

Silver Berry Neighbourhood Structure Plan

Office Consolidation June 2007

Prepared by:

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

Bylaw 10818, as amended, was adopted by Council in December 1994. In June 2007, this document was consolidated by virtue of the incorporation of the following bylaws:

<i>Bylaw 10818</i>	Approved December 14, 1994 (to adopt the Silver Berry Neighbourhood Structure Plan)
<i>Bylaw 12254</i>	Approved March 21, 2000 (to reconfigure land uses in the south-west portion of the plan area and to relocate school/park adjacent to the north-south utility corridor)
<i>Bylaw 12524</i>	Approved March 14, 2001 (to realign the east and north boundaries and to reconfigure land uses within the entire neighbourhood)
<i>Bylaw 13167</i>	Approved September 10, 2002 (to redesignate a 1.93 ha parcel of land in the north-central portion of the plan from low density residential to medium density residential)
<i>Bylaw 13296</i>	Approved March 19, 2003 (to redesignate a parcel at the south-east corner of the intersection of Silver Berry Road and 34 Street from medium density residential to commercial)
<i>Bylaw 13373</i>	Approved May 5, 2003 (to amend the land use concept for the easterly portion of the plan area)
<i>Bylaw 13552</i>	Approved December 9, 2003 (to redesignate a 0.30 ha parcel from low density residential to medium density residential and to reconfigure the school/park site)
<i>Bylaw 14556</i>	Approved April 17, 2007 (to redesignate a portion of the commercial site at 34 Street and 28 A Avenue from commercial to public utility)

Editor's Note:

This is an office consolidation edition of the Silver Berry Neighbourhood Structure plan, Bylaw 10818 as approved by City Council on December 14, 1994. This Plan is an amendment to The Meadows Area Structure Plan, Bylaw 13531 as approved by City Council on January 21, 2004. This edition contains all amendments and additions to Bylaw 10818.

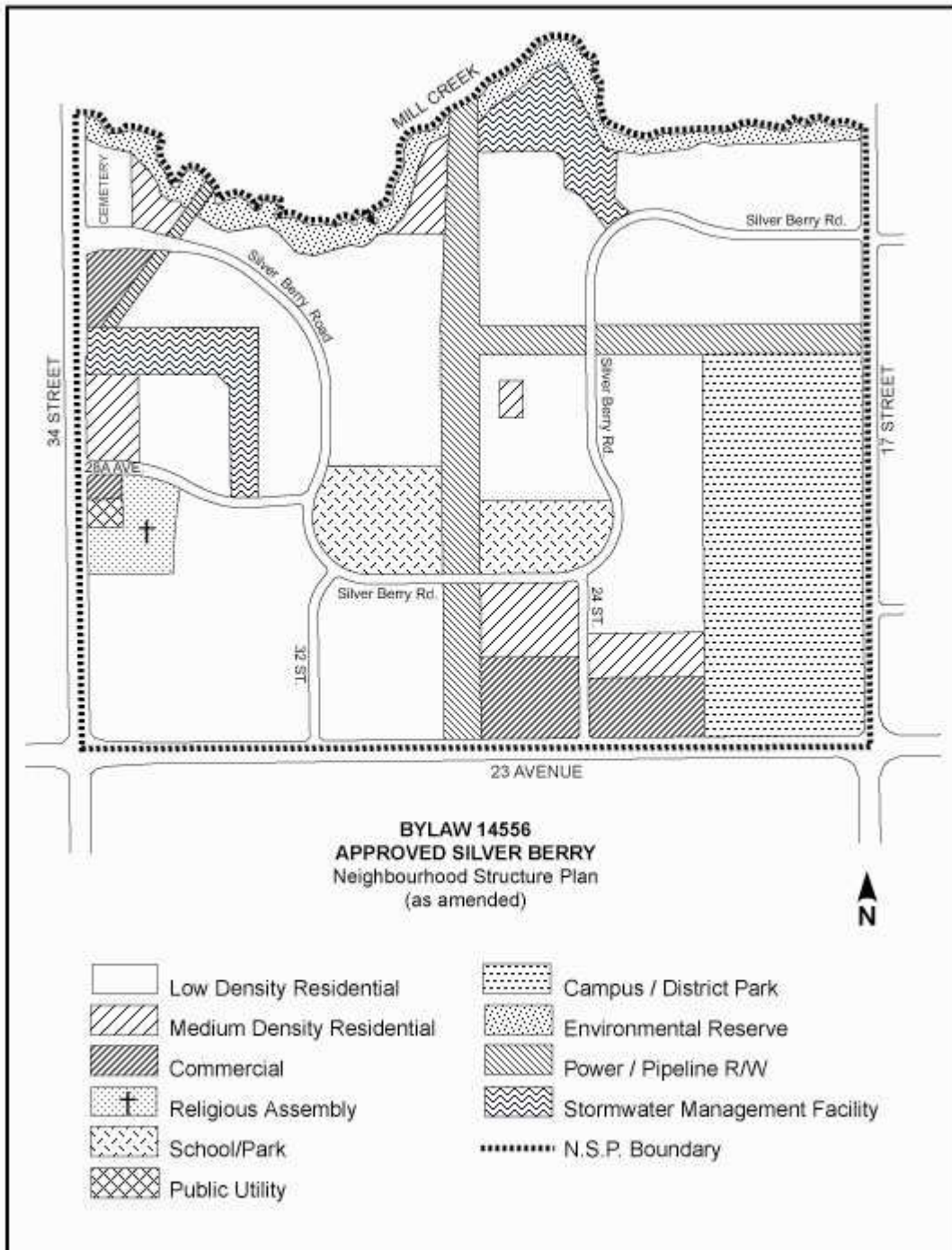
For the sake of clarity, new maps and a standardized format were utilized in this Plan. All names of City departments have been standardized to reflect their present titles. Private owners' names have been removed in accordance with the Freedom of Information and Protection of Privacy Act. Furthermore, 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

Silver Berry Neighbourhood Structure Plan

(As amended by Bylaw 14556, April 17, 2007)



**SILVER BERRY
NEIGHBOURHOOD STRUCTURE
PLAN**

TABLE OF CONTENTS

(Amended by Editor)

	Page
1.0 INTRODUCTION	1
1.1 Introduction	1
1.2 Neighbourhood	1
1.3 Report Format	1
2.0 PHYSICAL ENVIRONMENT	4
2.1 Site Features	4
2.1.1 Topography	4
2.1.2 Soils	7
2.1.3 Drainage	7
2.1.4 Vegetation	8
2.1.5 Existing Site Features	9
2.1.6 Environmental Impact of Development	13
2.2 Existing Land Use	20
2.2.1 Ownership	20
2.2.2 Present Land Use	20
2.2.3 Surrounding Land Uses	21
2.2.4 Access	21
3.0 DESIGN CONCEPT AND DEVELOPMENT OBJECTIVES	22
3.1 Overall Development Objectives	22
3.2 Overall Design Objective	22
3.3 Residential Objectives	22
3.4 Commercial Objectives	23
3.5 Educational Objectives	23
3.6 Open Space Objectives	23
3.7 Transportation Objectives	24
3.8 Utilities Objectives	24
3.9 Existing Uses Objective	24
4.0 COMPLIANCE WITH RELEVANT PLANNING LEGISLATION	25
4.1 The Meadows Area Structure Plan	25
4.2 Edmonton General Municipal Plan	25
4.2.1 Objective 2A	25
4.2.2 Objective 2B	28
4.2.3 Objective 2C	29
4.3 Zoning Bylaw	30
4.4 Suburban Investment Strategy	30

5.0	LAND USE	38
5.1	General	38
5.2	Residential	38
5.3	Commercial	41
5.4	Institutional Lands	42
5.5	Open Space	43
5.6	Top of Bank Roadway Policy	44
5.7	Transportation Network	45
	5.7.1 Future External Roadway Network	45
	5.7.2 Circulation System	45
	5.7.3 Pedestrian/Bicycle System	50
6.0	ENGINEERING SERVICES AND UTILITIES	52
6.1	General	52
6.2	Storm Drainage	52
6.3	Sanitary drainage	54
6.4	Water Distribution	55
6.5	Gas, Power and Telephone	55
6.6	Stormwater Wetland Designs and Feasibility	58
7.0	IMPLEMENTATION OF THE DEVELOPMENT	61
7.1	General	61
7.2	Staging	61
7.3	Subdivision and Redistricting	61
7.4	Additional Studies and Requirements	61
	APPENDIX 1 LAND USE STATISTICS	64
	APPENDIX 2 MUNICIPAL RESERVE DEDICATION	65

LIST OF FIGURES

1.	CONTEXT PLAN	3
2.	PHYSICAL ENVIRONMENT	5
3.	SITE PARAMETERS AND CONSTRAINTS	6
4.	PROBLEMATIC AREAS	10
5.	PROPOSED LAND USE COMPARED TO EXISTING FEATURES	16
6.	LAND OWNERSHIP	18
7.	EXISTING LAND USE	19
8.	SANITARY SERVICES	36
9.	STORM SERVICES	37
10.	LAND USE CONCEPT	39
11.	ROADWAY NETWORK	46
12.	FUTURE TRAFFIC VOLUMES AM PEAK HOUR TURNING MOVEMENTS	47
13.	FUTURE TRAFFIC VOLUMES DAILY TURNING MOVEMENTS	48
14.	WALKWAY/BICYCLE PATH NETWORK	51
15.	STORM DRAINAGE	53
16.	SANITARY SEWERAGE	56
17.	WATER DISTRIBUTION	57
18.	STORMWATER MANAGEMENT FACILITY CONCEPT	60
19.	STAGING	62

1.0 INTRODUCTION

1.1 INTRODUCTION

The Silver Berry Neighbourhood Structure Plan outlines plans for development of an area totalling 205 hectares in the southeast sector of the City of Edmonton. The plan will provide a framework for the rezoning and subdivision of the area into a neighbourhood which will provide for a variety of housing types, commercial and institutional opportunities and recreational open space areas. With development potential ending in Mill Woods and Burnewood, commencement of the Silver Berry neighbourhood is anticipated in 1995.

Bylaw 12524
March 14, 2001

Amended by Editor

1.2 NEIGHBOURHOOD

The original Silver Berry Neighbourhood was located east of 34 Street, west of 17 Street, north of 23 Avenue and south of 34 Avenue (see Figure 1). The boundary was reconfigured in Bylaw Amendment 12524 resulting in the northern boundary being moved to Mill Creek. The original maps found in this document were not amended to reflect the new boundaries of the plan area.

Bylaw 12524
March 14, 2001

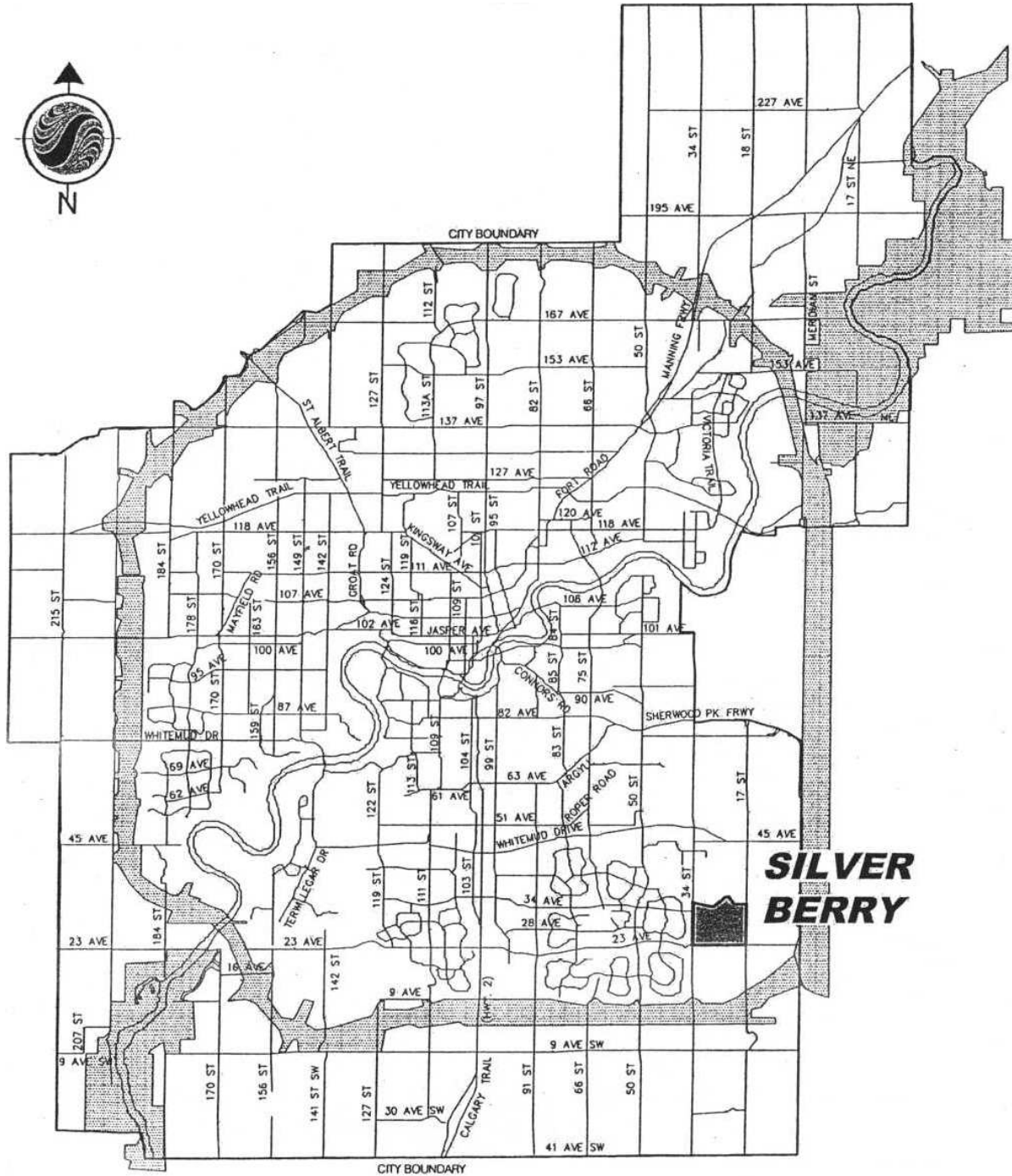
The Neighbourhood Structure Plan has been developed to conform with the intent, spirit and guidelines as set forth in the Meadows Area Structure Plan, Bylaw 8730 approved by Edmonton City Council in November 1987. In addition, the plan has been developed in accordance with the City of Edmonton's Terms of Reference for Neighbourhood Structure Plans. The Neighbourhood Structure Plan indicates the general pattern for subdivision development by designating land uses, general transportation network, location and size of neighbourhood facilities and scheduling of servicing.

