

Bulyea Heights Neighbourhood Structure Plan

Office Consolidation December 2006

Prepared by:

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

Bylaw 8095 was adopted by Council in February 1986. In December 2006, this document was consolidated by virtue of the incorporation of the following bylaws:

- Bylaw 8095* Bylaw 8095 (Approved on February, 11, 1986 (to adopt the Bulyea Heights Neighbourhood Structure Plan)
- Bylaw 8578* Approved on June 23, 1987 (to delete the proposed RF4 (Semi-detached Residential) and RF5 (Row Housing) from a 2.00 ha area at the southern end of the neighbourhood, as well as to delete the proposed RF5 from a 1.74 ha parcel in the centre of the neighbourhood to create single detached residential sites)
- Bylaw 9422* Approved on March 27, 1990 (to change the wet pond stormwater management facility to a dry pond facility)
- Bylaw 11308* Approved on August 12, 1996 (to change the designation of a 1.82 ha area located adjacent to the dry pond storm water management facility from Row Housing to Single Detached Residential)
- Bylaw 14442* Approved on December 12, 2006 (to accommodate row house development for first time homebuyers on a vacant surplus school building envelope located on a school/park site)

Editor's Note:

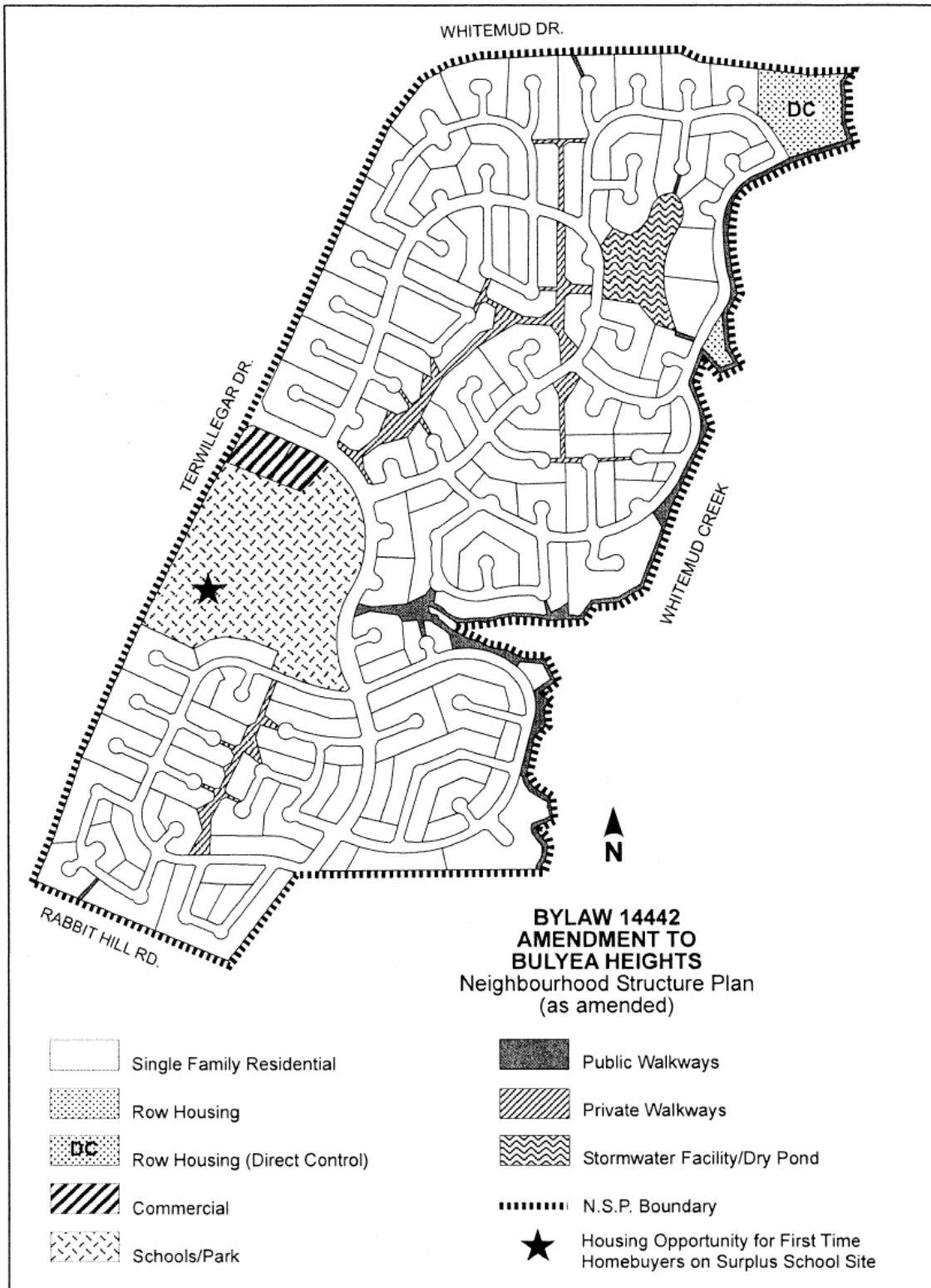
This is an office consolidation edition of the Bulyea Heights Neighbourhood Structure Plan, Bylaw 8095, as approved by City Council on February 11, 1989. This edition contains all amendments and additions to Bylaw 8095.

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

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

City of Edmonton
Planning and Development Department

(Bylaw 14442, Approved December 12, 2006)





BYLAW 8095

**Bulyea Heights Neighbourhood Structure Plan
RIVERBEND NEIGHBOURHOOD 4
for
*A Private Corporation**
by
Stanley Associates Engineering Ltd.**

(*Amended by Editor)

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(Amended by Bylaw 11308)

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(Amended by Bylaw 11308)

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Notwithstanding any part or policy of this Plan, an opportunity to develop housing for first time homebuyers exists on a vacant surplus school building envelope on the school/park site as illustrated on the approved land use Plan map and as specified under the Community Services Zone. The Community Services Zone reflects the underlying, pre-existing zoning and will, in addition, allow for row housing and related accessory uses. The housing opportunity will occur on an area equal to the portion of the surplus school building envelope. The precise location of this housing within the entire School/Park site will be reviewed and determined by the City. The dwelling units and population generated by this development under the Community Zone are not included in the statistical summary.

Bylaw 14442
December 12, 2006

1.0 INTRODUCTION

This neighbourhood structure plan has been prepared for a *private developer* by Stanley Associates Engineering Ltd. Riverbend Neighbourhood 4, Bulyea Heights, covers approximately 125 ha (310 acres) in the southwest sector of the City of Edmonton and will, when fully developed, be home to approximately 4,000 people.

Amended by Editor

The neighbourhood has been defined previously by the approved Riverbend Area Structure Plan. This neighbourhood structure plan has been prepared in conformance with City Council's terms of reference. As such it is in general conformance with the Riverbend ASP, the City's General Municipal Plan, and other relevant municipal policies with respect to development.

It is intended that this neighbourhood structure plan will provide a practical guide to the servicing and development of this area.

2.0 LOCATION

Bulyea Heights is located in the east-central portion of the Riverbend Structure Plan Area. Its boundaries are defined in the Riverbend ASP as follows:

Amended by Editor

North: Whitemud Drive (approximately 45 Avenue), with the Brookside Neighbourhood being directly north of that freeway.

East: The top-of-the-bank of the Whitemud Creek Valley as it meanders north to the North Saskatchewan River; with the neighbourhood of Aspen Gardens and Westbrooke across on the eastern side of the valley. The top-of-the-bank, defining the eastern limit of *Bulyea Heights*, has been established in several stages. Parts were defined when Petrolia, on the east bank of the creek, was subdivided in the early 1960's under plans 22 N.Y. and 4127 M.C. Subsequently, the entire top-of-bank line was established by survey plan 722-2524.

Amended by Editor

West: Terwillegar Drive, with the newly developed neighbourhood of Ramsay Heights (Riverbend 3) and the nearby developing Rhatigan Ridge (Riverbend 5) immediately west of the Freeway.

South: Rabbit Hill Road and part of the southern boundary of SE 11 52 25 W4 which separates this neighbourhood from partially developed Ogilvie Ridge (Riverbend 8). *Carter Crest* will be developed south of Rabbit Hill Road in the future.

Amended by Editor

Figure 1 shows the location of Riverbend Neighbourhood relative to its surroundings.

