advises that the report will be approved before the Neighbourhood Structure Plan stage.

*Amended by Editor*

The Big Lake Area Structure Plan has a topography that allows for the provision of an economical storm drainage system. A high capacity receiving stream is available, namely Big Lake. And finally, and most important, the plan area can be serviced with storm drainage without using any of the existing City of Edmonton infrastructure.

#### **7.4 WATER SUPPLY AND DISTRIBUTION**

A water network analysis was performed on the plan area by IMC Consulting Group and submitted to Environmental Services that was based on the following:

- The plan area will first be supplied from a new 600 mm water transmission main connected to the existing City of Edmonton 1050 mm watermain on 184

Street. The alignment of the new transmission main is proposed to be within the future 127 Avenue right-of-way. Once the detailed engineering drawings are prepared, an easement will be requested from the Province of Alberta to accommodate the alignment.

- Water supply will be reinforced by connections to future water trunk lines proposed within the outer ring road in about 1997 and Yellowhead Trail and *Winterburn Road* in about 2005. The lines are anticipated to be 1350 mm and 600 mm respectively.
- The initial 600 mm water transmission main and capacity of the existing 1050 mm watermain on 184 Street is sufficient to supply the entire plan area, but a booster station with an ultimate capacity of about 570 l/s is required to provide adequate onsite pressure for domestic and fire flows.
- The onsite system will consist of pipe sizes ranging from 200 mm to 450 mm.
- The first phase of development will be located on the west side of 191 Street and just north of Horseshoe Lake. The 600 mm supply line and booster station can adequately supply this phase although onsite internal looping is required at both the Neighbourhood Plan and Subdivision level (up to 20 lots).

*Amended by Editor*

The watermain system as described is shown on Figure 10 including a proposed location of the Public Utility Lot for the booster station and the proposed first stage of development.

*The former* Public Works, Water Branch reviewed the Water Network Analysis and find the design concept to be acceptable. Detailed design of the water distribution system will be undertaken as part of the NSP process.

*Amended by Editor*

Financing of the construction of the 600 mm water supply line and booster station will be in accordance to the City of Edmonton policy, where pipe larger than 450 mm are front-ended by the developers and repaid by the City once the facilities are constructed.

## 7.5 UTILITY SERVICES

Utility services include the provision of power, telephones and natural gas to the plan area.

*EPCOR Distribution (formerly Edmonton Power)* has adequate electrical capacity to the mid 1990's, at which time a new substation will be required. Communication with Edmonton Power will be maintained through the course of the planning process which will accommodate their requirements as to timing and location of the substation.

*Amended by Editor*

Power servicing will be designed to City of Edmonton standards and *EPCOR (formerly Edmonton Power)* will be provided with all technical studies that pertain to the design. The land owners will be responsible for all costs for temporary power and modifications to existing facilities, if required.

*Amended by Editor*

*Telus (formerly ED TEL)* has capacity to supply the plan area for some time into the future. A switching station is required, but the timing and location will be determined as development plans are formulated. *Telus (formerly ED TEL)* will be kept informed by virtue of the planning process.

*Amended by Editor*

*A private corporation (gas pipeline)* will supply the area from existing facilities at 170 Street and 114 Avenue. Sufficient lead time for scheduling of construction will be provided to ensure gas lines are in place for onsite developments. *The private corporations'* design standards will be followed.

*Amended by Editor*

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## **8.0 IMPLEMENTATION OF THE DEVELOPMENT**

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### **8.1 GENERAL**

The previous sections indicate the proposed servicing schemes for the area. It is anticipated that the development area will take approximately 15 - 20 years to develop totally.

### **8.2 STAGING**

It is anticipated that the Big Lake Area Structure Plan will absorb approximately 200 single family detached and semi-detached homes and approximately 75 multiple family units per year. The magnitude of growth may vary dependent on growth rates generally on a city wide basis.