1.3 REPORT FORMAT

The Silver Berry Neighbourhood Structure Plan is divided into seven chapters. Chapter 1 provides an introduction to the plan. Chapter 2 provides the existing physical constraints and man made features within and abutting the plan area and their effect on the plan area. Chapter 3 outlines those development objectives for the neighbourhood, a statement on the overall development concept and the design approach used. Chapter 4 details how the plan complies with the statutory planning documents in place. Chapter 5 describes the land use concepts proposed, as well as the overall transportation network. Chapter 6 deals with the identification and location of the proposed major utility infrastructure components relating to water, power, drainage, natural gas, electrical and sanitary

sewerage. Chapter 7 provides direction with respect to implementation of the plan. It approximates the most logical and efficient method of staging the development and further provides rational for the timing and need for development to commence in 1995.

Figure 1: Location Plan (Bylaw 13552, December 9, 2003)



2.0 PHYSICAL ENVIRONMENT

2.1 SITE FEATURES

As required for the preparation of this NSP, four separate reports were commissioned that, as part of their terms of reference, reviewed various aspects of the existing site features of the Silver Berry Neighbourhood. These reports were submitted with the original submission. The Environmental Audit has been revised and a copy is attached.

1. Environmental Impact Assessment for Meadows Neighbourhood 3; Penner and Associates Ltd.
2. Environmental Audit - The Meadows; Sentar Consultants Ltd.
3. Hydrogeological/Geotechnical Investigation; HBT Agra
4. Slope Stability and Setback; HBT Agra

The above reports were used to prepare the land use plan presented in this NSP. The issues raised in these reports were incorporated into the land use plan.

2.1.1 Topography

The topography of the land within the Neighbourhood consists of two separate components; the upland area and Mill Creek. The elevation of the uplands range from 711 metres AMSL to 720 metres AMSL (Penner, P.3). The lowest areas are adjacent to 34 Street and the highest areas are adjacent to 17 Street. The uplands are gently sloping with slopes of five to nine percent (5 to 9%) (Penner, P.3). The west half of the neighbourhood contains areas of gentle undulating land with slopes of less than five percent (5%). The southwest quarter of the plan is transected by a berm approximately 2 metres high. The berm is the remains of an abandoned railway line.

Various small areas were identified as seasonal and permanent wetland areas (see Figures 2 and 3). In some cases these areas are not natural and were created by a man made obstruction of a minor drainage course. The largest of the areas in the southwest quadrant was created by the construction of the rail line berm.

Figure 2: Physical Environment (Bylaw 10818, December 14, 1994)

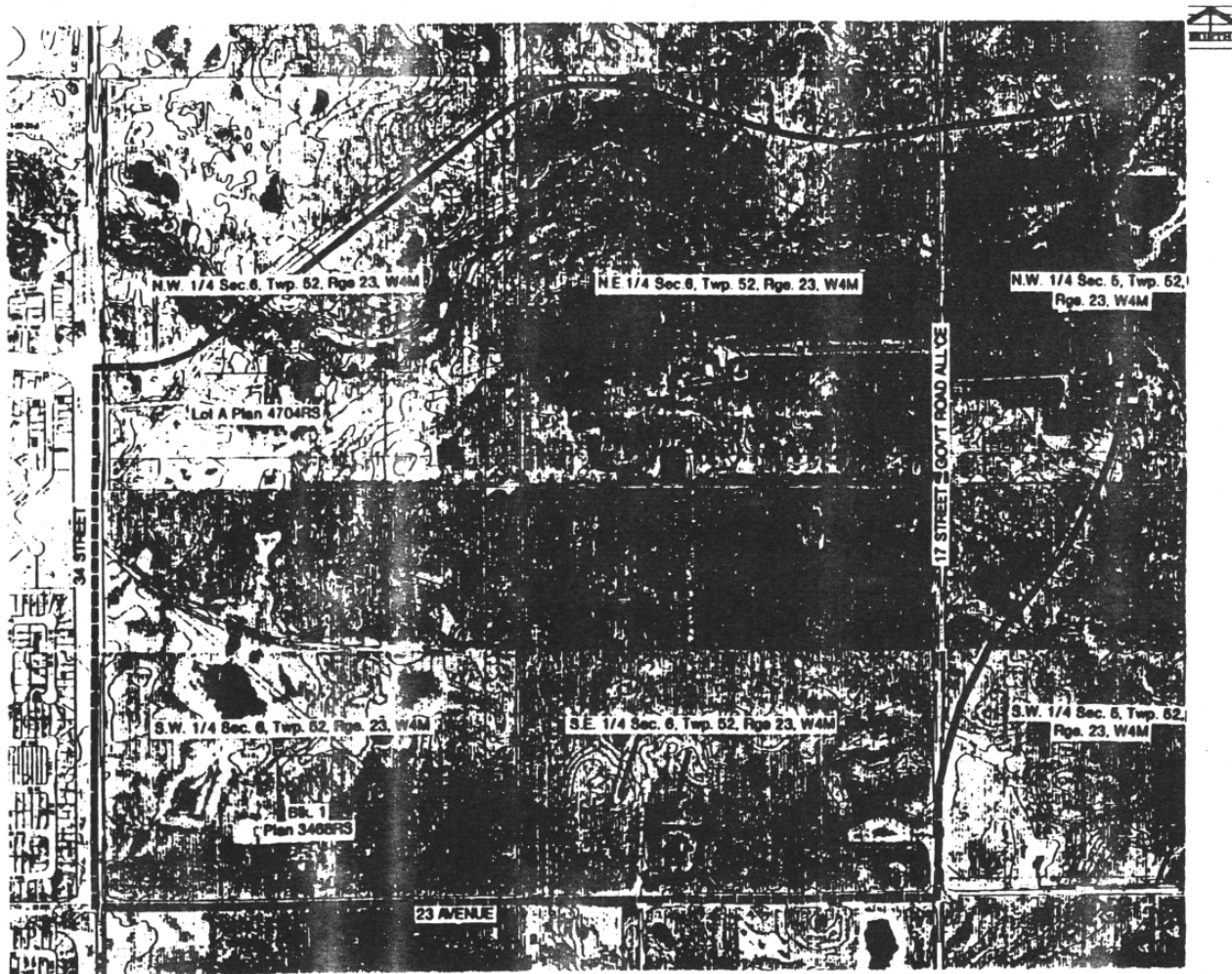
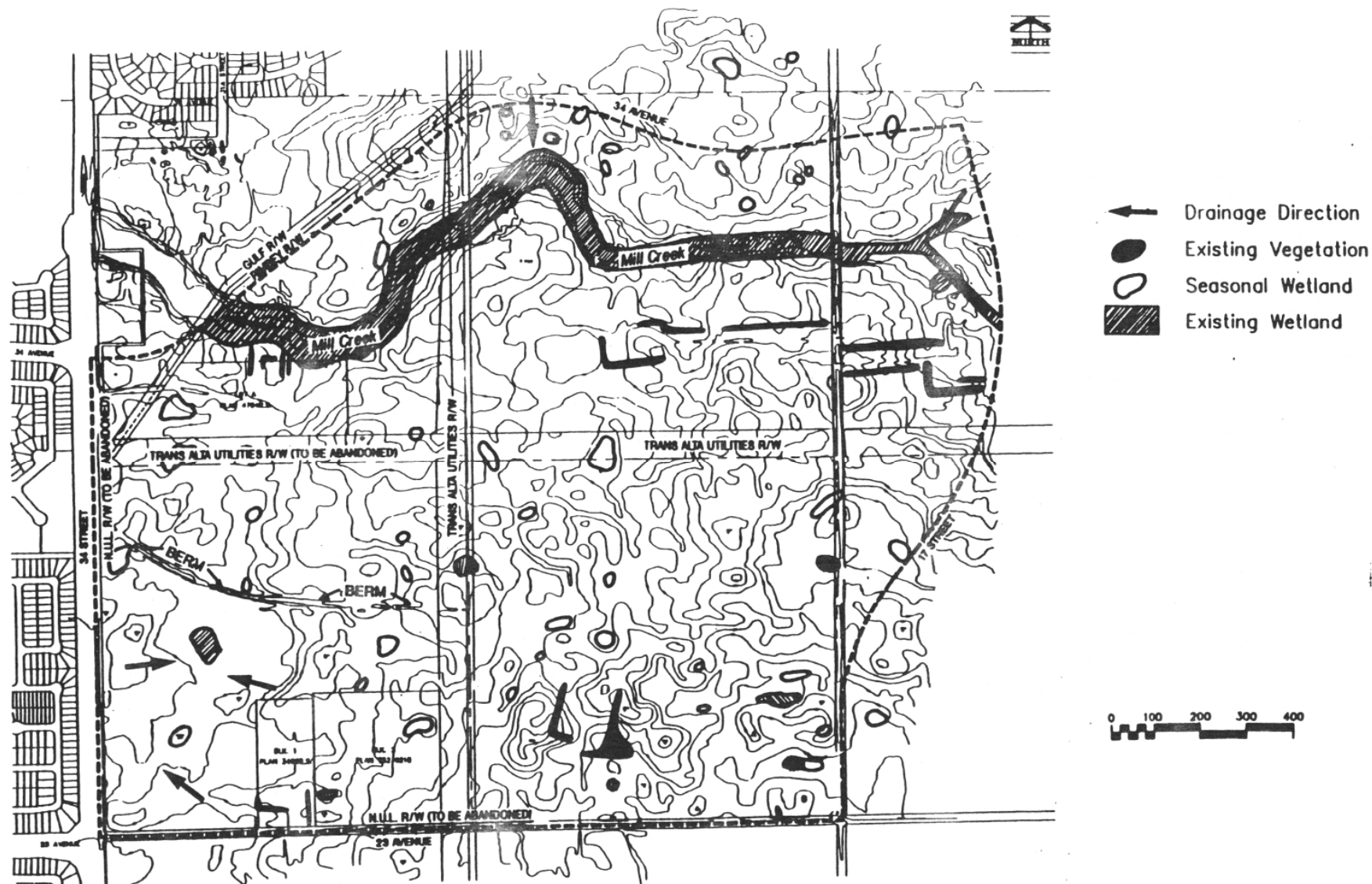


Figure 3: Site Parameters and Constraints (Bylaw 10818, December 14, 1994)



Sentar's Audit concluded that this was a private spur line that was abandoned prior to 1962 and poses no concern to the development of the neighbourhood. The berm interrupts the natural drainage to the north. The resultant wetland area, which is identified as a Natural Area in the City's sponsored inventory of Environmentally Sensitive and Natural Area Study, is of poor quality and is poorly supported by a small contributing area. The ultimate development of the neighbourhood is proposed to replace the wetland areas with a naturalized stormwater management facility further to the north.

Mill Creek comprises the most significant topographic feature within the plan area (see Figure 3). The geomorphics of Mill Creek change dramatically approximately midway between 34 Street and 17 Street. The western half of Mill Creek is a ravine approximately 5 to 7 metres deep ranging from 50 to 100 metres across at the top-of-bank with moderate to gentle slopes. The ravine is not as steep east of the *powerline utility* rights-of-way. East of 17 Street Mill Creek has been improved and reconfigured into a ditch by the farmer of the lands so as to maximize the cultivatable lands.