Figure 1 – Location
(Bylaw 8095. February 11, 1986)

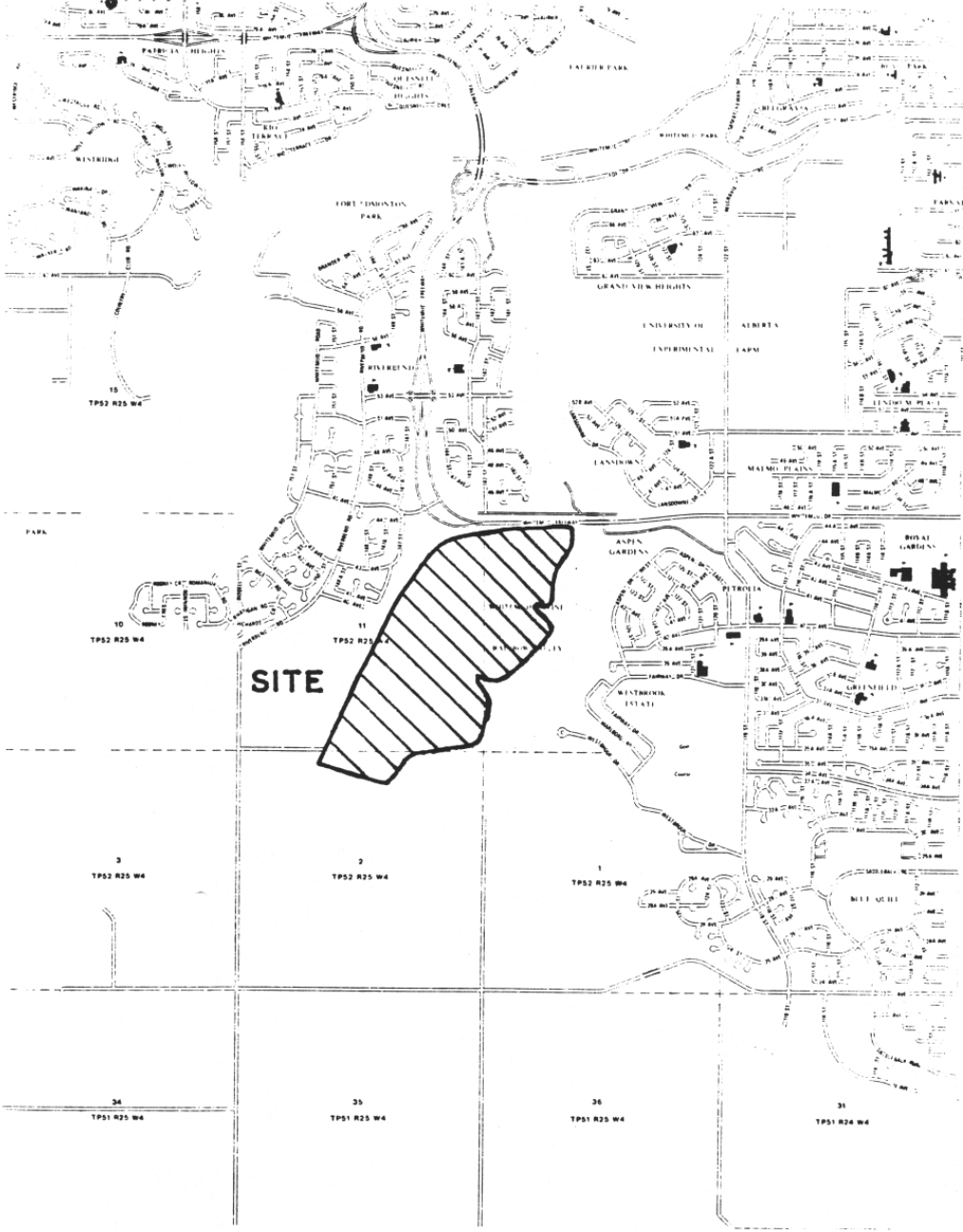


FIGURE 1
LOCATION
RIVERBEND NEIGHBOURHOOD 4



3.0 LEGAL DESCRIPTION AND OWNERSHIP

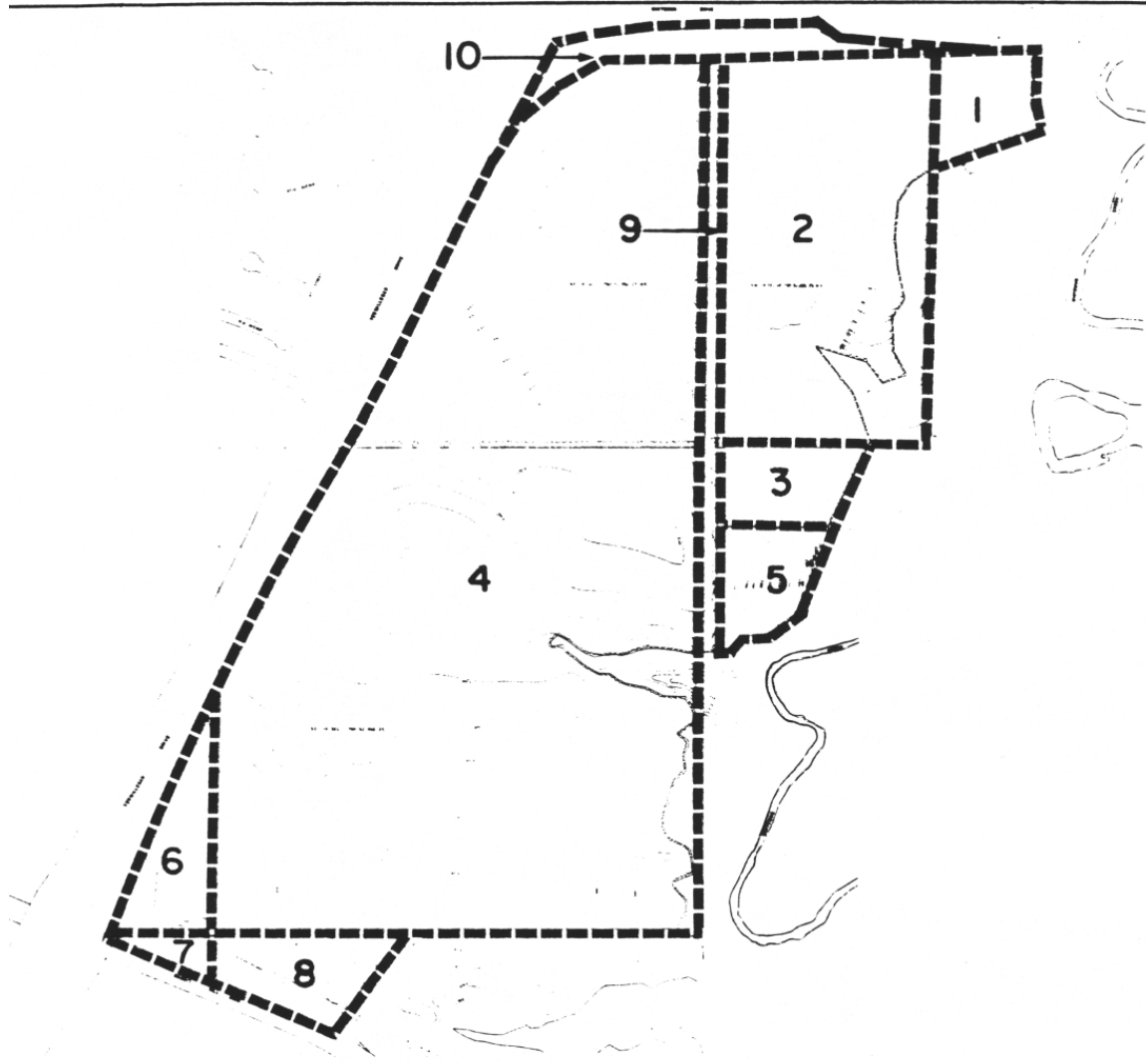
Ownership is a critical factor in shaping the plan to ensure implementation will be practical, to account for the differing development objectives of owners, and to define responsibility for preparation of the neighbourhood structure plan. The following table defines current ownership. Figure 2 illustrates current ownership of the various parcels in *Bulyea Heights*.