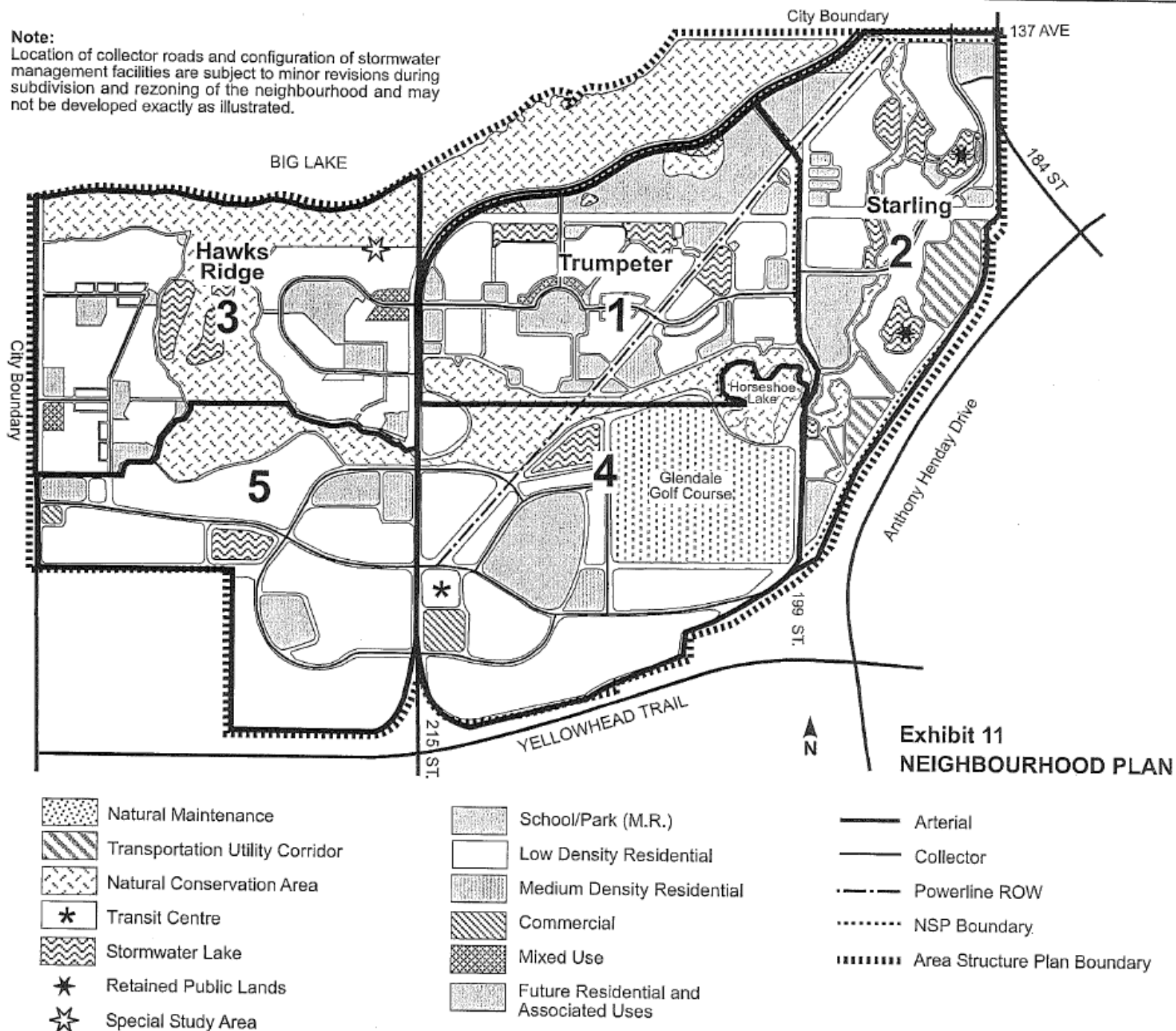
Portions of neighbourhoods 1 & 2 may be developed independently or concurrently with additional phases being added each year. Development within the neighbourhoods will depend on the logical extension of servicing patterns as identified in the previous section.

Generally development will commence from the northern sub-areas and progress south and westward (See Exhibit 11). Development will proceed based on servicing availability and market considerations.

Based on current marketing strategies, individual phases of development will be relatively small in terms of land area and number of residential lots.

The detailed staging of development within the Big Lake Area will be determined at the Neighbourhood Structure Plan level.

**Note:**  
Location of collector roads and configuration of stormwater management facilities are subject to minor revisions during subdivision and rezoning of the neighbourhood and may not be developed exactly as illustrated.