Amended by Editor

2.1.2 Soils

A reconnaissance of the property has been conducted and available surficial and geological data reviewed. This preliminary investigation of the development indicates that the soils will pose no apparent constraints to development. The Canada Land Inventory Soil Capability for Agriculture, classifies soils within the area as Class 1 and 2 with the majority of the land being Class 2. Class 2 soils have moderate limitations that restrict the range of crops or require summer fallow more frequently.

A hydrogeological/geotechnical report has been prepared by HBT Agra Limited (3 February 1994) under separate cover and indicates that there will be no hydrogeological or geotechnical impediments to development (HBT, P.1). Copies for interested departments will be provided upon request.

2.1.3 Drainage

The Silver Berry Neighbourhood plan area is contained within the Mill Creek watershed. The water shed was part of a study undertaken by Edmonton Water and Sanitation Department entitled "Watershed Drainage Planning Study, Mill Creek, Fulton Creek and Gold Bar Creek," dated November 1982. The study recommended that development within the Mill Creek Watershed utilize stormwater management due to downstream constraints of both stream courses. A Neighbourhood Servicing Review has been submitted and approved by the Drainage Branch of the *Transportation and Streets*

Department which outlines drainage concepts for the neighbourhood in accordance with the recommendations of the Watershed Report (Section 6.0).

2.1.4 Vegetation

As with topography, the vegetation is divided into two areas: the uplands and the Mill Creek lands. A portion of the uplands have been cultivated with the remainder in fallow. The agricultural crops consist mainly of small grain and hay. The cultivation of the land has restricted natural vegetation to a few areas not used for agriculture. Due to the aforementioned, the remnant vegetation within the uplands consists of shelter belts, fence rows and other isolated pockets of shrubs and/or trees. The shelter belts within the area consist of white spruce or poplar.

Seasonal wet areas form marsh meadow complexes composed of reed grassed sedges, shrub sized willows and cattails. The plan area does not contain any Trees of Renown (Alberta Forestry Association, 1986) nor significant natural features as identified by Westworth and Krapik (1987) (Penner, P.10).

Development of the upland area will eliminate the sparse existing vegetation, however, the Penner Report recommended that some conifers in 4 areas be retained. However, these areas are not shown as natural areas in the "Inventory of Environmentally Sensitive and Natural Areas" undertaken on behalf of the Planning and Development Department. In discussions with the *Community Services Department*, it was felt that these conifers were not significant enough to retain by means of creation of small MR pockets, but instead, efforts would be made to retain these conifers on private lands.

Amended by Editor

The second area, the Mill Creek Ravine, supports a variety of vegetation types which include mixed wood forest (white spruce/balsam poplar) deciduous forest (balsam/aspen), shrub grassland and narrow riparian along the creek (Penner, P.10). The most noteworthy area is the mixed wood forest. This area is confined mainly to that portion of the Mill Creek Ravine adjacent to 34 Street. This area is characterized by a white spruce and balsam poplar canopy. The area also contains some paper birch, willow and alder. The understory consists of red-osier, dogwood wild rose and regenerating poplar, willow and aspen. Herbaceous cover varies with tree canopy and includes wintergreen, bunchberry, snowberry, pea vine, lungwort and hazelnut (Penner, P.11). The mixed wood forest ends approximately 500 metres east of 34 Street.

Vegetation in the Mill Creek Ravine will be maintained with two exceptions. Increased recreational use of the ravine following development will result in a moderate disturbance of the ravine vegetation (Penner, P.12).

2.1.5 Existing Site Features

To establish a detailed review of the existing site features IMC Consulting Group, on behalf of *a private corporation*, commissioned Sentar Consultants Ltd to complete a Phase 1 Environmental Audit on the Meadows property. This report reviewed all the Meadows properties owned by *this private corporation*. Therefore, only a portion of this report was applicable to the Silver Berry Neighbourhood. Amended by Editor

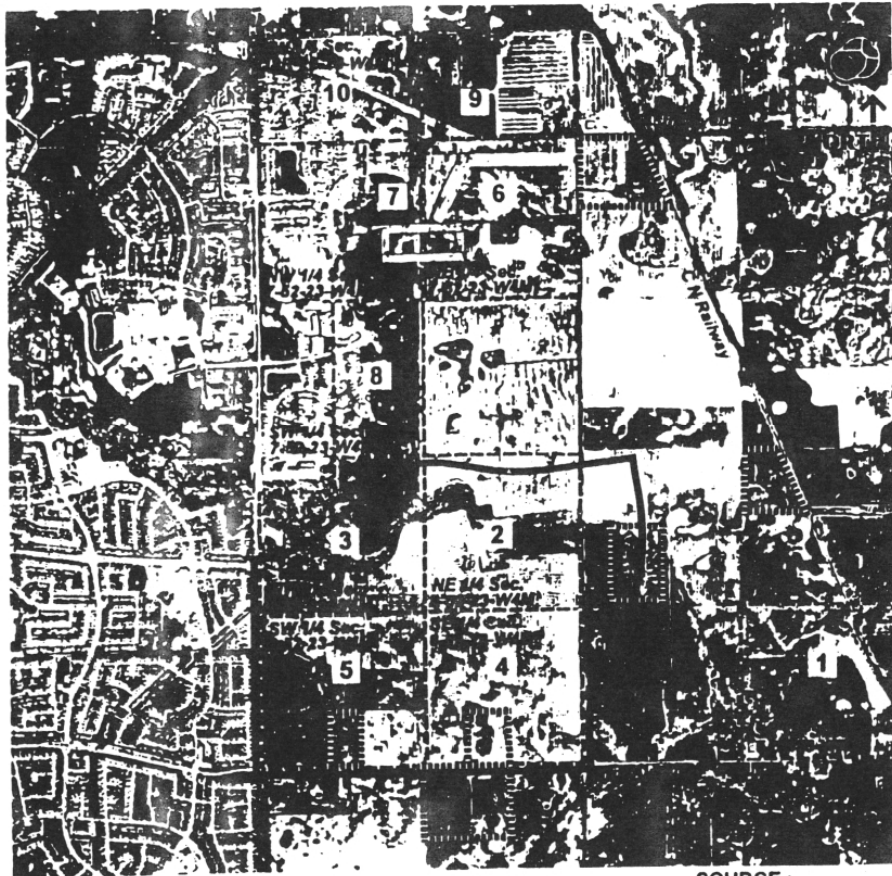
The report provided a review of all available current and historical area photographs of the property, as well as reviewing the current and historical land title documents and was determined to be adequate for the purpose of this review. A detailed visual site inspection was made of all available properties that Sentar was provided access to. Areas in which Sentar was not provided authority to access the property were highlighted and noted. In accordance with the Environmental Protection and Enhancement Act, they also reviewed all current and historical water well records and enquired as to past gas and oil drilling activities.

Sentar noted that the majority of the area was used for agricultural purposes. In the initial inspection of the lands in various areas of the plan, a farmhouse waste disposal pit was identified and subsequently restored. Follow up investigations confirmed this area was restored. The report outlined the following specific issues:

1. In the northwest quarter Section 6-52-23-W4M the Mill Creek Ravine meanders through the property. During initial and follow up inspections, it was noted by Sentar that the water in the creek was observed to be minimal. In the area approximately between 36 Avenue and Mill Creek Ravine, an area has been used for illegal dumping activities (Area 3 on Figure 4).

The debris included furniture, glass around fire pit area, wood and a very old 200 litre empty steel drum with no identified markings. There was no visible evidence of hazardous waste disposal.

Figure 4: Problematic Area (Bylaw 10818, December 14, 1994)



SOURCE:
1992 Aerial Photograph



- 1 Pt. of SE 1/4 Sec. 5-52-23-W4M
- 2 Pt. of NE 1/4 Sec. 6-52-23-W
- 3 Pt. of NW 1/4 Sec. 6-52-23-W4M
- 4 SE 1/4 Sec. 6-52-23-W4M
- 5 Pt. of SW 1/4 Sec. 6-52-23-W4M
- 6 NE 1/4 Sec. 7-52-23-W4M
- 7 NW 1/4 Sec. 7-52-23-W4M
- 8 Pt. of SW 1/4 Sec. 7-52-23-W4M
- 9 Pt. of 45 Ave. GRA adjacent to N1/2 Sec. 7-52-23-W4M
- 10 SW 1/4 Sec. 18R-22-23-W4M



Potential Problematic Areas

2. In review of the southeast quarter Section 6, shown as Area 4 on Figure 4, the major feature of the quarter section was noted to be a demolished milk barn. The land surrounding the homestead was used for agricultural purposes and in May of 1994 was being cultivated. It was noted that adjacent to the milk barn area, there was a considerable amount of debris and demolition materials associated with the building. Located approximately ten metres south of the barn was an old water well. Visual observations of the well indicated that it was in contravention of the Environmental Protection and Enhancement Act and should be abandoned in accordance with the new Act. This information was provided to *the private corporation* who will endeavour to have this work completed. Evidence of this proper abandonment will be provided prior to *rezoning* of this area of the plan.

Amended by Editor

3. Southwest quarter Section 6 is extensively used for agricultural purposes with a portion of the area being in crop. There is a single residence located in this quarter section which was a farmyard that now appears poorly maintained. (This area is shown as Area 5 on Figure 4). There is a disposal pit approximately twenty metres by five metres and two metres deep associated with the residence. There are also numerous truck dumps located on this site. This land is not owned by *the developer*, therefore restoration of the site is not possible at this time. Future restoration will be addressed prior to *zoning* of these lands.

Amended by Editor

Also noted on this quarter section was an old railway spur line. Sentar investigated the history of this line and noted that it was a privately owned line that was probably abandoned prior to 1962. The line was inspected on 6 November 1993 and was again re-inspected on 10 May 1994. During both inspections it was concluded the rail line did not compromise the surrounding areas in any way other than interrupting the natural drainage from the area south. This created a small depressional area immediately south of the spur line.

4. The SW quarter section of 5 has a farmstead located towards the SE portion of the quarter section. On May 10, 1994 during a follow-up visit to the region. Mr. Chris Horne of Sentar attempted to contact the individual(s) at the residence, but was unsuccessful. At this time, however, the residence did not appear to be used for farming purposes. There were no signs of petroleum storage tanks in the yard nor any questionable waste disposal practices.

Towards the SW portion of this quarter section, there was a large, dry slough. The agricultural portion of the quarter section was either in pasture, or was cultivated. There was also some standing water and some poplar and spruce trees present.

The wildlife observed were red winged black birds and several hawks.

5. On a portion of the NW 5, there is a farmstead with an associated tree nursery business. There is one above ground diesel storage tank, and one below ground gasoline storage tank. There was no visible soil staining in the vicinity of these tanks. Neither of the two septic fields at the residence showed any adverse effects. This farmstead should be considered a potentially problematic area because of the presence of an underground petroleum storage tank.

Mill Creek runs east to west through the northern portion of the quarter section. There was no evidence of refuse disposal in the creek ravine or elsewhere on this quarter section.

The agricultural portion of the quarter section consists of pasture or cultivated land. Elsewhere, there are scattered thickets of poplar and spruce trees.

In discussions with the City of Edmonton Planning Department, it was requested that Sentar further review areas adjacent to the Silver Berry Neighbourhood. In May of 1994 Sentar reviewed areas adjacent to the boundaries of the Silver Berry Neighbourhood. To the south of 23 Avenue immediately south of the Silver Berry Neighbourhood, a landscaping commercial business is in operation. Through conversations with the personnel at the landscaping business, Sentar determined that a petroleum retail business may have been formerly located in the northwest corner of the quarter section west of the landscaping business. The station was apparently damaged by the tornado in 1987 and

subsequently closed down. It is not known if any underground storage tanks from that site were ever removed.

In summary, the conclusions and recommendations of the Sentar report are as follows:

1. The vast majority of the property examined is used for agricultural activities. There was no visible evidence of vegetation stress or signs of spills relating to hydrocarbons, herbicides, pesticides or other chemicals.
2. Several pipeline companies have an easement to Sections 6 and 7-52-23-W4M relating to pipeline rights-of-way. These companies were contacted and there were no indications of any problems with their pipelines on the property in question.
3. An abandoned water well was found at LSD 2-6-52-23-W4M. This well may be in contravention of the new environmental act which came into effect September 1, 1993. This well should be abandoned according to these regulations.
4. The former petroleum business located at NE ¼ Sec. 31-51-23-W4M should be further investigated as to the extent of the decommissioning, and to ensure that there has been no possible contamination to the properties within Silver Berry.
5. The farmyard located in SW ¼ Sec. 6-52-23-W4M may warrant further investigation as this area is adjacent to the *private corporations' property* and any potential environmental concerns should be addressed. Permission to complete an inspection of the property was not obtained. Further investigation is required prior to redistricting of this area.
6. The tree nursery located at NW ¼ Sec. 5-52-23-W4M may warrant further investigation due to the presence of an underground petroleum storage tank. Further investigation is required prior to redistricting of this area.