Amended by Editor

Parcel	Description	Owner	Area (ha)
1	Ptn. NW-12	<i>Private Corporation (1/2)*</i> <i>Private Corporation (1/2)*</i>	2.75
2	Ptn. NW-12	<i>Private Corporation (1/4)*</i> <i>Private Corporation (1/4) *</i> <i>Private Corporation (1/2)*</i>	22.99
3	Ptn. NW-12	<i>Private Corporation (1/2)*</i> <i>Private Corporation (1/2)*</i>	2.94
4	Ptn. E 1/2-11	<i>Private Corporation*</i>	87.13
5	Parcel D	<i>Private Corporation*</i>	2.93
6	Ptn. SW-11	City of Edmonton	3.20
7	Ptn. NE-2	<i>Private Corporation*</i>	0.89
8	Ptn. NW.2	<i>Private Corporation*</i>	3.73
9	142 Street	City of Edmonton	2.20
10	Road R-O-W	City of Edmonton	3.00
TOTAL LANDS			131.76
Less Reserve Lands			
	PUL above top-of-bank (7.5 m setback)		1.82
	ER below top-of-bank		5.48
TOTAL DEVELOPABLE LAND			124.46 ha

*Amended by Editor

Figure 2 – Ownership*
 (Bylaw 8095, February 11, 1986)



1. Two Private Corporations*
2. Three Private Corporations*
3. Two Private Corporations*
4. Private Corporation*
5. Private Corporation*
6. City of Edmonton/Private Corporation*
7. Private Corporation*
8. Private Corporation*
9. City of Edmonton
10. City of Edmonton



FIGURE 2
OWNERSHIP
RIVERBEND NEIGHBOURHOOD 4

*Amended by Editor

As a private developer is the majority owner (see Parcels 4 and 5, as shown in the table in Section 3.0 and on Figure 2), they have assumed responsibility for plan preparation. However, they have had discussions with other owners to ensure owner intentions will be accommodated. The neighbourhood structure plan has been designed to accommodate, wherever possible, individual ownership boundaries for ease of future implementation.

Because of roadway redesign, approximately 3.0 ha (7.5 ac) of land now included within the Terwillegar and Whitemud Drive rights-of-way will be released for development. The exact area will be defined as roadway plans are further refined.

4.0 SITE FEATURES

The site slopes eastward from localized high spots in the southwest and northwest portion of the neighbourhood. The slope is fairly gentle and consistent, but gradually increases as it approaches the valley of Whitemud Creek. The Freeways (both Whitemud and Terwillegar) are in fairly substantial cuts, so the overall effect of the topography is that of a neighbourhood on high ground which slopes gently to the top-of-bank. The overall change in grade is seven to eight metres from the high points to the top-of-bank. These points are shown on Figure 3.

Soils and slope stability are addressed by a separate geotechnical study. The majority of the site remains under agricultural use. There are no buildings or other structures within the neighbourhood boundaries.

The most striking natural feature of the site is obviously the edge of the Whitemud Creek valley along the eastern boundary. The slopes are fairly steep and tree covered. The tree line roughly approximates the top-of-bank in most areas. There are two prominent ravine indentations along the eastern boundary.

Most of the site has been cleared for farming. Other than the trees along the top-of-bank, three significant treed areas remain. The most significant, running through the north half of the neighbourhood, is located along the 142 Street government road allowance. This road was never built and the right-of-way will be abandoned. A second hedgerow crosses the site east-west along the quarter section line. It is not as wide as or consistently thick as the trees along 142 Street. The third significant area is located on Parcel D in the SW of Section 12-52-25-W4. It is close to three hectares in area. Consistent with the Riverbend ASP, these trees will be preserved wherever practical in parks, multiple-family sites, walkways, and along rear lot lines.

The Riverbend Area Structure Plan notes the presence of potentially significant historic sites. They have been evaluated previously and Alberta Culture has indicated the sites will not have a limiting effect on development.

Figure 3 – Site Features
 (Bylaw 8095, February 11, 1986)

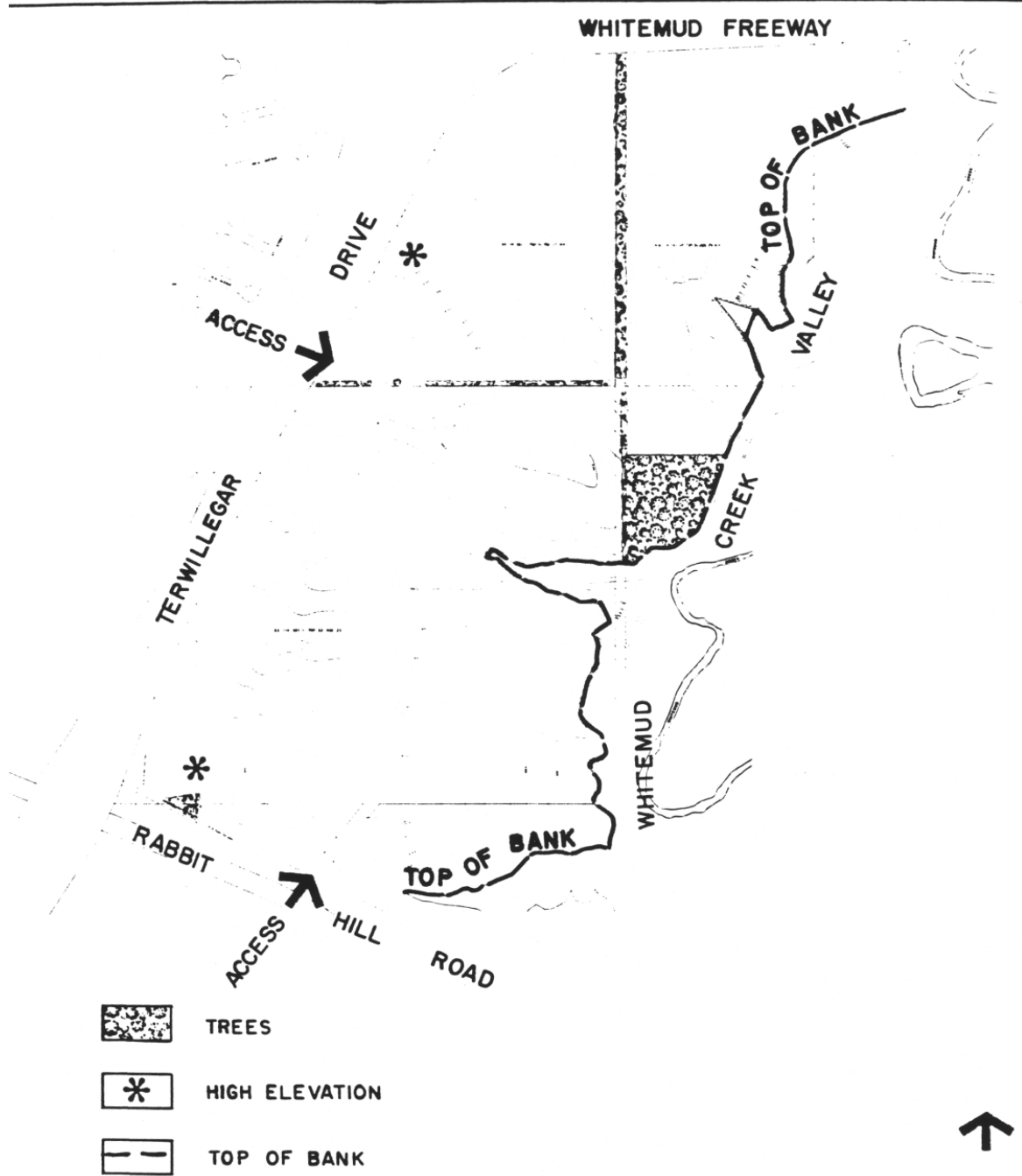


FIGURE 3
SITE FEATURES
RIVERBEND NEIGHBOURHOOD 4

Because of the ravine and two Freeways, access is limited to two locations - one from Terwillegar Drive at 40 Avenue and one from the south off Rabbit Hill Road.

A deep trunk sewer crosses the southwest portion of the site. As it is in deep strata-easement, it will have no influence on surface development.

In summary, the site features do not present significant constraints to development. Instead, they will provide significant opportunities to create a neighbourhood consistent with the overall design guideline of a high quality residential area in a superior natural setting.

5.0 CONFORMANCE TO GENERAL MUNICIPAL PLAN

As planning at the detailed level must be consistent with broader plans, the neighbourhood structure plan terms of reference require a statement on how the neighbourhood conforms to municipal planning policies.

The General Municipal Plan, in Chapter 5.3, entitled "Suburban Planning Units", defines a neighbourhood as:

"An area representing approximately 1,000-2,000 homes and 4,000-6,000 people. A neighbourhood has less variety of housing types and block configurations than a community as a whole, however, some degree of heterogeneity is planned for. Neighbourhoods will be centred around an elementary school, church site, and other community facilities and services. Neighbourhoods will also have a direct relationship to local commercial facilities."

The General Municipal Plan breaks neighbourhoods into sub-neighbourhoods, defined as follows:

"A sub-neighbourhood or precinct is an area comprised of approximately 50-150 homes and 150-450 people. Its housing types are homogeneous in nature. The sub-neighbourhood will be based on a sub-collector roadway, have its own access, and identifiable boundaries."

These general design principles have been incorporated into the land use concept of *Bulyea Heights*.

Amended by Editor

6.0 CONFORMANCE WITH RIVERBEND AREA STRUCTURE PLAN

Edmonton City Council adopted the Riverbend Area Structure Plan by bylaw, giving third and final reading on September 11, 1979. This Bylaw 1/5710 is intended as a guide to the future development of the undeveloped portion of Riverbend up to the City limits before annexation. As such the area structure plan provides an intermediate link between the policies of the General Municipal Plan and the more detailed requirements of a neighbourhood structure plan.