**Exhibit 11  
NEIGHBOURHOOD PLAN**

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## APPENDIX 1

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TABLE 2

**BIG LAKE AREA STRUCTURE PLAN  
LAND USE STATISTICS – BYLAW 16067**

**Land Use Statistics**

	Total	Neighbourhood					Special Study Area	Balance of ASP
		One	Two *	Three *	Four	Five		
<b>Gross Area</b>	<b>889.8</b>	<b>159.9</b>	<b>132.1</b>	<b>163.2</b>	<b>193.6</b>	<b>175.0</b>	<b>1.0</b>	<b>65.0</b>
Powerline ROW	12.7	5.0	2.2	2.0	3.5	-	-	-
Sewer ROW	10.1	3.3	2.0	4.8	-	-	-	-
ER (Natural Conservation)	173.3	19.9	14.8	49.0	-	32.0	-	57.6
Transportation Utility Corridor	14.6	-	14.6	-	-	-	-	-
Arterial Road Widening	19.3	4.8	0.7	3.2	1.6	1.5	-	7.4
<b>Gross Developable Area</b>	<b>659.9</b>	<b>126.9</b>	<b>97.7</b>	<b>104.2</b>	<b>188.5</b>	<b>141.5</b>	<b>1.0</b>	<b>0.0</b>
Glendale Golf Course	53.9	-	-	-	53.9	-	-	-
Circulation Total	89.7	25.6	13.9	20.9	1.0	28.3	-	-
Stormwater Management	46.5	11.0	10.6	7.0	8.0	9.9	-	-
Natural Maintenance	2.4	-	2.4	-	-	-	-	-
School/Park	55.5	11.7	12.4	8.8	10.6	12.0	-	-
Commercial	4.8	0.5	-	-	3.5	0.8	-	-
Mixed Use Non-Residential	0.9	0.2	-	0.7	-	-	-	-
Transit	2.7	-	-	-	2.7	-	-	-
Special Study Area	1.0	-	-	-	-	-	1.0	-
<b>Total Non-Residential</b>	<b>306.0</b>	<b>49.0</b>	<b>39.3</b>	<b>37.4</b>	<b>119.6</b>	<b>59.7</b>	<b>1.0</b>	<b>0.0</b>
Low Density Residential	307.7	48.5	46.1	56.8	74.5	81.8	-	-
Medium Density Residential	17.7	13.0	-	4.7	-	-	-	-
Medium Density Residential (RF5/RF6)	12.5	-	6.6	-	3.1	2.8	-	-
Medium Density Residential (RA7)	5.7	-	3.0	-	-	2.7	-	-
Street Oriented Residential	5.4	2.1	-	3.3	-	-	-	-
Mixed Use Residential	3.0	1.0	-	2.0	-	-	-	-
Future Residential and Associated Uses	16.3	13.5	2.8	-	-	-	-	-
<b>Total Residential</b>	<b>368.3</b>	<b>78.0</b>	<b>58.5</b>	<b>66.8</b>	<b>77.6</b>	<b>87.3</b>	<b>0.0</b>	<b>0.0</b>



## Residential Unit Count Statistics

Residential Type	units /ha	Total		Neighbourhood									
				One		Two *		Three *		Four		Five	
		Units	%	Units	%	Units	%	Units	%	Units	%	Units	%
Low Density Residential	22	6,769	62%	1,066	37%	1,153	57%	1,421	63%	1,639	93%	1,800	80%
Medium Density Residential	90	1,592	15%	1,169	41%	--	0%	424	19%	--	0%	--	0%
RF5/RF6	42	525	5%	--	0%	297	17%	--	0%	130	7%	118	5%
RA7	125	708	7%	--	0%	265	13%	--	0%	--	0%	338	15%
Street Oriented Residential	35	188	2%	72	3%	--	0%	147	7%	--	0%	--	0%
Mixed Use Residential	125	371	3%	121	4%	--	0%	249	11%	--	0%	--	0%
Future Residential and Associated Uses**	varies	669	6%	421	15%	248	13%	--	0%	--	0%	--	0%
<b>Total</b>		<b>10,822</b>	<b>100%</b>	<b>2,850</b>	<b>100%</b>	<b>1,963</b>	<b>100%</b>	<b>2,241</b>	<b>100%</b>	<b>1,769</b>	<b>100%</b>	<b>2,255</b>	<b>100%</b>

## Residential Population Statistics

Residential Type	persons /unit	Total	Neighbourhood				
			One	Two *	Three *	Four	Five
Low Density Residential	2.8	18,953	2,985	3,228	3,979	4,589	5,039
Medium Density Residential	1.6	2,547	1,871	--	678	--	--
RF5/RF6	1.9	998	--	832	--	247	223
RA7	1.5	1,061	--	477	--	--	506
Street Oriented Residential	1.9	357	138	--	280	--	--
Mixed Use Residential	1.5	557	182	--	373	--	--
Future Residential and Associated Uses**	varies	1,401	955	446	--	--	--
<b>Total</b>		<b>25,874</b>	<b>6,130</b>	<b>4,983</b>	<b>5,310</b>	<b>4,837</b>	<b>5,769</b>

## Student Generation Statistics

Level	Total	Neighbourhood				
		One	Two *	Three *	Four	Five
Public Elementary	1,248	245	209	208	341	245
Public Junior High School	625	123	105	104	170	123
Public Senior High School	625	123	105	104	170	123
Separate Elementary	507	123	105	83	114	82
Separate Junior High School	253	61	52	42	57	41
Separate Senior High School	253	61	52	42	57	41
<b>Total</b>	<b>3,511</b>	<b>736</b>	<b>628</b>	<b>584</b>	<b>908</b>	<b>655</b>

\* Calculations for Neighbourhoods Two and Three are based on density and population projection standards of the 2010 Terms of Reference for the Preparation and Amendment of Residential Neighbourhood Structure Plans.