Amended by Editor

2.1.6 Environmental Impact or Development

An Environmental Impact Assessment (EIA) was performed on the subject site by Penner and Associates Ltd. The EIA considered potential environmental impacts upon the site of the proposed neighbourhood, the surrounding lands, Mill Creek and the Mill Creek Ravine directly attributed to the proposed neighbourhood. The following potential

environmental impacts of the proposed neighbourhood and impact mitigation measures were reviewed:

- Existing and Surrounding Land Uses
- Land Use/Topography
- Geology
- Soils
- Vegetation
- Wildlife
- Fish
- Amphibians and Reptiles
- Surface Hydrology
- Groundwater
- Erosion
- Mines/Landfills/Storage Tanks
- Noise/Odour/Visual Impacts
- Historical and Archaeological Resources
- Recreational Facilities

In summary, the following issues were raised in the EIA:

1. Potential erosion and flooding of the Mill Creek Ravine could result from development of the neighbourhood. This potential for erosion and flooding is addressed with the inclusion of stormwater management facilities within the land use plan. These stormwater management facilities attenuate the urban runoff and discharge into the Mill Creek Ravine to a level that would ensure no flooding or erosion would occur.
2. The potential for deterioration of the water quality in Mill Creek was a

possibility due to the discharge of the urban runoff into the Creek. This potential is mitigated by the proposed plan by the incorporation of a wetland system utilized in conjunction with the stormwater management facilities. The facilities would be constructed as wetland detention facilities that would utilize naturalized vegetation to improve the water quality prior to discharge into the Mill Creek Ravine.

3. The crossing of the 34 Avenue arterial roadway across the Mill Creek Ravine between 34 Street and *utility corridor* was mentioned in the EIA (*This crossing was deleted in Bylaw 12524*).

Bylaw 12524
March 14, 2001
Amended by Editor

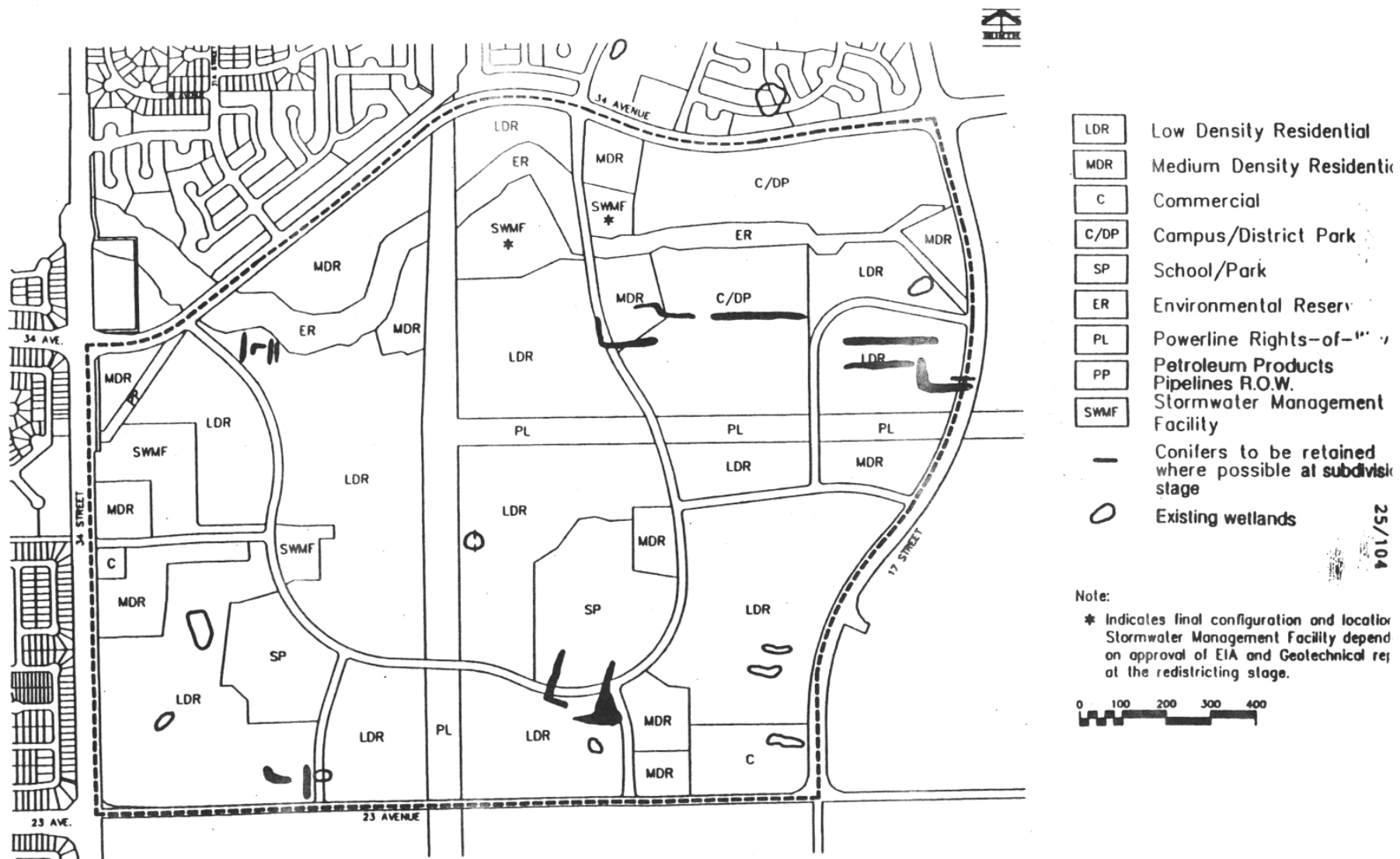
The EIA recommended that a specific Environmental Impact Assessment, in accordance with Section 3.4 of the North Saskatchewan River Valley Area Redevelopment Plan Bylaw 7188, should be completed to address any environmental issues of crossing the ravine in this location.

The impact of this crossing in regards to wildlife is also minimal, again due to the existing filled section and culvert crossing of the Mill Creek Ravine on 34 Street, which is approximately 200 metres downstream of the proposed arterial roadway crossing. This 34 Street crossing already provides an impediment to the wildlife in the area. The additional crossing within 200 metres of the existing crossing does not significantly increase the impediment to wildlife. This minor increase in effect on wildlife and on the natural environment of the ravine would be addressed in an EIA prior to MPC approval of any subdivision which has the effect of establishing the location of the crossing.

4. No abandoned facilities which pose an environmental hazard were identified in the EIA. Subsequent to the EIA being performed, *a private corporation* performed an Environmental Audit of the property to provide an inventory of the environmental situation. This was addressed in Section 2.13 of this report.

Amended by Editor

Figure 5: Proposed Land Uses Compared to Existing Features (Bylaw 10818, December 14, 1994)

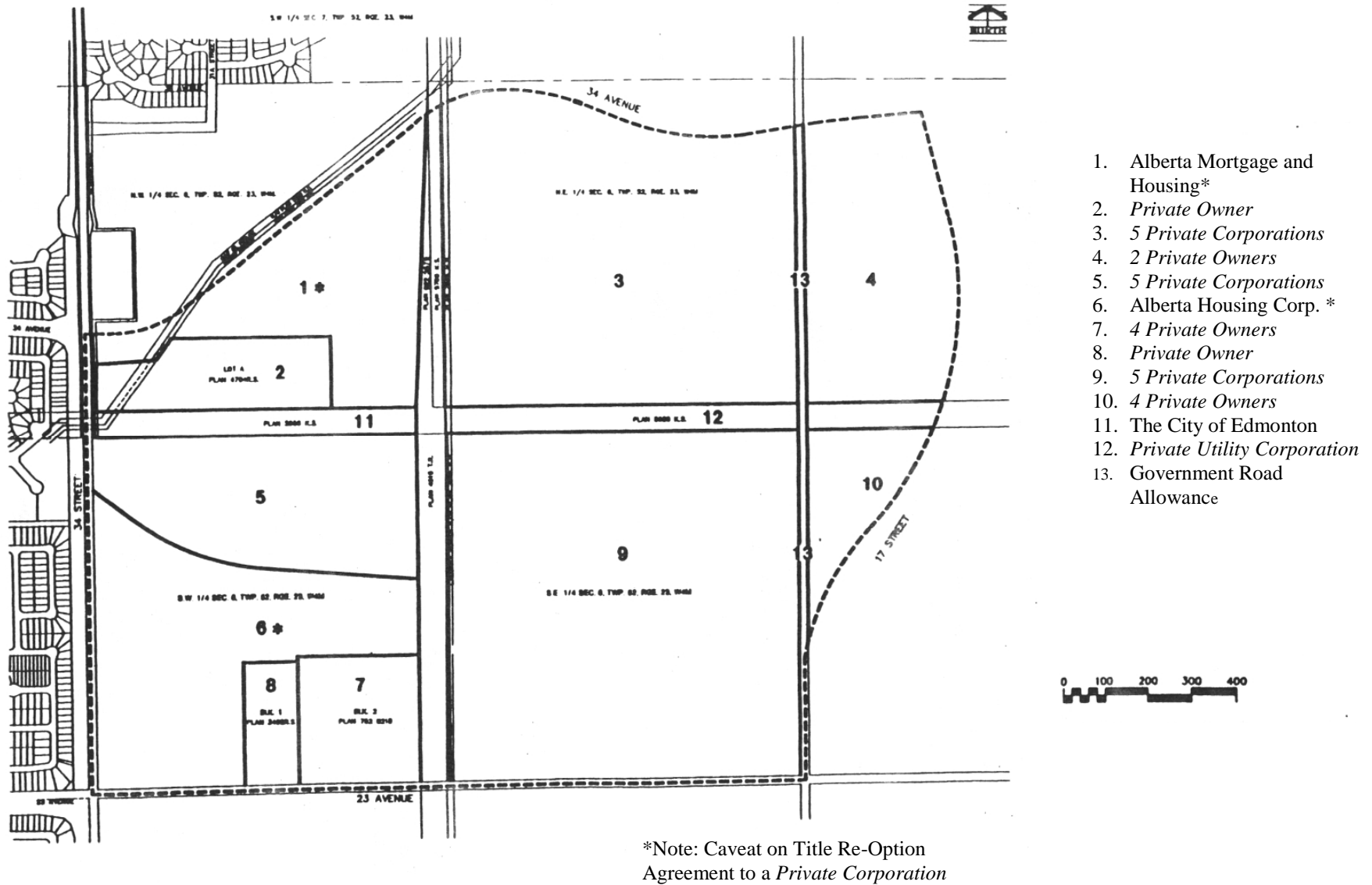


5. The EIA identified numerous seasonal sloughs in the uplands area, as well as 11 small permanent sloughs in the upland area (shown on Figure 4). These small sloughs are year round open bodies of water surrounded by reed grasses, all less than one acre in size. Two of these sloughs in the southern portion of the plan are identified as natural areas in the "Inventory of Environmentally Sensitive and Natural Areas Study" prepared on behalf of the City of Edmonton. The Penner report recommends that these two sloughs not be retained since subdivision development would alter the drainage patterns in the contributing areas which would adversely affect the integrity of the wetlands and survival of existing vegetation composition. Furthermore, these wetlands have no significant or unique vegetation or habitat for preservation. Penner stated that there were no trees of renown or any other significant or natural features in the proposed neighbourhood. Penner did outline that four noteworthy stands of trees in the upland areas containing conifers are noted and were recommended for retention. In discussions with the representatives of the *Community Services Department*, it was determined that these conifers are not sufficiently significant to be addressed by the creation of small MR parcels, however, efforts will be made to encourage retention of any significant conifers in these four areas within the private lots to be created at the subdivision stage or development stage. Some trees may be preserved by placing rear and side lot line coincident with treed areas so long as the altered drainage and grading does not affect the viability of the treed areas after subdivision. The permanent slough areas would also not be retained in the proposed land use plan, however, by creation of the naturalized wetland stormwater management facilities, an environment for any wildlife that is similar to that in these small sloughs will be recreated in the wetland areas. The actual recreated wetland areas being proposed in the stormwater management facilities are actually larger than the existing permanent slough areas contained within the neighbourhood plan.