Bulyea Heights is one of six neighbourhoods in Riverbend, each having different policies and guidelines. Most significantly, the Area Structure Plan defines the boundaries for *Bulyea Heights* and the major land uses which should be incorporated. Specifically, it addresses the following:

Amended by Editor

1. A population range of between 5776 and 8030 people assuming an average of 2.9 persons per unit and a density range of 40 to 55 persons per gross hectare (16-22 people/gross acre). The Riverbend ASP based this population on a gross area of 146 ha (361 acres). Based on detailed calculations, the neighbourhood is substantially smaller by over 21 ha (52 acres). Given current economic factors such as supply and consumer preference, the proposed land uses for Riverbend result in a slightly lower population. Given the size of the neighbourhood, sufficient pupils are generated to support the proposed public elementary school. The separate elementary school and public junior high school accommodate students from beyond *Bulyea Heights*.
2. *Bulyea Heights*, given its location relative to the external transportation network and regional facilities, is designated for "low-medium" density development. This is consistent with its proposed land use concept.
3. The location and size of neighbourhood commercial sites are to be established at the neighbourhood structure plan stage. A small convenience centre has been designated on the "going-home" side of the major neighbourhood entrance. It provides for local convenience uses and does not compete with other planned sites.

Amended by Editor

Amended by Editor

4. The Area Structure Plan's "Land Use Map", copied here as Figure 4, recommends the inclusion of a public elementary school, separate elementary school, and a public junior high school, all located central to the neighbourhood and in conjunction with neighbourhood park space. These uses have been included in the plan.

5. The "Land Use Map" also notes that *Bulyea Heights* contains a "potential historic preservation area" near the top-of-bank of the Whitemud Creek valley. The area structure plan states further that these sites "are subject to further study to be conducted in accordance with the Alberta Historic Resources Act (1978) at the time of detailed neighbourhood planning". Appendix 12.1 is a letter from the Archeological Survey of Alberta Culture, dated August 1, 1985, in which they indicate these areas have been "cleared" and that "Alberta Culture has no further concerns with the areas outlined on this map".

6. A church site is designated, as suggested by the Riverbend ASP. Should the church site not be required, it will revert to commercial use. *On May 12, 1987, Council gave third reading to Bylaw 8513 which redistricted the proposed church site from AGU to CNC.*

7. A neighbourhood park is to be located within the joint school/park site. Other open spaces (pocket parks, tot lots, playgrounds, ornamental parks, viewpoint parks) shall be designated at the neighbourhood structure plan stage. A linkage system comprising walkway/bikeway, nature trails, and jogging lanes will connect various parks and open spaces with the major facilities of the Riverbend area. The land use concept addresses these concerns. The pedestrian system will pay particular attention to connections with neighbourhood facilities and with the top-of-bank.

8. The Riverbend ASP calls for a system of hierarchial roads, with a "potential collector" running north-south parallel with Terwillegar Drive. Because of technical aspects and the cost of crossing Whitemud Freeway at the north end of *Bulyea Heights*, this link back to Brookside has been deleted by the Land Use Concept. This should have the beneficial impact of reducing through traffic flows in the residential areas of both Brookside and *Bulyea Heights*.

Amended by Editor

Bylaw 8578
June 23, 1987

Amended by Editor

Figure 4 – Riverbend Area Structure Plan
 (Bylaw 8095, February 11, 1986)

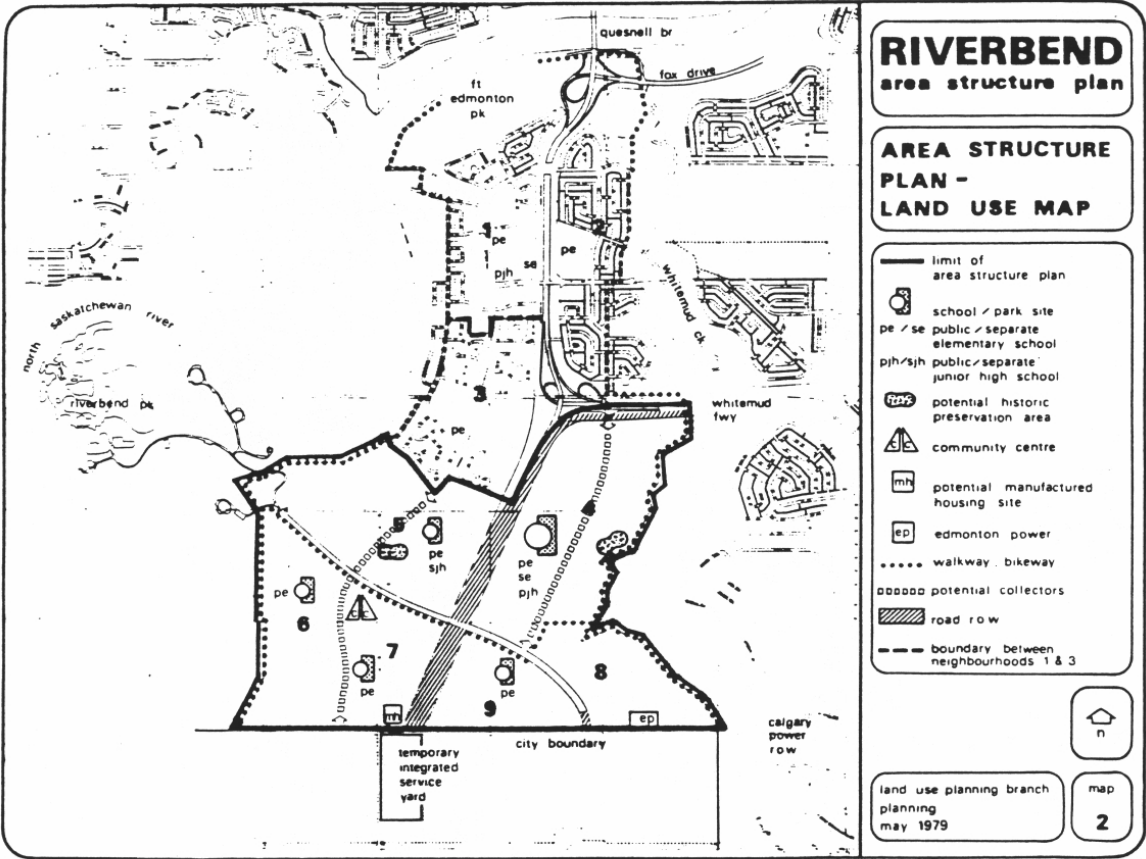


FIGURE 4
RIVERBEND
AREA STRUCTURE PLAN

9. As required by the ASP, a geotechnical study was submitted. This study, under separate cover, evaluates slope stability along the ravine and provides guidelines for development along the top-of-bank.

10. As a further environmental consideration, the Riverbend ASP states that "significant vegetation shall be preserved wherever possible". This directive has been one of the major design factors shaping the land use concept.

7.0 DEVELOPMENT OBJECTIVES

As stated in the Riverbend Area Structure Plan:

"The overriding urban design principle to be applied in the Riverbend Area shall be enhancement of the natural features through appropriate development thereby creating a living environment within a natural setting."

The principal development objective was to achieve harmony between the environmental, social, and activity needs of the residential setting and the traffic functions of the street system.

The Land Use Concept pays particular attention to creating a sense of privacy and amenity for residential lots. This is balanced with convenient access to neighbourhood facilities, parks, and the ravine areas.

8.0 NEIGHBOURHOOD STRUCTURE PLAN

8.1 LAND USE CONCEPT

The Land Use Concept, shown on Figure 5, is based on a low density single family neighbourhood, divided into two residential cells. These sub-units are divided into smaller cells, where privacy and amenity are provided. The major factors influencing this design are the two access points, the system of minor collector loops, and the ravine system which is linked back into the major neighbourhood open spaces. The following sections provide additional detail about each of the land uses.