\*\* Calculations for "Future Residential and Associated Uses" derived from the land use statistics of the Trumpeter and Starling NSPs.

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## APPENDIX 2

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**LAND OWNERSHIP** (as amended by Editor)

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<b>No.</b>	<b>Legal Description</b>	<b>Owner</b>	<b>Title No.</b>
1.	NW1/4 20-53-25-4	<i>private corporation</i>	852120084
2.	Lot A, Plan 1456 R.S.	<i>private owner(s)</i>	17-S-247
3.	Lot R, Plan 1456 R.S.	City of Edmonton	842224812
4.	Lot B, Plan 1456 RS.	<i>private owner(s)</i>	862101213
5.	Lot C, Plan 1456 R.S.	<i>private owner(s)</i>	121-S-263
6.	SW 1/4 20-53-25-W4	<i>private corporation</i>	822131775
7.	Lot 1A, Plan 4291 R.S.	<i>private owner</i>	1-Y-246
8.	N1/2 19-53-25-4	<i>private corporation</i>	229-R-150
9.	SE 1/4 19-53-25-W4	<i>private corporation</i>	892133509+ 1
10.	SW1/4 19-53-25-W4	<i>private corporation</i>	892133509
11.	SW1/4 19-53-25-W4	<i>private owner</i>	842218325
12.	NW 18-53-25-W4	<i>private owner</i>	165-V-168
13.	NW1/4 18-53-25-W4	<i>private owner(s)</i>	10-L-239
14.	Lot A, Plan 874 N.Y.	<i>private owner</i>	772102909
15.	Lot B, Plan 874 N.Y.	<i>private owner</i>	762068067
16.	Lot R, Plan 874 N.Y.	City of Edmonton	852175198
17.	NE 1/4 18-53-25-W4	<i>private corporation</i>	6-Y-198
18.	Lot 1, Plan 872 1705	<i>private owner(s)</i>	892159064
19.	SW1/4 24-53-26-W4	<i>private owner(s)</i>	762094529A
20.	SE1/4 24-53-26-W4	<i>private owner(s)</i>	762094529

<b>No.</b>	<b>Legal Description</b>	<b>Owner</b>	<b>Title No.</b>
21.	Lot 1, Plan 7550 U	<i>private corporation</i>	802007801
22.	Lots 2&3, Plan 7550 U	<i>private owner</i>	762054294
23.	Lot 4, Plan 7550 U	<i>private owner(s)</i>	782243686
24.	Lot 5, Plan 7550 U	<i>private owner(s)</i>	782243686A
25.	Lot 6, Plan 7550 U	<i>private owner(s)</i>	782243686B
26.	Lot 7, Plan 7550 U	<i>private owner(s)</i>	782243686C
27.	Lot 8, Plan 7550 U	<i>private owner(s)</i>	782243686D
28.	Lot 9, Plan 7550 U	<i>private owner(s)</i>	782243686E
29.	Lot 10, Plan 7550 U	<i>private owner(s)</i>	782243686F
30.	Lot 11, Plan 7550 U	<i>private owner(s)</i>	782243686G
31.	NW1/4 13-53-26-W4	<i>private corporation</i>	792053780
32.	NE1/4 13-53-26-W4	<i>private corporation</i>	792053780A
33.	Lot 2, Plan 4636 M.C.	<i>private corporation</i>	852104930
34.	SE 1/4 13-53-26-W4	<i>private owner(s)</i>	822033821
35.	Lot E, Plan 314 R.S.	<i>private owner(s)</i>	762062558
36.	Lot C, Plan 6068 R.S.	<i>private corporation</i>	792050715
37.	Lot A, plan 6110 K.S.	<i>private owner</i>	172-U-176
38.	Lot B, Plan 6110 K.S.	Province of Alberta	912168261+1
39.	NW 1/4 17-53-25-W4	<i>private owner(s)</i>	802109364
40.	NW 1/4 17-53-25-W4	<i>private corporation</i>	41-T-259
41.	Parcel A, Plan 1047 KS	<i>private corporation</i>	912140290 912140259