Amended by Editor

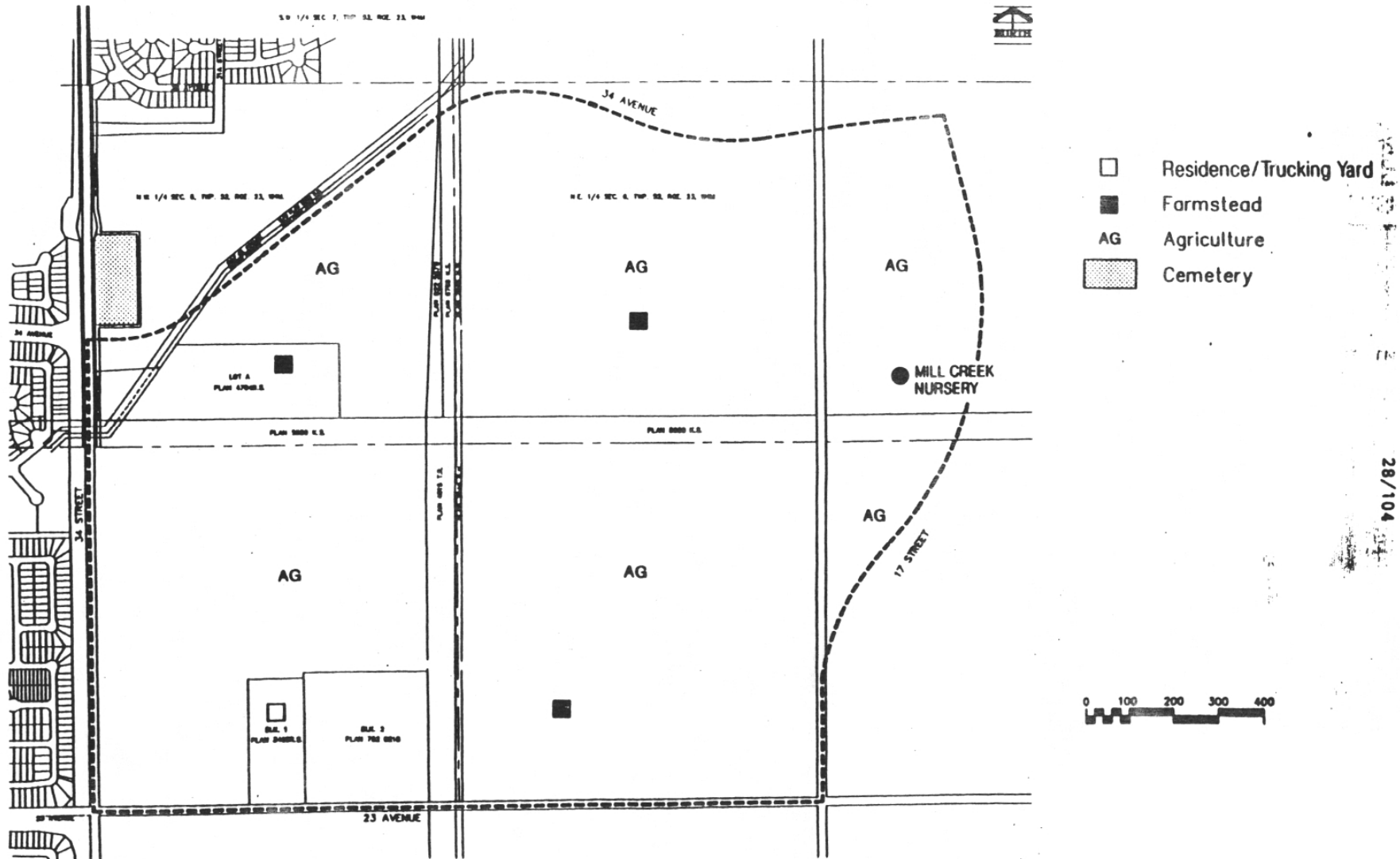
Figure 5 overlays the small permanent wetland areas on the proposed land use plan. The development of the land use plan is discussed further in Sections 3, 4 and 5 of this report, however, this plan indicates how the proposed plan affects the existing site features.

Figure 6: Land Ownership* (Bylaw 10818, December 14, 1994)



*Amended by Editor

Figure 7: Existing Land Uses (Bylaw 10818, December 14, 1994)



In summary, the overall environmental impacts of the proposed neighbourhood were determined to be normal for urban development by Penner's EIA report. No negative impact is anticipated on existing facilities and neighbourhoods in the Millwoods area. The proposed neighbourhood will not impact negatively on the adjacent environmental reserve lands being created with this neighbourhood. Table 7.1 outlines further environmental studies to be undertaken in conjunction with crossings of Mill Creek and stormwater facilities.

2.2 EXISTING LAND USE

2.2.1 Ownership

A private corporation is the management company for various *associated private corporations* and is largest land owner in the Neighbourhood. The land ownership is provided herein on Figure 6.

Amended by Editor

2.2.2 Present Land Use

The lands presently contain a variety of land uses. The predominant land use is agricultural with large portions of the plan area presently under cultivation for grain crops. In conjunction with the agricultural activity, a number of farmsteads exist within the plan area. In addition, a major landscape nursery exists east of the existing 17 Street in the northeast portion of the plan area (see Figure 7).

A number of utility rights-of-way exist within the plan area (see Figure 7). *A private corporation* has rights-of-way which bisect the plan area in both a north-south and east-west manner. The purpose of these rights-of-way are to accommodate power transmission lines. In addition to the *powerline utility* rights-of-way, the plan contains two pipeline rights-of-way in the northwest corner. The rights-of-way Plans 5398 RS and 3991 MC are held by *another private corporation* respectively and only affect the extreme northwest corner of the Neighbourhood Plan. The pipelines contain petroleum products and are under vapor pressure.

Amended by Editor

The existing utility rights-of-way have been left as open space to provide for increased pedestrian circulation within the plan area. The pipelines will receive appropriate attention (in accordance with the Municipal Planning Commission Guidelines for the Integration of Transmission Pipelines with Urban Development) when construction proceeds in their proximity.

2.2.3 Surrounding Land Uses

To the south and east the plan area is bordered by 23 Avenue and 17 Street respectively and beyond these roadways is vacant land which is predominantly utilized for agricultural purposes. Though the present use is agricultural, these lands are covered by the Meadows Area Structure Plan which designates them for future residential development of a scope and nature similar to the subject plan area.

The plan is contiguous with the fully developed Bisset Neighbourhood of Mill Woods to the west. The majority of lands which interface with the west side of Silver Berry are single family residential with the exception of *six medium density residential sites which abut arterial and collector roads, the north-south utility corridor, and commercial areas*. Correspondingly, the Silver Berry plan locates the more intense land uses of convenience commercial and medium density residential, in this general location so as to minimize the impact of these uses on the existing lower density development in Bisset.

Bylaw 13552
December 9, 2003

To the north, the plan is bordered by *Mill Creek and* the Wild Rose Neighbourhood. The Wild Rose Neighbourhood Structure Plan identifies primarily low density, single family residential development with some medium density and commercial development.

Bylaw 12524
March 14, 2001

The residential, commercial and school/park components of the plan are such that the majority of community needs will be provided for within the neighbourhood, thereby minimizing the impact on the infrastructure of the surrounding neighbourhoods.

Surrounding land uses, both present and future, will not negatively impact the subject plan. On the contrary, the proposed plan will positively affect surrounding lands, extending roadways and servicing infrastructure which will facilitate, at some point in time, additional residential development to the south and east.

2.2.4 Access

The Silver Berry Neighbourhood will be accessed by arterial roadways which surround the neighbourhood. 34 Street and 23 Avenue presently exist to the west and south and no changes to their alignment are contemplated in this plan. 17 Street to the east provides a major north-south connection to future development to the south. *A discontinuous collector between 34 Street and 17 Street will provide good access for local residents while discouraging short cutting traffic through the neighbourhood.* Collector access to Silver Berry will be provided from all four arterial roadways.

Bylaw 12524
March 14, 2001

3.0 DESIGN CONCEPT AND DEVELOPMENT OBJECTIVES

3.1 OVERALL DEVELOPMENT OBJECTIVES

The principal objective of the Silver Berry Neighbourhood Structure Plan is to provide a document which will serve as a guide for the future *rezoning*, subdivision, and subsequent development of those lands within the plan area.

Amended by Editor

3.2 OVERALL DESIGN OBJECTIVE

- To develop a primarily residential neighbourhood which will provide for a variety of housing opportunities. The neighbourhood will, when complete, be relatively self-sufficient with respect to the commercial, educational and recreational needs of its residents. The plan's design is such that it will be flexible enough to allow for minor changes in the pattern of land uses without the need for amendments to this plan or the Meadows Area Structure Plan Bylaw 8730.
- To provide for adequate transition between low density residential and low rise apartment housing by incorporating the use of transitional medium density zoning or, alternatively, by the incorporation of development guidelines to address such things as building setback, height and landscaping requirements.

3.3 RESIDENTIAL OBJECTIVES

- To offer the opportunity to develop a range of dwelling types which will satisfy the demands of the public.
- To create sub-neighbourhood sectors which are flexible to change at subsequent planning stages dependent upon area analysis and current market conditions and to allow for appropriate integration between sectors of differing land use.
- To provide for adequate transition between low and medium density housing by the incorporation of development guidelines to address such things as building setback, height and landscaping requirements, or, alternatively, to incorporate the use of transitional zoning in these areas.

3.4 COMMERCIAL OBJECTIVES

- To provide a community scale commercial site which will serve the sub regional commercial needs of the residents of Silver Berry and surrounding neighbourhoods in accordance with the Meadows Area Structure Plan.
- To locate commercial areas in a manner which will best serve the residents of Silver Berry.
- To locate commercial sites adjacent to arterial roadways so as to afford efficient and effective access.

3.5 EDUCATIONAL OBJECTIVES

- To provide for the requirements of the Public and Separate School Boards with respect to accommodating the students from this neighbourhood.
- To provide for appropriate school/park sites within the ten percent (10%) Municipal Reserve requirement pursuant to the Planning Act.
- To provide a campus site sufficient to accommodate the senior high school needs of the Meadows and parts of Mill Woods in accordance with the Meadows Area Structure Plan.

3.6 OPEN SPACE OBJECTIVES

- To recognize Mill Creek, the pipeline rights-of-way and the *powerline utility* rights-of-way, for their open space potential.
- To incorporate, where possible, the open space requirements of the school sites with parkland for the neighbourhood.
- To fulfill the statutory requirements of the Planning Act.
- To accommodate the active and passive recreational needs of the residents of Silver Berry.
- To preserve the ravine lands pursuant to the requirements of the Planning Act and to provide adequate access to these lands wherever possible in accordance with the City of Edmonton policy.

Amended by Editor

- To provide a district recreational facility site in combination with the school campus site that will satisfy the recreational needs of the Meadows Area.

3.7 TRANSPORTATION OBJECTIVES

- To provide an efficient hierarchical circulation system for vehicles, pedestrians, bicycles and public transit within the plan area.
- To provide safe and convenient access for vehicles, pedestrians, cyclists and public transit.

3.8 UTILITIES OBJECTIVES

- To integrate within the plan area where possible existing utility rights-of-way.
- To provide a servicing system and phasing sequence based on the extension of City services and utilities which are both economical and efficient.
- To utilize stormwater management facilities whenever possible as amenity features for the plan area.

3.9 EXISTING USES OBJECTIVE

- To allow for the continuation of existing uses until such time as the land is required for development.

4.0 COMPLIANCE WITH RELEVANT PLANNING LEGISLATION

4.1 THE MEADOWS AREA STRUCTURE PLAN

The subject Neighbourhood Structure Plan has been developed so as to comply with the intent of the Meadows Area Structure Plan Bylaw 8730. In this regard, the boundaries and land use of Silver Berry have been set in accordance with the criteria identified in the Meadows A.S.P. for Neighbourhood 3 (now Silver Berry). Adjustments to the alignment of 17 Street from the Meadows A.S.P. have been incorporated into the Silver Berry Neighbourhood as a result of the finalization of the City of Edmonton Facility plan for those roadways. These adjustments have resulted in a transfer of a small amount of developable land from Silver Berry to the adjoining Meadows Neighbourhood 7 to the east and a small amount of developable land from Wild Rose to Silver Berry. The land use statistics in Appendix 1 incorporate this change.

Bylaw 12524
March 14, 2001

4.2 EDMONTON GENERAL MUNICIPAL PLAN

The Neighbourhood Structure Plan has been prepared in accordance with those objectives outlined in Section 2. Suburban Area of the General Municipal Plan.

4.2.1 Objective 2A

Objective 2A of the General Municipal Plan is stated as “To accommodate growth serviced in an orderly and economic fashion, in all suburban areas of the City.”

The extension of services from Silver Berry will provide a portion of the Wild Rose Neighbourhood with servicing. Sanitary and storm sewer servicing for the eastern portion of Wild Rose will utilize the servicing infrastructure provided within Silver Berry. Water servicing trunks located on 17 Street are necessary for development of Silver Berry and provide additional support for parts of Wild Rose and Larkspur. It is therefore economically feasible and is, in fact, necessary to commence construction of Silver Berry prior to completion of the south portion of Wild Rose from the viewpoint of storm and sanitary servicing. See Section 4.4.4 on Page 33 for a thorough explanation.

Policy 2.A.1.

“Encourage new development to be contiguous with existing development.”

The subject plan area is contiguous with the existing residential development to the west contained within the Bisset Neighbourhood

Silver Berry is the third neighbourhood to be started in the Meadows. Larkspur and Wild Rose, currently under development, are providing lot inventory to meet demands north of Mill Creek. Residential development in Mill Woods is now substantially complete and expansion eastward across 34 Street south of Mill Creek is now appropriate.

Servicing constraints also support the contiguous development of the part of Silver Berry bordering 34 Street in conjunction with the Wild Rose Neighbourhood (Section 4.4).

Policy 2.A.2

“Allow the location of new suburban residential development to be guided by the demands of the housing market for choice in housing types and location and the availability of municipal services.”