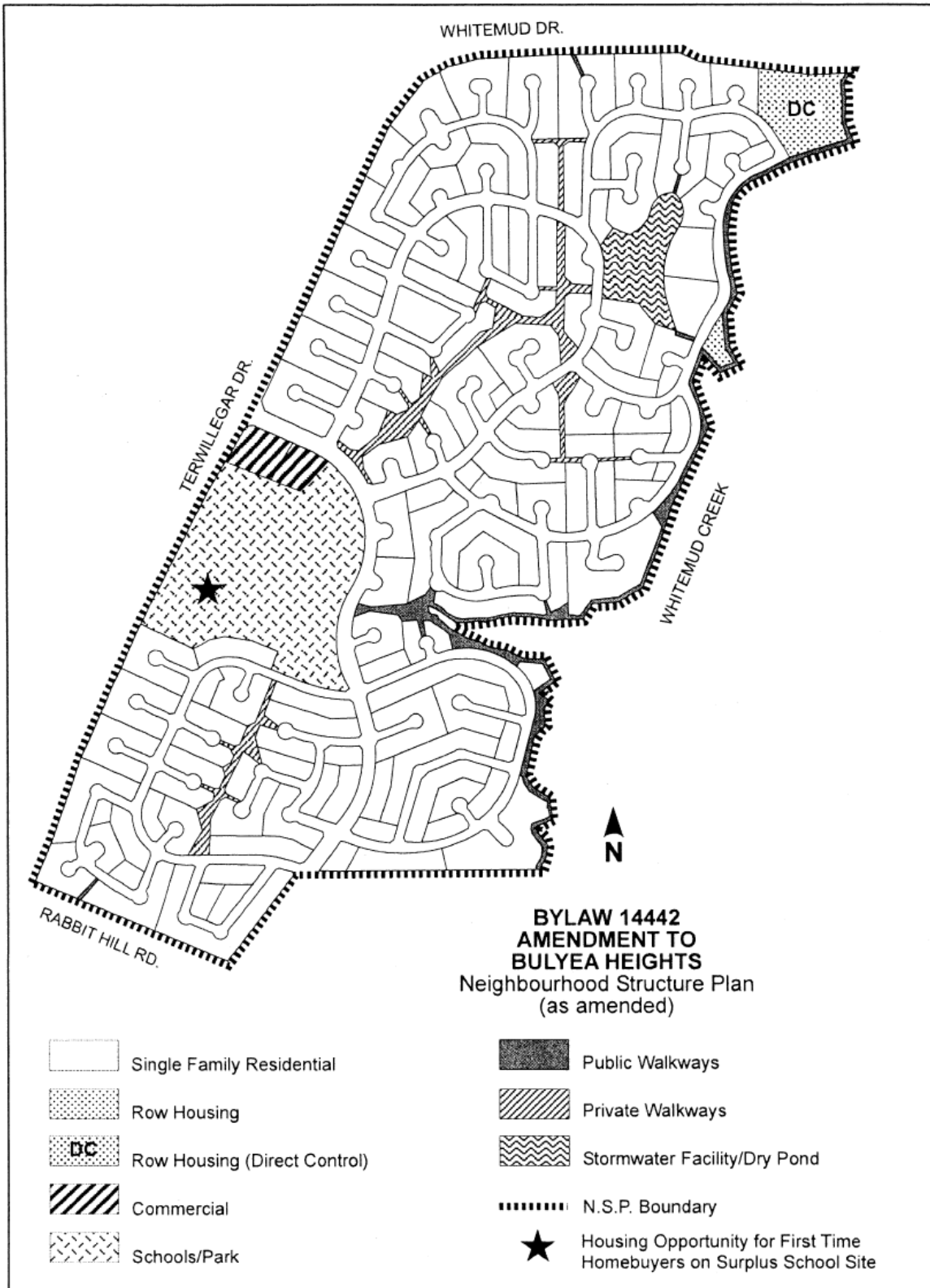
8.2 TRANSPORTATION

With the deletion of the 142 Street extension from Brookside, access is provided to Neighbourhood 4 from Terwillegar Drive at 40 Avenue and from the south off Rabbit Hill Road. A collector loop links these two access points. A collector loop extends to the north to provide bus route penetration to all parts of the neighbourhood.

The roadway system reflects the hierarchical pattern of arterial, minor collector, and local roadways. It provides adequate access and internal circulation while discouraging through-traffic or unnecessary vehicles from using neighbourhood roadways. Secondary and emergency access requirements will be addressed as subdivisions are staged in the area. Frontage to these collector roads has been avoided as much as possible, particularly at bus stop locations. Access to individual lots is generally provided off local roads. The cul-de-sac format has been used wherever possible to create a safer, private, traffic free residential environment. Based on the design concept, the following roadway standards are suggested:

	<u>Pavement Width</u>	<u>Right-of-Way</u>
- Collector Access Gateway	2 @ 8.5m	Varies
- Loop Collector	11.5 m	20.0 m
- Local Loop	9.0 m	17.0 m
- Cul-de-sac	9.0 m	15.0 m

Figure 5 – Land Use Concept
 (Bylaw 14442, December 12, 2006)



8.3 RESIDENTIAL

Based on the minor collector loops, the neighbourhood is divided into a northern and southern section with the community facilities (such as convenience commercial, the church site, and the schools) located between the two. The design concept shows that the neighbourhood is not only based on two neighbourhoods, but each contains a number of identifiable residential clusters. Again, this is shown on Figure 5. The cul-de-sac cell is used wherever possible, not only for proven cost-efficiency reasons, but as a means of breaking linear streetscape monotony particularly along the minor collector loop roads. Avoidance of such monotony is less an issue along the ravine because of its natural aesthetic value. The cul-de-sac format also has the distinct advantage of reducing the number of lots which back onto the Freeways.

Recognizing current consumer preference, market conditions, and the fact that very little multiple family housing has been built in Riverbend in the last few years, this neighbourhood is designated primarily single family. When evaluating this, recognition should be made of the very large multiple sites in Neighbourhood 8 (Ogilvie Ridge) immediately to the south. It should be noted that a variety of lot sizes will be provided in the neighbourhood.

The land use concept does, however, designate potential multiple family sites. *One is located on the ravine at the north end of the neighbourhood and one is located adjacent to a ravine draw that extends back into the neighbourhood. The amenity value of these sites should guarantee high quality development compatible with surrounding single family areas.* Dispersing these sites in the neighbourhood, at row housing densities should not be seen as inconsistent with the guidelines for the distribution of neighbourhood density.

Bylaw 8578
June 23, 1987
Bylaw 11308
August 12, 1996

The residential density, while slightly lower than envisaged by the Riverbend area structure plan when approved in 1979, does provide the population and number of students to support the schools and neighbourhood facilities. These statistics are included in the Appendices to this report.

It is likely the single family areas would be districted to RF1 - Single Detached Residential District and the multifamily sites as RF5 - Row Housing District.

However, depending on specific circumstances, it may be advantageous to use DC - Direct Control for some sites. This could provide for extra design features to ensure compatibility with adjacent single family development.

Bylaw 8578
June 23, 1987

8.4 RESERVES (SCHOOLS, PARKS, ENVIRONMENTAL)

Consistent with the Land Use Map of the Riverbend Area Structure Plan, *Bulyea Heights* requires the dedication of lands for a public elementary school site, a public junior high school, and a separate elementary high school. These sites are located on a joint site central to the neighbourhood on the 40th Avenue entrance road. This allows convenient walking distances for students, access to the bus routes for students outside the neighbourhood, and provides a strong visual amenity at the major neighbourhood entrance. The major neighbourhood park and community league component is located in conjunction with the school site.

Amended by Editor

A park site, consistent with City policy, is located at the stormwater pond. Its location should substantially increase the value of the pond as a visual amenity to the neighbourhood. City plans and policies require the dedication of ravine areas below the top-of-bank as environmental reserve according to the provisions of the Planning Act. In addition, a minimum 7.5 metre upland strip, designated as a PUL lot, is provided to effectively prevent encroachment on the ravine, to preserve natural amenities, and to maximize public access to the ravine system.

A walkway system has been included to provide direct pedestrian linkages to the school and park sites as well to the ravine. It also serves, in some areas, to combine this function with preserving significant tree stands. It is proposed that these walkway lots where not required for utility purposes, be privately owned and maintained by a residents' association. This will ensure the City is not burdened by the financial responsibility of long term maintenance.

A statistical breakdown of reserve space is contained in Appendix 12.3.

8.5 COMMERCIAL

A small site of approximately 1.0 ha (2.5 ac) is located on the neighbourhood entrance from Terwillegar Drive. Being small and on the driving-home side, this site will provide only convenience services to the neighbourhood. Given the

Bylaw 8578
June 23, 1987
Amended by Editor

specifics of its locations relative to the neighbourhood, it should be viewed as a compatible neighbourhood use. It is proposed that this site would be districted CNC-Neighbourhood Convenience Commercial District.

8.6 CHURCH SITE

A small site, of approximately 0.4 ha, is also located at the 40th Avenue neighbourhood entrance adjacent to the commercial site. If required for a church, this site would be most appropriately districted to US - Urban Services District, which allows religious assembly as a permitted use. Should the site not be used for church uses, the most appropriate use of the site would be for additional commercial or, alternatively, for multiple housing. *On May 12, 1987 Council approved Bylaw 8513 which redistricted the proposed church site from AGU to CNC.*

Bylaw 8578
June 23, 1987

9.0 SERVICING

9.1 STORMWATER MANAGEMENT

At present, the land discharges to the ravine by overland flow from west to east. Previous development and Terwillegar Drive to the west have already significantly reduced overland discharge to the ravine to below pre-development levels.