<b>No.</b>	<b>Legal Description</b>	<b>Owner</b>	<b>Title No.</b>
42.	Pt. NW 17-53-25-W4	Province of Alberta	802083144
43.	Pt. of NW & NE 1/4 24-53-26-4	<i>private owner(s)</i>	125-F-271
44.	Pt. SW1/4 18-53 25-4	<i>private corporation</i>	782173445
45.	Lot 1A, Block A, Plan 9021876	<i>private owner(s)</i>	902199041
46.	Lot 1B, Block A, Plan 9021876	<i>private owner(s)</i>	902224672
47.	Lot 1, Block 1 Plan 8821424	<i>private owner(s)</i>	902187290
48.	Lot D, Plan 5638 M.C.	<i>private owner(s)</i>	822146077
49.	Lot B, Plan 953 M.C.	<i>private owner</i>	902114693
50.	Lot A, Plan 6472 KS.	<i>private owner(s)</i>	822126451
51.	Pt. SE 1/4 18-53-25-4	Province of Alberta	852070752 902004989
52.	Lot C, Lot R, Plan 954 M.C.	Province of Alberta	762068708 812215749
53.	Pt. SW 1/4 20-53-25-W4	<i>private owner(s)</i>	160-1-260

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## APPENDIX 3

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ENVIRONMENT  
Environmental Protection Services  
Standards and Approvals Division  
Municipal Branch

RECEIVED JUN 12 1989

9620 - 106 Street, Edmonton, Alberta, Canada T5K 2J6 403/427-6877 Fax 403/422-4182

June 7, 1989

FYN Engineering Limited  
P.O. Box 150  
WINTERBURN, Alberta  
T0E 2N0

Attention: Mr. Larry Semenluk, P. Eng.

Dear Mr. Semenluk:

RE: Minutes of Meeting, May 30, 1989  
Discharge to Capital Regional Plant

Thank you for forwarding the minutes of the above meeting. As I indicated to you over the telephone, Item 2 does not reflect correctly the discussion on connecting the lift station into the existing forcemain. Alberta Environment will not undertake any research or establish design parameters for the proposed connection. It is up to the Capital Regional Commission and the owner of the lift station (the City) to work out an agreement to discharge sewage into the Regional System. It is anticipated that the proposed connection will not unduly affect the design capacity of the forcemain. So long as the design is acceptable to the Regional Commission and generally meets our guidelines, Alberta Environment will have no problem approving the project.

Yours truly,

Karu Chinniah, M.Sc., P. Eng.  
Regional Engineer  
Municipal Branch

cc: Gord Thompson, P. Eng., Capital Regional Commission

a1/9685C

16 March 1990  
File: E20071-1

Dear Sir:

**Reference: Big Lake Area Structure Plan**

Attached you will find a copy of the land use concept map for the above noted Area Structure Plan. The plan has been developed as a result of engineering and environmental studies undertaken and comments received from the City Planning Department's circulation of the original plan.

Your comments or concerns would be appreciated on or before 27 March 1990 (Phone 424-2002 or Fax 424-7766).

Sincerely,

**IMC CONSULTING GROUP INC.**

Ray Watkins  
Consultant

RW/lw  
bl-16mr

Attachment



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## **APPENDIX 4**

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**WELL LOCATION AND STATUS**  
(Amended by Editor)

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<u>Location</u>		<u>Status</u>
1. L.S.D.5	SEC.24-53-26-4	ABD*
2. L.S.D. 4	SEC.24-53-26.4	ABD
3. L.S.D.8	SEC. 24-53-26-4	ABD
4. L.S.D. 1	SEC.24-53-26-4	ABD
5. L.S.D. 8	SEC. 13-53-26-4	ABD
6. L.S.D. 10	SEC. 13-53-26-4	ABD
7. L.S.D. 12	SEC. 13-53-26-4	ABD
8. L.S.D. 13	SEC. 13-053-26-4	ABD
9. L.S.D. 14	SEC. 13-053-26-4	ABD
10. L.S.D. 13	SEC. 20-53-25-4	ABD
11. L.S.D. 10	SEC. 19-53-25-4	ABD
12. L.S.D.7	SEC. 18-53-25-4	ACTIVE PUMPING
13. L.S.D. 4	SEC. 18-53-25-4	ABD
14. L.S.D. 13	SEC.18-53-25-4	ABD
15. L.S.D.4	SEC. 19-53-25-4	ABD
16. L.S.D. 5	SEC. 19-53-25-4	ABD

\* ABD - Abandoned