Low inflation rates and low interest rates have resulted in housing becoming' an obtainable dream for more and more Canadians. The market that these people are attracted to is the first time buyer entry level market. The choice available to the first time home buyer is limited. It is envisioned that Silver Berry will provide entry level housing development that is no longer available in Mill Woods. In addition, servicing of eastern portions of Wild Rose which could accommodate this market sector will be dependent on servicing in Silver Berry and should therefore follow development in Silver Berry.

Policy 2.A.3

“Ensure the orderly and efficient extension of municipal services and discourage the inappropriate use of temporary services.”

Municipal services will be provided in accordance with the Servicing Standards manual as identified in Section 6.0.

No temporary services will be required as a result of the development of Silver Berry. Staged permanent servicing will be utilized wherever it is appropriate to do so.

Policy 2.A.4

“Allow market forces to determine the timing, location and extent of servicing in newly developed areas, but require a developer to pay for all on-site services and where appropriate, specific off-site services.”

The market forces dictate that the development of Silver Berry is required to meet the demand for entry level housing no longer available in Mill Woods and unlike that available in Wild Rose. Development of all on-site services will be the responsibility of the Developer and where appropriate, development of specific off-site services will be in accordance with the existing policies of Permanent Area Contribution utilized within the City of Edmonton.

Policy 2.A.6

“Ensure the use and protection of the natural topography and unique elements of the natural environment in the design and servicing of new suburban development.”

The plan makes provisions to protect the unique areas of natural topography and vegetation in accordance with the Planning Act and the City of Edmonton requirements and in conjunction with the recommendations contained in the Environmental Impact Assessment (Penner and Associates Ltd.) and the Phase I Environmental Assessment (Sentar Consultants Ltd.). In these reports the only natural environment that was determined to be significant was the Mill Creek Ravine. No other significant natural area was identified.

Policy 2.A.7

“Encourage development proposals which lead towards the completion of neighbourhoods and meet the service and amenity needs of residents within a reasonable timeframe.”

Development in Silver Berry will be programmed so as to expedite its efficient completion. Two planned major arterial roadways exist adjacent to the neighbourhood and all underground services will be extended from the north along 34 Street. The completion of a portion of Wild Rose is dependent on Silver Berry for servicing. The

efficient completion of Silver Berry will therefore allow for the completion of Wild Rose in accordance with this policy.

4.2.2 Objective 2B

The General Municipal Plan states as Objective 2B "Encourage flexibility in creating attractive and functional neighbourhoods." This objective has been adhered to in the Silver Berry Neighbourhood. Specifically, the plan meets a number of policy statements listed under Objective 2B.

Policy 2.B.1

“Provide planned, integrated neighbourhoods as the basis for new suburban residential developments, accommodating flexibility in neighbourhood size, population and geographic extent, and recognizing the need for municipal services and transportation facilities to be efficiently supplied.”

Silver Berry Neighbourhood is a planned integrated neighbourhood which contains a variety of land uses to meet the residential, commercial, recreational and educational needs of the residents. Furthermore, the plan recognizes the need for municipal services and transportation facilities to be efficiently supplied.

Policy 2.B.2

“Ensure neighbourhoods have adequate and timely access to neighbourhood level services including municipal services, parks and commercial facilities while recognizing that a school may not have to be provided in each neighbourhood.”

With Mill Woods almost entirely complete and Larkspur and Wild Rose neighbourhoods developing, a need will arise for the accommodation of senior high school students. Silver Berry contains a campus site for the accommodation of senior high schools within the neighbourhood boundaries and development in Silver Berry is required to ensure adequate and timely access to these facilities.

Policy 2.B.4

“Provide linkage between communities through the design and location of open spaces, community facilities and activity centers.”

The open space associated with the utility rights-of-way and the Mill Creek Ravine provide excellent pedestrian and bicycle linkages not found in many neighbourhoods. These linkages will connect the regional campus facility and the community and activity centers with open spaces and provide excellent access to these facilities for all residents.

4.2.3 Objective 2C

The third objective of the General Municipal Plan, Objective 2C, relating to suburban growth is as follows; to provide a range of housing types and density opportunities in each residential neighbourhood". The Silver Berry Neighbourhood abides by this objective. Specifically, the plan meets the applicable policy statements listed under Objective 2C.

Policy 2.C.1

“Encourage heterogeneous communities by planning for a variety of housing types, including multi family, in each residential neighbourhood.”

The subject plan provides for a variety of housing types which range from low density single family residential to medium density residential. Housing stock could include a range of single detached homes, semi-detached homes, row housing, stacked row housing or apartment housing.

Policy 2.C.2

“Encourage ground related multi family sites to be designed as an integral part of each neighbourhood on small blocks of land.”

The subject plan provides for development of a number of medium density/multiple family residential sites throughout the plan area which would be suitable for ground related projects. These sites would serve as transitional uses to minimize the impact of the higher intensity land uses on adjacent lower density development, therefore allowing for a smoother integration of these sites into the neighbourhood. Design guidelines could be incorporated into these sites where necessary to assist in minimizing any negative

externalities.

Policy 2.C.3

“Utilize detailed design guidelines in neighbourhood area structure plans for large concentrations of medium and high density multi family development.”

The subject plan provides for development of a relatively high concentration of medium density residential west of the *powerline corridor*. Design guidelines will be incorporated into the development of this site in accordance with GMP policy 2.C3.

Bylaw 12524
March 14, 2001
Amended by Editor

4.3 ZONING BYLAW

Amended by Editor

The Edmonton *Zoning* bylaw presently designates the land as AG (Agricultural). Prior to development, redistricting will occur which will correspond to the development proposed and be in accordance with the City of Edmonton Land Use Bylaw 5996 as amended.

4.4 SUBURBAN INVESTMENT STRATEGY

A Suburban Investment Strategy has been prepared by the City of Edmonton which evaluates the principles and actions associated with accommodating urban growth in the City of Edmonton. Relevant neighbourhood principles identified in the strategy are as follows:

1. That new neighbourhoods be contiguous with adjacent completed neighbourhoods.
2. That new neighbourhoods are necessary in order to meet servicing forecasts within the appropriate sector.
3. That funding be in place to provide for the required infrastructure or that the developers are responsible for all costs associated with the required infrastructure.
4. Adjacent neighbourhoods be completed prior to the development of new neighbourhoods.

The Silver Berry Neighbourhood satisfies the above criteria in the following manner:

1. "Contiguous With Existing Development"

Silver Berry is contiguous with development in the existing Mill Woods east of 34 Street, immediately adjacent to 34 Street and the west boundary of the proposed Silver Berry Neighbourhood. Therefore, with the development of the Silver Berry Neighbourhood, benefits are received to an existing development. These benefits are as follows:

a) Roadways

With the initial stages of the Silver Berry Neighbourhood, 34 Street from *Mill Creek* to 23 Avenue will be upgraded and constructed to an urban standard. This will provide a portion of a much needed completion of the 34 Street link between 23 Avenue and the Whitemud Freeway. This link will benefit the existing southeast development within the area of Millwoods.

Bylaw 12524
March 14, 2001

b) Water

Similar to roadways, the initial stages of the Silver Berry Neighbourhood will provide a link from *the former alignment of* 34 Avenue to 23 Avenue which will provide a benefit to the existing water network in the east Mill Woods area.

Bylaw 12524
March 14, 2001
Amended by Editor

Therefore, the development of the Silver Berry Neighbourhood will actually allow for completion of infrastructure that benefits existing adjacent development.

2. "Necessary in Order to Meet Servicing Forecasts"

Servicing forecasts within the southeast sector have been further evaluated using a land inventory analysis compiled by M. Doesburg Developments Ltd., in September 1993. The Doesburg analysis quantified the residential land absorption by Registered Plan in the southeast sector including Mill Woods, Burnewood and The Meadows communities. It was determined that during the 5 year period 1988-1992 subdivision plans for 573 acres (231.8 hectares) of land were registered. This can be equated to 115 acres (46.4 hectares) of subdivision development each year during the previous 5 years in this sector. In addition, 144

lots per year have been absorbed out of inventory since 1984. Average yields in this area are approximately 4 units per gross developable acre. Therefore, an additional 36 acres (15 hectares) were also being absorbed, for a total absorption rate of 150 acres (61 hectares) per year in this sector.

At the end of 1993, Mill Woods, exclusive of the Burnewood neighbourhood, is fully developed. Within Burnewood there is an estimated 106 acres (43 hectares) of undeveloped land remaining. Land available for development in The Meadows, excluding the higher density and commercial lands located in the east half of Larkspur and the lands in Wild Rose that cannot be serviced without Silver Berry (Item 4), comprise an estimated 203 acres (82 hectares). There are, therefore, approximately 309 acres (125 hectares) of land remaining for development in this sector.

With a supply of 309 acres (125 hectares) and a total absorption rate of 150 acres (61 hectares) per year, there is approximately only 2 years of residential development potential remaining in this sector. Approval of Silver Berry is therefore necessary in order to meet servicing forecasts in this sector.

3. "Funding for Required Infrastructure"

The infrastructure requirements necessary for the development of the Silver Berry Neighbourhood are as follows:

a) Transportation - Roadways

Arterial roadway improvements and construction necessary for the development of the Silver Berry neighbourhood in accordance with Section 7.2.1 Major Roadway Staging will be the responsibility of the developers of the neighbourhood. Timing of the various required facilities will be determined at the subdivision stage. All roadways will be constructed to the standards outlined in City of Edmonton Servicing Standards Manual or to the satisfaction of the *Transportation and Streets Department*.

Amended by Editor

b) Transportation - Transit

The necessity of funding for public transit will be addressed when population levels are sufficiently adequate to support transit service in the neighbourhood. At that time if funding is not available through the CPP

process, alternate means of funding will be investigated.

c) Transportation - Drainage

All trunk extensions and onsite requirements will be the responsibility of the developers. In addition, the development of the Silver Berry neighbourhood will provide through the Permanent Area Contribution system a return of \$1,262,000 based on 1993 rates, as repayment for infrastructure. Of this amount, \$305,000 will be repaid to the City of Edmonton with the balance being repaid to previous developers including the City of Edmonton as developer). The amount of \$305,000 identified as payable to the City of Edmonton is for the offsite and Alberta Mortgage and Housing Corporation financed facilities.

d) Water

A Water Network Analysis for the Silver Berry Neighbourhood has been completed and submitted to the Water Department. This report outlines the required sizing for water transmission mains necessary to service the Silver Berry Neighbourhood.

Under City of Edmonton current policy, watermain 600 mm and larger are funded through the CPP program. All water lines 450 mm and smaller are funded by the developer. In the case of the Silver Berry Neighbourhood, the only 600 mm line that is required is located on 17 Street between 23 Avenue and *the former 34 Avenue*. Currently water transmission mains are funded through the CPP. If funds are not available at the time this water line is necessary for continued development, the developer will be required to fund this line. It should be noted that this transmission is a sector requirement and not a neighbourhood requirement.

Bylaw 12524
March 14, 2001

e) Parks and Recreation

All open space development within the Silver Berry Neighbourhood, with the exception of school/park sites will be constructed at the cost of the developers. All neighbourhood school park sites will be serviced with development of the neighbourhood and the costs associated with servicing these sites is borne by the developer. Full development of this neighbourhood will contain approximately *9.5 hectares* of school park site exclusive of the

Bylaw 12524
March 14, 2001

major campus facility. The campus is an area facility and should not be included in the neighbourhood analysis of requirements and will be serviced in accordance with City policies and requirements.

In summary, the approval of the Silver Berry Neighbourhood is necessary in 1994 to accommodate the market demand for residential housing in southeast Edmonton in 1995 and 1996. Capital costs as identified above associated with development will be borne by the developers.

4. "Completion of Adjacent Neighbourhood"

One of the main principles of this Suburban Investment Strategy is that previously approved neighbourhoods should be completed prior to the development of new neighbourhoods. This report has demonstrated that there will be a need for this neighbourhood based on the demand for residential land in this area in 1995 and 1996. A portion of this demonstration was based on the fact that a portion of Wild Rose cannot be developed until such time as the Silver Berry Neighbourhood is developed. This requirement is as a result of the sanitary and storm servicing proposals for the southeast area of the Meadows. The storm and sanitary servicing for portions of the Wild Rose Neighbourhood are associated with the storm and sanitary requirements for Silver Berry Neighbourhood. This is discussed as follows:

a) Sanitary

The sanitary system in Silver Berry consists of an eastern and western basin. The western basin will tie into an existing 900mm sanitary sewer on 34 Street. The eastern basin will connect to the sanitary system in the Wild Rose Neighbourhood by crossing Mill Creek in a location near the northerly stormwater management facility and then to the sanitary trunk on 34 Street. This line is sized at 900 mm and is approximately 9 metres in depth. This line is the major trunk that will service the major portion of the remainder of the Meadows area further to the east of the Silver Berry Neighbourhood. As shown on Figure 8, this trunk also services the south half of the Wild Rose Neighbourhood. However, due to the cost of the extension of this line, it is unlikely that the developers of the Wild Rose Neighbourhood would be able to extend this line without the assurance that the Silver Berry Neighbourhood would develop in conjunction with their neighbourhood, and therefore reimburse up-front costs

Bylaw 13373
May 5, 2003

through the PAC cost sharing formula. If the Silver Berry Neighbourhood was not approved, the developers of the Wild Rose Neighbourhood would not have any certainty that recoveries would be forthcoming and therefore would be reluctant to front-end the cost of the 900 mm trunk without knowledge that additional lands would be available to provide the recovery. Therefore, the approval of the Silver Berry Neighbourhood will provide the necessary security to the developers of *the Wild Rose Neighbourhood* and will allow sufficient development to occur to ensure that the overexpenditures associated with the construction of the 900 mm sanitary sewer are repaid.