Generally, the design of the neighbourhood should be such that the major storm system (1 in 100 year event) is directed to the ravine. Roadway design will ensure continuous slopes to the ravine. Isolated low spots will be kept to a minimum and will only occur in a few isolated areas.

The underground storm sewer system and storm sewer outfalls (including stormwater management facilities) will be designed to handle the 1 in 5 year storm.

Previous planning by the City envisioned that *Bulyea Heights* would drain to a tunnel on 30th Avenue by way of a new drop structure to be constructed at the south end of the neighbourhood. This would entail construction of a deep trunk sewer to bring the storm drainage from the lower areas at the northeast corner to the south end of the neighbourhood. With the advent and acceptance of stormwater management techniques, alternative systems of drainage have now become feasible.

Amended by Editor

The alternative methods of handling storm runoff are as follows:

- (a) Discharge to drop structure to the south of *Bulyea Heights*.
- (b) Stormwater management lake near the north end of *Bulyea Heights* with outfall to Whitemud Creek.
- (c) Same as (b) but with an outfall sewer to an existing storm sewer on Whitemud Drive.
- (d) A compromise between (a) and either (b) or (c), with the storm

Amended by Editor

system split between the southern drop structure and a stormwater management lake.

Based on preliminary evaluation, scheme (c) seems the most attractive with respect to cost, timing, and minimizing disruption to adjacent property. A master drainage study was undertaken to review these alternatives on a technical basis. This master drainage plan was submitted under separate cover to the Water and Sanitation Department.

A dry pond stormwater management facility is proposed in the north portion of the neighbourhood. In order to reduce the possibility of deterioration of soils in the area due to leakage from a wet pond stormwater management facility, which is a concern given the proximity of the pond to the Whitemud Creek Ravine slopes, a dry pond facility is recommended. The design of the dry pond will incorporate landscaping and recreation features, including a basketball court, a grassed volleyball court and a tot lot, that will provide an amenity to the neighbourhood.

Bylaw 9422
March 27, 1990
Amended by Editor

9.2 SANITARY SEWERAGE

It is proposed that the neighbourhood will drain from south to north. There is an existing sanitary outfall available at Whitemud Drive and 142nd Street.

There will be a main sanitary interceptor (300 mm or 375 mm) constructed through the neighbourhood.

A further sanitary outfall is available at 40th Avenue and Terwillegar Drive. This could be utilized to drain the southwestern quadrant, or to facilitate staging if necessary.

As far as possible sanitary manholes will not be located in sags, in order to prevent inflow. Inflow will also be minimized by the deletion of roof leaders, and the avoidance of common trench installation in cul-de-sacs, and for the major outfall lines.

9.3 WATER SUPPLY AND DISTRIBUTION

The Riverbend area has good water supply being fed from the E.L. Smith Plant

via the major 1050 mm supply main along Rabbit Hill Road at the south boundary of the neighbourhood. There are, however, very high pressures in this main due to line pressures required to feed the Millwoods area and other southern sectors of the City. *The existing neighbourhoods of Ramsay Heights and Rhatigan Ridge* to the west are fed from the supply main via a 400 mm main on Riverbend Road and a 300 mm main on 40th Avenue.

Amended by Editor

There are also 300 mm mains on 147 Street west of Terwillegar Drive. There are no mains over 150 mm within 400 metres of *Bulyea Heights* in the subdivision north of the Whitemud Freeway.

Amended by Editor

Ultimately, the neighbourhoods should be fed from a 300 mm loop main between the existing 300 mm main on 40th Avenue and the 1050 mm line on Rabbit Hill Road at 142nd Street, with two feeds into the neighbourhood.

Provided a looped supply is maintained for any group of housing sites over 50 units, the project can be initially staged by providing a looped system back to 40th Avenue, or to 147 Street if the necessary easement is acquired. The water system will be designed and constructed in accordance with the City of Edmonton Servicing Standards Manual.

9.4 GRADING AND SOILS

9.4.2 Grading

The objective is to grade the roadways and lots to fit the existing topography and to maintain significant stands of trees where practical. Grading will be only undertaken to extend and enhance the existing ravine and proposed open space systems by reinforcing the major surface drainage system throughout the neighbourhood.

The complete neighbourhood will be designed to provide a continuous "failsafe" major overland drainage storm system from the periphery of the community to the two defined existing ravines along the east side. Grading along the freeway will also be undertaken to provide the necessary visual and noise protection from the freeway, and focus inward on the open space system and the extensive valley system.

The neighbourhood is designed using cul-de-sacs wherever possible. These cul-de-sacs will be designed to drain from top to bottom. Rain water leaders will be deleted. There will therefore be no requirement for storm sewers in most of the cul-de-sacs.

There is enough natural slope across the area that a positive major drainage scheme can be implemented. Some isolated sags will be present but generally a functional major drainage system is possible.

9.4.2 Soils

Soils in the area will not be a major constraint to development. A program of preliminary soils boreholes was undertaken to verify subsoil conditions for of the deep sewer installations and the detailed design of the initial stages of development.

A geotechnical Soil Stability Study is required along the top-of-bank and was submitted under separate cover.

9.5 POWER, TELEPHONE, AND GAS SERVICING

9.5.1 Power

The power supply for *Bulyea Heights* will be extended from a manhole system on Terwillegar Drive, Rabbit Hill Road and Whitemud Freeway. These feeds will be interconnected in order to provide the necessary network for the power distribution.

Amended by Editor

9.5.2 Telephone

The proposed feed for this Neighbourhood is from a duct line system on Rabbit Hill Road. This ductline system would be extended through the Neighbourhood along the collector roadways. In order to provide service for Stage 1, temporary overhead telephone will be required unless the appropriate rights-of-way can be provided so that Edmonton Telephones can construct the ductline.

9.5.3 Gas

Gas service for this area will originate from *Olgilvie Ridge* to the south. It is currently planned that a feeder line will be constructed to a regulator station located centrally in the neighbourhood. A north-south right-of-way will be development of *Bulyea Heights*. There should, however, be no problem in providing gas supply to this area.

Amended by Editor

A summary of the major servicing trunks is illustrated in Figure 6.

Figure 6 – Servicing
(Bylaw 8578, June 23, 1987)