Amended by Editor

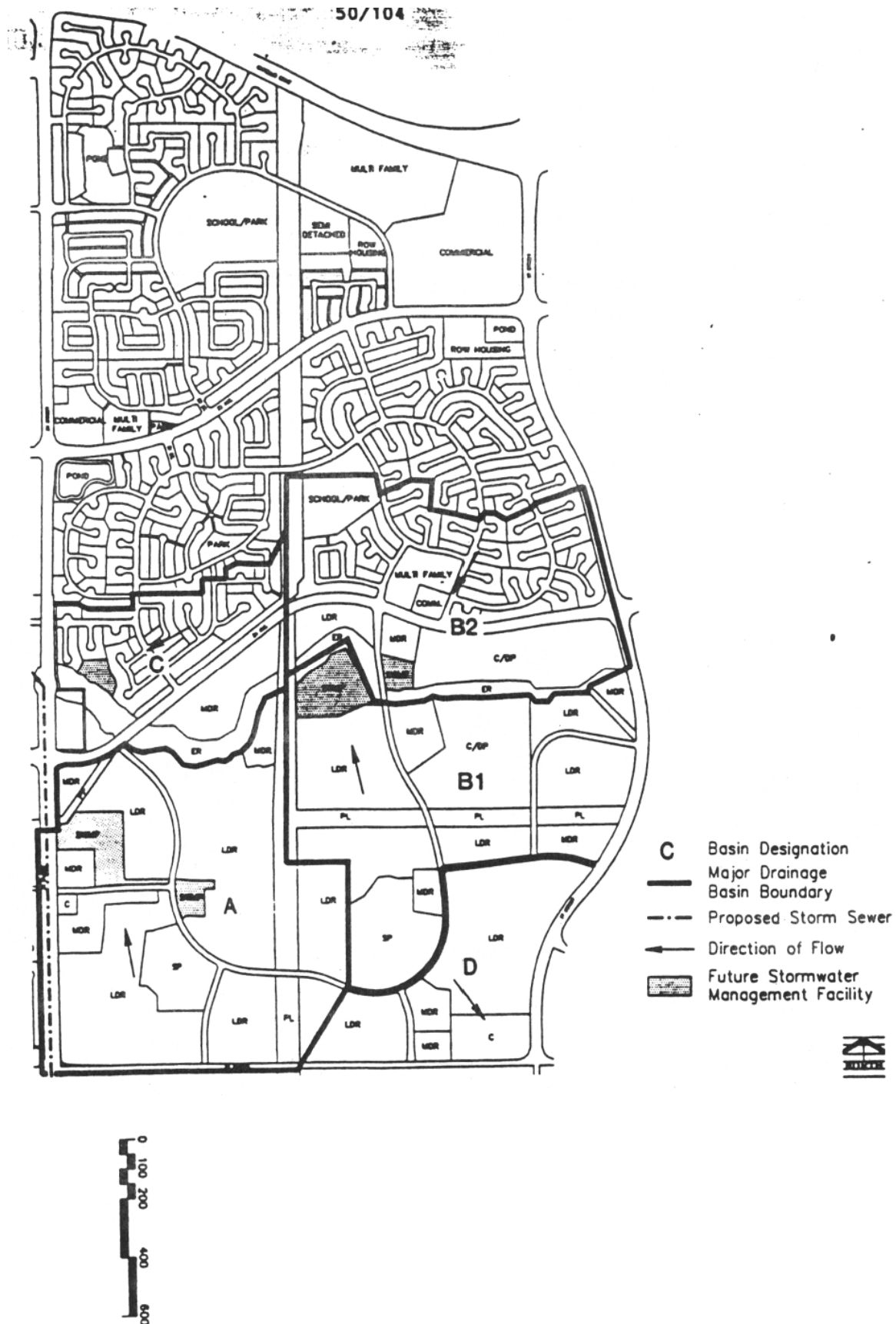
b) Storm Sewers

There is also an association of the Wild Rose Neighbourhood and the Silver Berry Neighbourhood pertaining to storm sewer servicing. As shown on Figure 9, the storm servicing of the southeast half of the Wild Rose Neighbourhood is associated with the majority of the east half of the Silver Berry Neighbourhood such that the Wild Rose Neighbourhood drains south into stormwater management facilities located within the Silver Berry Neighbourhood (Basin B2). Therefore, for development of the Wild Rose Neighbourhood to be completed, the stormwater management facilities must be designated and the Silver Berry Neighbourhood must be approved. This would ensure that the facilities would be located and that the Wild Rose Neighbourhood, if desired could then front-end and construct the stormwater management facilities in the Silver Berry Neighbourhood. However, approval of the neighbourhood is a prerequisite.

Therefore, the above two servicing constraints demonstrate why the Silver Berry N.S.P. approval and development is necessary to allow the completion of the Wild Rose Neighbourhood.

[illegible]

Figure 9: Storm Services (Bylaw 10818, December 14, 1994)



5.0 LAND USE

5.1 GENERAL

The following section provides a description of the various land uses contained within the plan area.

Discussion occurs with respect to the various residential types and densities, school/park site size and location of commercial opportunities in addition to the transportation network.

The plan has been developed to provide a heterogeneous community which meets the varied needs of its residents. (see Figure 10).

5.2 RESIDENTIAL

The majority of land within the neighbourhood is designated for residential purposes (86.19 ha). The plan, in accordance with the objectives of the General Municipal Plan, makes provisions for a range of dwelling types which permit a choice of accommodation. When completely developed, it is estimated that the neighbourhood will contain a population of approximately 5,800 people. This is slightly lower than that originally anticipated under the Meadows A.S.P. The difference can be attributed to the following changes:

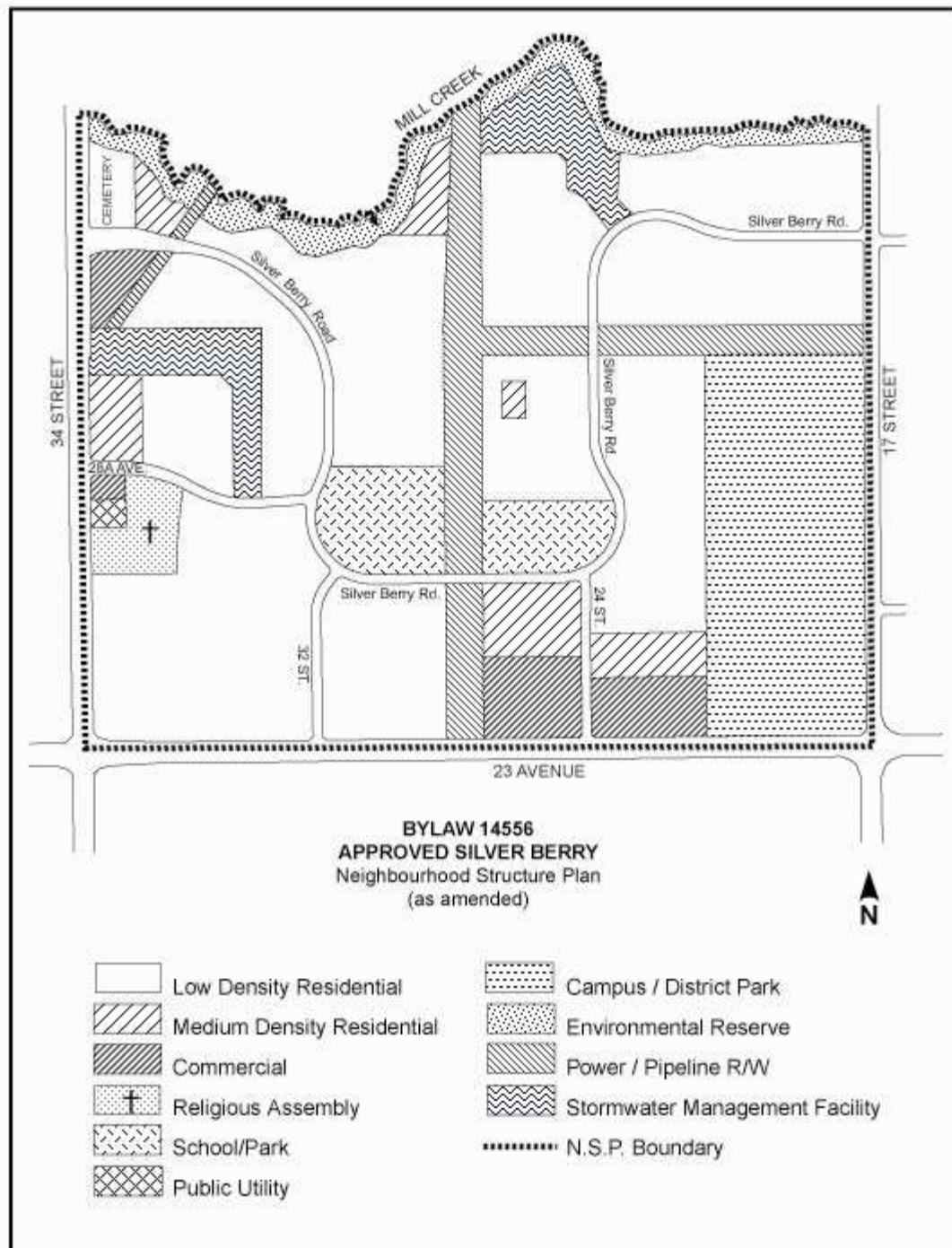
- Reduced overall area as a result of a realignment of 17 Street, as a result of the completion of the functional plans.
- Increased utility corridor and environmental reserve area as a result of a more detailed review of the plan area (Section 5.5).

The most prevalent residential type will be of the low density variety comprising approximately 65% of the total number of dwelling units within the Silver Berry Neighbourhood. The plan provides for single family detached housing with a range of lot sizes as provided by the various districts in the *Zoning* Bylaw. Hence, the variety of single family lots and detached housing product provided will be suited for a range of household incomes and will suit the first time purchaser and moderate move-up buyers. As well, within the low density sectors, semi-detached lots will be contained within the neighbourhood.

Bylaw 13552
December 9, 2003

Amended by Editor

Figure 10: Land Use Concept (As Amended by Bylaw 14556, April 17, 2007)



A variety of medium density multiple family residential lands have been provided for within the plan area. Medium density housing may include row housing, stacked townhousing with average built-out densities of approximately 37 units per hectare (upha) upon ultimate completion. Medium density housing may also include apartment housing and will result in an average built-out density of approximately 80 upha. So as to increase accessibility the majority of the medium density housing has been proposed adjacent to or in close proximity to the major arterial roadways which form the boundaries of the plan (*i.e. 23 Avenue and 34 Street*). Densities indicated above have been calculated using actual buildable criteria rather than maximum permitted bylaw criteria in order to obtain more realistic unit generation statistics, however, are not intended to restrict the maximum developability of each individual site.

Bylaw 12524
March 14, 2001

A smaller concentration of multi family land is proposed adjacent to the 34 Street entrance to Silver Berry. It is anticipated that special measures will be used at this location to ensure a quality development is produced. These measures will include architectural controls, additional development setbacks and landscaping considerations for these sites.

There are two other Medium Density Residential parcels located in the north central and central portions of the plan area. The north central site (1.93 ha) is bounded by Mill Creek on the northwest, the powerline utility corridor on the east and a proposed road along the south. The configuration and location of the parcel and necessary setbacks adjacent to the ravine will not permit the parcel to be subdivided for conventional single family homes.

Amended by Editor

Bylaw 13167
September 10, 2002

The Medium Density Residential parcel (0.30 ha) located in the central portion of the plan area is for the development of 18 “coach homes”. The placement of the MDR site amongst LDR designated lands is seen as appropriate as future development on the site will be relatively small in scale and compatible with abutting future LDR development which is intended for small lot single detached and semi-detached housing.

Bylaw 13552
December 9, 2003
Amended by Editor

A portion of all housing in the plan area may be provided for low-income households. The provision of such housing will occur in accordance with City-wide demand, the availability of required government subsidies and any related policies of Edmonton City Council.

A certain degree of flexibility will be required in regards to the proposed residential development. Alterations to the plan are expected over the development timeframe as changes in market conditions warrant.

Special medium density site deleted.

Bylaw 13296
March 19, 2003

5.3 COMMERCIAL

The plan provides for *four* commercial sites to meet the neighbourhood convenience commercial and community commercial needs of its residents.