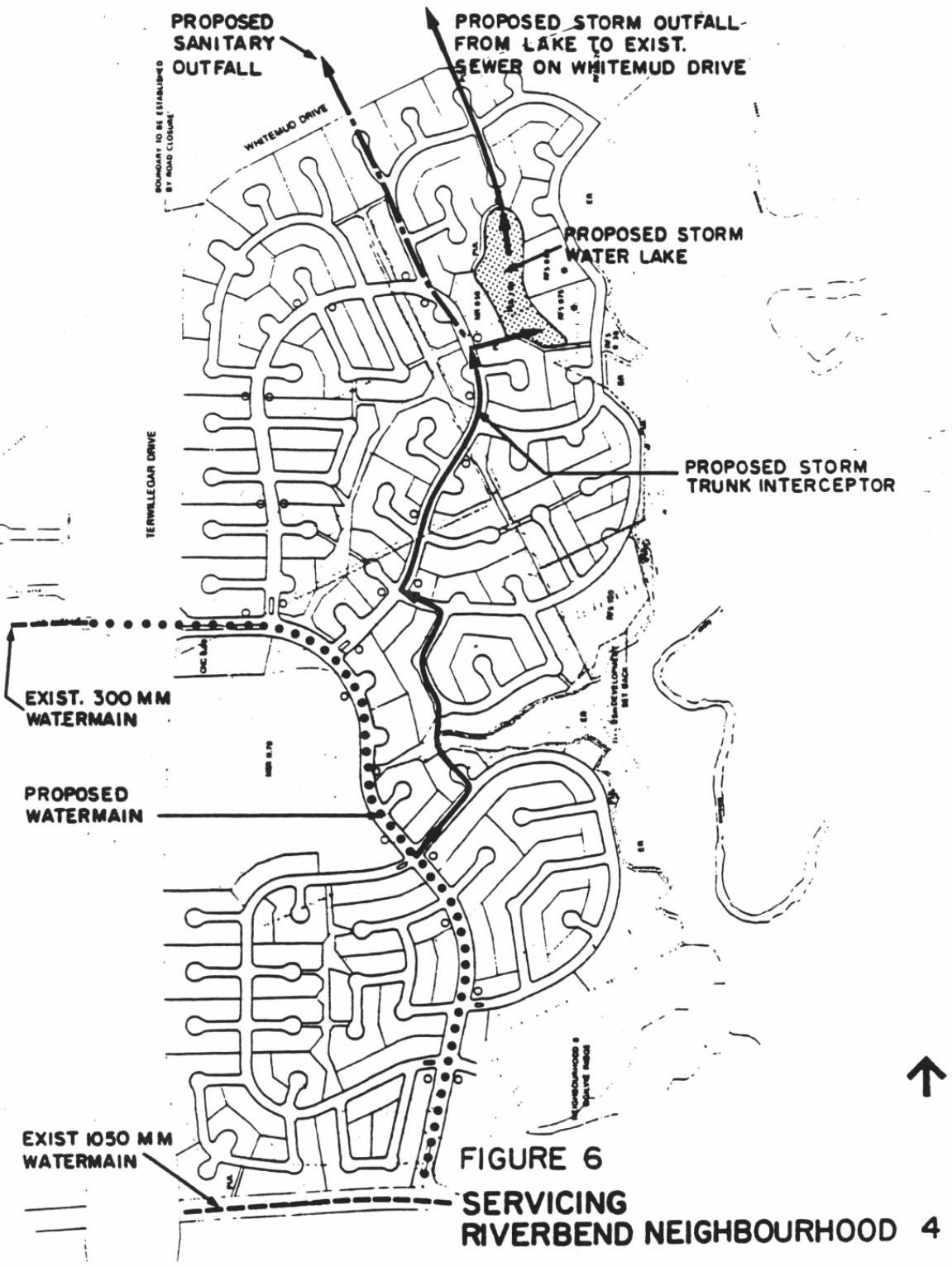


FIGURE 6
SERVICING
RIVERBEND NEIGHBOURHOOD 4

10.0 ENVIRONMENTAL/SOCIAL IMPACT ASSESSMENT

There is no one currently living on or immediately adjacent to the site. Only future residents will have an impact from the future development of the neighbourhood. This impact will be positive and similar to other developing suburban areas, particularly those in the southwest sector of the City. Noise attenuation will be provided, where necessary, along the freeways as adjacent subdivision proceeds.

In terms of environmental impact, there will be an impact similar to other suburban areas where farmland is converted to urban areas. As a positive measure, the plan retains existing vegetation wherever possible. The master drainage plan includes an assessment of the environmental impact the various stormwater management schemes will have on Whitemud Creek.

Appropriate development setbacks along the top-of-bank are set in accordance with the geotechnical analysis. Specifically, reference should be made to "Geotechnical Evaluation: Top of the Bank Study", prepared by EBA Engineering Consultants Ltd. in November, 1985 (Report #D106-4408). This report presents evaluation and recommendation for the setback distances from the designated top of bank line based on the basis of visual, physical, and analytical considerations of existing site conditions. In general, the report accepts the standard 7.5 m setback along the Whitemud Creek ravine except for one location requiring a 25 m development setback. This site is designated on the land use concept plan shown in Figure 5. This will ensure urban development does not have a deliterious effect on the valley slopes.

11.0 IMPLEMENTATION

11.1 STAGING

This subdivision will be developed in a series of stages like those outlined on Figure 7. These stages are preliminary at this time but indicate the area will be developed in approximately equivalently sized stages over the next five to six years. Actual staging boundaries will depend on market conditions, economic servicing patterns, access, the development intentions of specific owners and the like. It is anticipated housebuilding will commence in Stage 1 during the early summer of 1986.

Provision will be made to ensure secondary access and specific utility requirements such as water looping will be accommodated at each stage of subdivision. Reserves will be dedicated in stages to ensure a school site is available when required by continued development.

11.2 SUBDIVISION AND REZONING

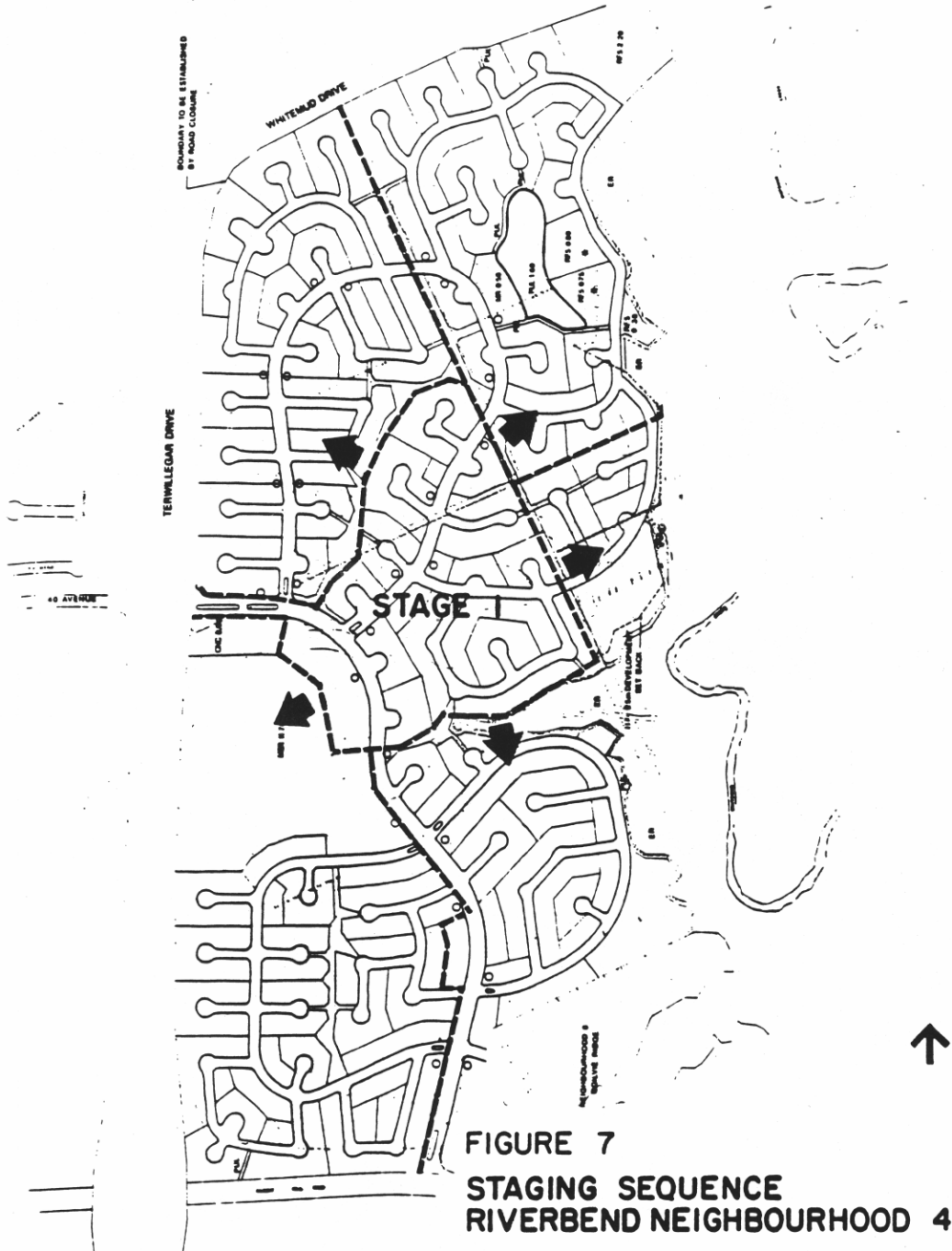
Amended by Editor

Subdivision and *rezoning* will occur in stages as discussed above. Ultimate Land Use Bylaw *zones* are indicated on the Land Use Concept, Figure 5. The school and municipal reserve sites will not be changed from the current AGU - Urban Reserve *Zone* until detailed plans are finalized by the *Community Services* Department, in conjunction with the two School Boards. Each phase of subdivision and *rezoning* will go through the steps of notice and public hearings as required by the Planning Act.

11.3 ROAD CLOSURE

Before the first phase subdivision can be registered, the 142 Street government road allowance will have to be dosed, by bylaw, by Edmonton City Council. This portion to be closed contains approximately 2.2 hectares, most of it now covered by trees. Once the revised plans are finalized for Whitemud and Terwillegar Drives, those lands freed for development will go through the road closure process as well.

Figure 7 – Staging Sequence
(Bylaw 8578, June 23, 1987)



12.0 APPENDICES

12.1 LETTER FROM ALBERTA CULTURE



CULTURE
Historical Resources Division
Archaeological Survey

8820 - 112 Street, Edmonton, Alberta, Canada T6G 2P8 403/427-2355

August 1, 1985

Mr. J. Steil
Stanley & Associates Ltd.
10512 - 169 Street
Edmonton, Alberta
T5P 3X6

Our File: 79-21

corporation

Mr. J. Steil:

SUBJECT: PROPOSED SUBDIVISION
NE 2, SE 11, SW 12-52-25-W4M
RIVERBEND, EDMONTON
HISTORICAL RESOURCE CONCERNS

ACG - 71985

Further to our telephone conversation of July 26, 1985 attached for your information is a copy of a letter dated August 5, 1980 and a map outlining the areas cleared by this letter within the proposed *Private Corporation**, Riverbend - Terwillegar Heights, Neighbourhoods 4 and 5.

As indicated in this letter, Alberta Culture has no further concerns with the areas outlined on this map. Should your current proposed developments conform with this area, then from Culture's perspective development may proceed. However, should this development extend beyond these limits, then Culture could have concerns with this project. To this end, I would appreciate it if you could provide me with a copy of plans of your proposed development area for our files.

Thank you for your cooperation in this matter. Should you have any questions, please contact me at the above number.

Sincerely,

A handwritten signature in cursive script that reads "Barry Newton".

BARRY NEWTON
Subdivision Coordinator
Archaeological Survey of Alberta

BN/jt 2840

cc G. Ward
B. Ball

*Amended by Editor

Office of
the Assistant Deputy Minister
August 5, 1980



Old St. Stephen's College
8820 - 112 Street
Edmonton, Alberta, Canada
T6G 2P8

Mr. Peter V. Combe
900 Bank of Montreal Building
10089 - Jasper Avenue
Edmonton, Alberta T5J 1V5

Dear Mr. Combe:

Subject: PROPOSED SUBDIVISION
RIVERBEND TERWILLEGAR
CITY OF EDMONTON

I would like to thank you for meeting with my staff, Mr. H. Diemer and Mr. G. Buchanan, on July 3, 1980 concerning the captioned project and the generalities of historical resources management requirements as they apply to the land development industry.

In confirmation of the discussion concerning the land owned by *a private corporation** in the Riverbend-Terwillegar Heights Neighbourhoods 4 and 5, no further archaeological investigation will be required on the land and I have no objection to the commencement of development in the area.

As you are aware, an archaeological consultant, Rod Heitzman, conducted an Historical Resources Impact Assessment on the whole of Riverbend-Terwillegar Heights--Neighborhoods 4 and 5 and encountered numerous sites as indicated on the attached map, by four letter two digit designations. Two sites were located in the land owned by Carma Developers Limited, i.e., FIPJ-16 and FIPJ-17, both of which have been sufficiently investigated so that all the archaeological information available in those sites has been collected and hence, I have no further concerns with the area under Section 22(2) of the Alberta Historical Resources Act.

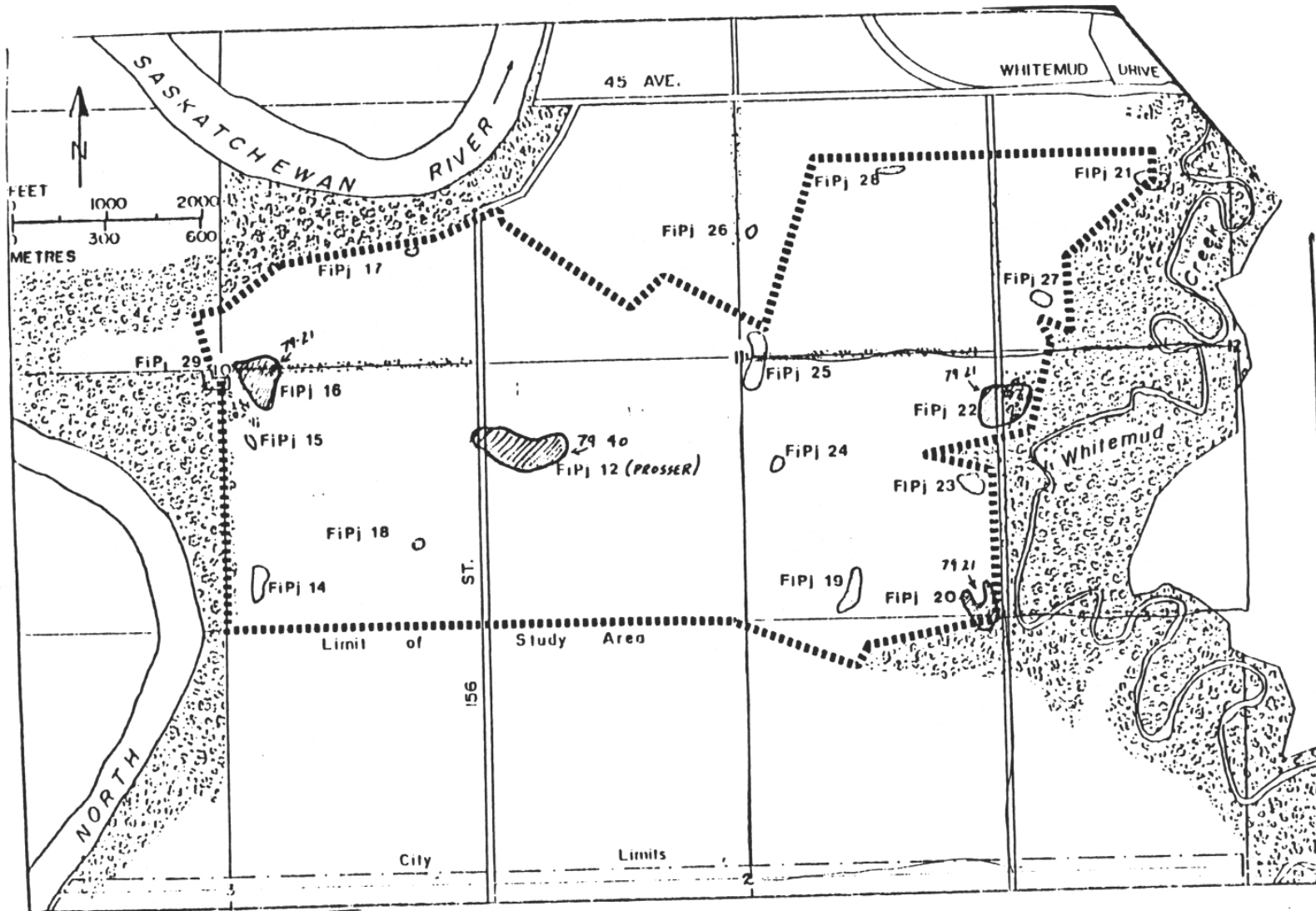
I trust that your meeting with my staff was informative and helpful. Furthermore, I would like to thank you and Carma Developers Limited for your cooperation in our valuable historical resources conservation programmes.

Sincerely,
Original Signed

Dr. Frits Pannekoek
Acting Assistant Deputy Minister
Historical Resources Division

HLD:lk

*Amended by Editor



12.2 LAND USE STATISTICS: *BULYEA HEIGHTS NEIGHBOURHOOD STRUCTURE PLAN*

(Bylaw 11308, August 12, 1996)

Land Use	Area	Dwelling Units	Population
Single Detached	78.39	1,034 ¹	3,632 ²
Row Housing/Medium Density	2.67	112 ³	321 ⁴
Schools/Parks	11.70 ⁵		
Public Utilities (Upland Walkways)	2.00		
Public Utilities (Utilities and Dry Pond)	3.40		
Roadways	25.34		
Neighbourhood Commercial	1.00 ⁶		
Total	124.50	1,152	3,971

Gross Developable Area: 124.5 ha

Density: 31.9 p.p.g.d.ha

1. Actual number of lots subdivided and approved for subdivision, May, 1996, plus 20 lots in the amendment area.
2. People per dwelling is 3.51 based on SELUS data base, May, 1993.
3. RF5: Between 42 units/ha as per Section 160.4(1) of the Edmonton Land Use Bylaw.
4. As per 3 above, 2.87 people/unit for RF5 Land Use District.
5. Includes 10% reserve on gross developable area plus deferred reserve caveat.
6. Bylaw 8513 approved on May 12, 1987 *rezoning* what had been the proposed church site from AGU to CNC thereby deleting it from the plan.

12.3 RESERVES (SCHOOL, MUNICIPAL, ENVIRONMENTAL)

	Area (ha)
Total titled area	131.76
Less ER and PUL setback	7.30
Gross developable area	124.46
Reserves due as 10% of 124.46 ha	12.4
DRC 852-063855	0.6
TOTAL DUE	13.0

Reserves allocated on the Land Use Concept (Figure 5), are as follows:

	Area (ha)
Parks (Passive, viewpoint, etc.)	0.5
Joint School and Park Site	11.7
Undesignated (deferral, money-in-place)	0.8
TOTAL	13.0 (ha)

12.4 STUDENT GENERATION (Bylaw 11308, August 12, 1996)

Land Use Type	Dwelling Units	Students
Single Detached (RF1)	1034	1241
Multiple Family (RF5)	112	116
Total		1357

Note: 1. Student generation: Single Detached – 1.20 per unit
Multiple Family – 1.04 per unit

Source: SELUS data base, May, 1993