Bylaw 13373
May 5, 2003

The neighbourhood convenience commercial needs of the residents will be served by *two* small commercial site located on 34 Street at the *two* major entrances serving the neighbourhood. It is proposed that *these sites* will be designed to include small scale convenience commercial uses catering to Silver Berry residents and designed so as to be compatible with the character of the existing residential uses west of 34 Street and the low and medium density sites proposed within *the east end of* Silver Berry. Uses for this site could include such things as convenience retailing, gas bars, and dry cleaners.

Bylaw 13296
March 19, 2003
Amended by Editor

Paragraph Deleted

Bylaw 14556
April 17, 2007

The community commercial site will meet the community level service needs of the Silver Berry residents, future adjoining neighbourhoods and the general vicinity. *The community commercial site is located in accordance with the Meadows A.S.P. along 23 Avenue. In addition, the site is split into 2 sites separated by the north-south collector roadway that intersects 23 Avenue.*

Bylaw 13373
May 5, 2003

The site has been sized in accordance with the Meadows ASP. Development of the site is expected to occur in the later stages of the neighbourhood at which time more detailed requirements of site size will be evaluated and developed based on contemporary needs.

5.4 INSTITUTIONAL LANDS

The plan provides a variety of institutional sites to meet the needs of the community. The institutional lands take the form of school/park sites and a District Park/High School Campus. The campus site is located in the *south-east* corner of the plan, *north of 23 Avenue* and west of 17 Street. The site, generally in accordance with the Meadows Area Structure Plan, will contain a district park and recreational facility in addition to both public and separate senior high schools. Prior to the construction of any buildings on the Parks/School Campus, soil tests must be undertaken for a proposed public high school site north of Mill Creek. These soil tests will confirm if that site is suitable for a senior high school. The schools recreational facilities and district facility will serve the sub-regions recreational needs given the scope of facilities proposed by the School Boards and *Community Services Department*. The site has been configured to permit a more equitable distribution of land between land owners and to recognize the constraints imposed by the Mill Creek ravine system. The above-noted location, though on the outside edge of the neighbourhood, is centrally located with respect to the entire Meadows Area Structure Plan.

Bylaw 13373
May 5, 2003

Amended by Editor

Two school park sites are located in the south central portion of the plan area. It is envisioned that these sites will accommodate a park as well as a public elementary school, a separate elementary/junior high school and a community league facility and will comprise an area of approximately 9.5 hectares. In order to maximize on-street parking opportunities across the street from the school/park site, located on the west side of the utility corridor, and minimize conflicts and congestion in the vicinity of the school site, the following measures are provided:

Bylaw 12524
March 14, 2001

Bylaw 12254
March 21, 2000
Amended by Editor

- *Minimize intersections between local roads and the collector fronting the school/park site across the street from the site;*
- *Housing across the street from the school/park site will back onto or flank the collector road, not front onto it.*

Furthermore, the location of the school/park site adjacent to the corridor provides an excellent linkage for safe pedestrian and bicycle connections.

Bylaw 12254
March 21, 2000
Amended by Editor

All school and park sites in Silver Berry will be assembled in accordance with Section 99 of the Planning Act.

Soils testing has been conducted on the proposed school sites and the School Boards are satisfied that the soils will not pose a constraint to the development of the site.

In total, approximately 42 ha of Municipal Reserve Land has been proposed within Silver Berry which is in excess of the 10% Municipal Reserve dedication required pursuant to the Planning Act (Appendix 2). Any Municipal Reserve lands required in excess of the ten percent (10%) statutory requirements will be purchased by the City or acquired through deferral of reserves into the neighbourhood.

Potential church sites have not been provided for within the plan area. Poor demand for sites in recent history has made the requirement for future sites questionable. With Religious Assembly being a discretionary use in most residential use classes, accommodation of church requirements can be met within any medium density residential site.

Other institutional uses will depend to a large degree on civic and provincial programs and policies in place at the time of development. Most uses, such as a police station, fire hall, library, social and health service centers, are to be located within the neighbouring communities.

5.5 OPEN SPACE

The open space component consists of the *powerline* right-of-way, the Campus site, the school and park sites, Mill Creek Ravine, walkways and stormwater management facilities.

Amended by Editor

The campus site and school/park site, discussed in the previous section, comprise the majority of the open space within the plan area, approximately 35 *hectares*.

Bylaw 12524
March 14, 2001

The second major open space component is the utility rights-of-way. The rights-of-way bisect the neighbourhood in a north-south fashion and the east half of the neighbourhood in an east-west direction. These rights-of-ways comprise an area of 18 hectares. In accordance with City of Edmonton policy and the agreement of the rights-of-way owners, the rights-of-way will be landscaped by the developer with due regard to maintenance and safety.

Small public utility lots will be provided throughout the plan area as required for the looping of water, the conveyance of overland storm flows and to accommodate sanitary sewer lines. These lots are most often leased to the abutting land owners in accordance with Civic policy. In addition, the plan will provide walkways to link the various residential cells with each other and the ravine. These walkways will accommodate pedestrian and bicycle movements and will be identified at the subdivision stage of development.

Perhaps the most attractive component of the open space system is the Mill Creek. Mill Creek traverses the plan from the northeast corner of the neighbourhood and extends westward across the northern portion of the neighbourhood.

In order to be sensitive to the environment, this plan maintains the ravine in its natural state as far east as possible. East of the *powerline* right-of-way, the ravine becomes a natural watercourse with moderate to gentle slopes to 17 Street and is intended to be utilized as a naturalized catchment area for stormwater runoff prior to entering the Mill Creek.

Amended by Editor

This naturalized stormwater management impoundment facility, constructed within the alignment of the Mill Creek drainage course, is in conformance with both the Meadows Area Structure Plan and the Watershed Plan for Mill Creek and Fulton Creek area. The naturalized concept of the stormwater management facility will enhance the neighbourhood and bring back the true characteristics of Mill Creek and still provide the necessary stormwater management for the surrounding urbanized neighbourhood. The naturalized concept also provides some treatment of the runoff prior to discharge into the creek system.

Development of the naturalized stormwater management impoundment facility will depend upon the necessary innovative engineering design and landscape architecture that will ensure the facility is self sustaining and provides the necessary stormwater management for the neighbourhood. The exact size and configuration of the facility will be determined prior to any redistricting occurring east of the major utility corridor or in southeast Wild Rose. As referred to on Table 7.1 - Additional Studies, an EIA for these storm water facilities will be required prior to *rezoning* on any lands within Basins B1 & B2 (*Basin B2 is has been removed from the plan area*). The storm water facilities may be required to be relocated or reconfigured depending on the results on the EIA. Relocation may require a Neighbourhood Plan Amendment if the storm water facilities are to be located away from Mill Creek.

Amended by Editor
Bylaw 12524
March 14, 2001r

5.6 TOP OF BANK ROADWAY POLICY

Any development adjacent to the ravine in Silver Berry NSP area will conform to the City of Edmonton Top-of-Bank Public Roadway Policy and will be subject to relevant development setbacks as determined by a geotechnical evaluation prior to subdivision.

Bylaw 12524
March 14, 2001

5.7 TRANSPORTATION NETWORK

5.7.1 Future External Roadway Network

The Meadows Area Structure Plan has identified four arterials which will border the Silver Berry Neighbourhood. The *three* arterials (23 Avenue, 17 Street and 34 Street) are identified as integral components of the City of Edmonton transportation network for the southeast and will accommodate the regional transportation requirements in Southeast Edmonton as well as meeting the access and transportation requirements of Silver Berry. Two lanes of arterial roadway are required for neighbourhood access. The other two lanes are required for city wide transportation requirements.

Bylaw 12524
March 14, 2001

All arterials will ultimately be constructed with a standard divided arterial cross-section. These arterial roadways will be phased by initially constructing two lanes of the ultimate four lane facilities and then completing them when traffic conditions warrant.

The alignments of the *three* arterial roadways shown on the NSP correspond to the approved functional plans of the City of Edmonton.

Bylaw 12524
March 14, 2001

5.7.2 Circulation System

The internal collector roadway system and the external arterial roadway network for the Silver Berry Neighbourhood is illustrated on Figure 11.

Bylaw 12524
March 14, 2001

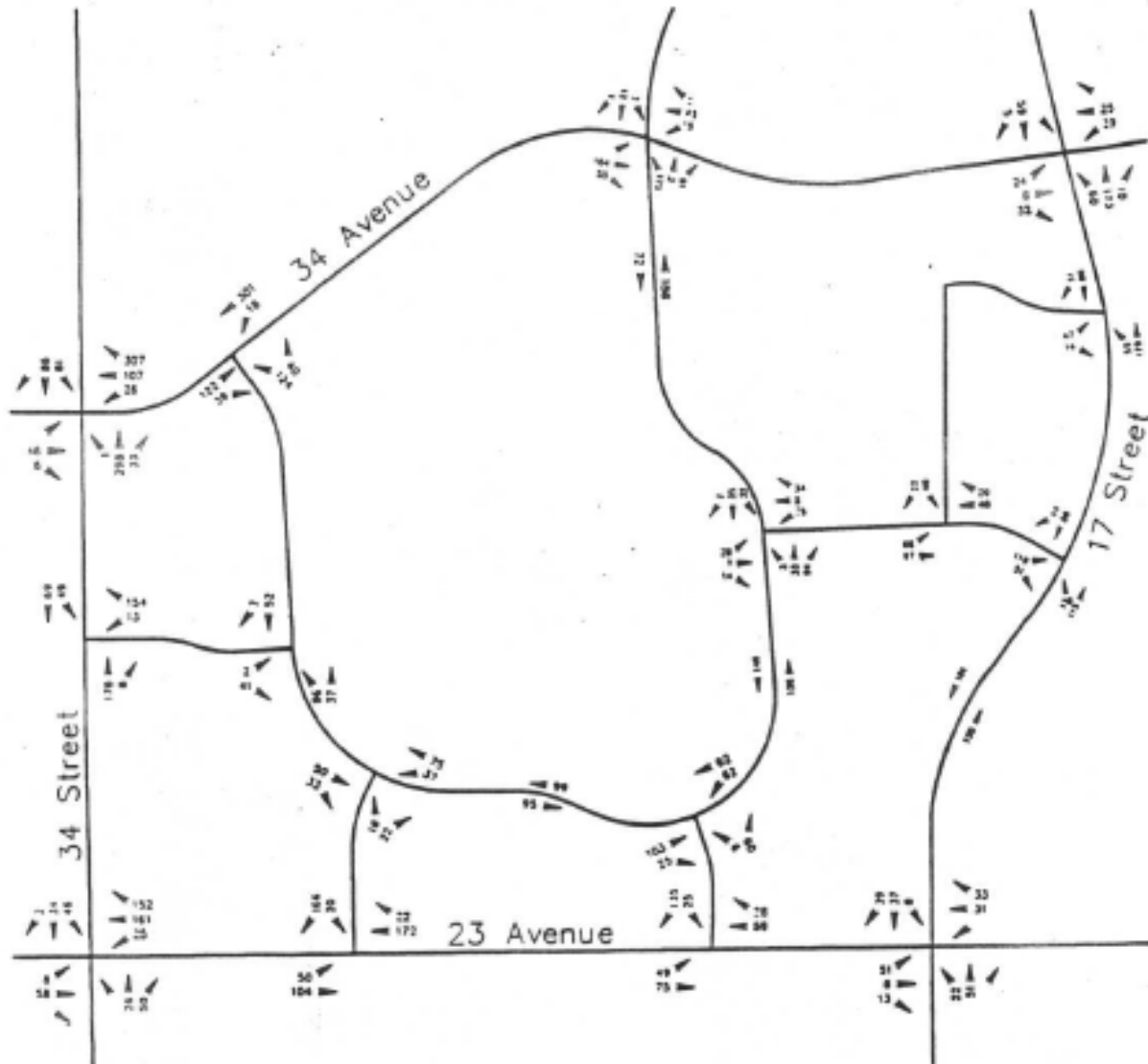
The collector loop which previously was to connect to the 34 Avenue arterial, is proposed to become a discontinuous collector between 34 Street and 17 Street. This discontinuous collector road system will provide good access for local residents while discouraging short cutting traffic through the neighbourhood. As two school/park sites are proposed to be located along this collector, it is appropriate to provide for reasonably direct connections to the arterial roadways. Collector links out to 34 Street, 23 Avenue and 17 Street are proposed. The number of arterial/collector access point to the local neighbourhood is maintained at five. This collector roadway system and the location of the access points to the arterial roads effectively separates local residential traffic from traffic destined for the District Campus and commercial shopping centre. Figure 12 and 13 illustrate the projected AM peak hour and daily turning movements generated by the Neighbourhood on the collector and adjacent arterial roadway network. In all cases, traffic volumes on the Neighbourhood collector roadways will not exceed desirable guidelines for these types of roadways.

Figure 11: Road Network (Bylaw 10818, December 14, 1994)



Figure 12: Future Traffic Volumes AM Peak Hour Turning Movement

(Bylaw 10818, December 14, 1994)



NOTE: BASED ON TRIP RATES OF 0.16 TRIPS/PERSON
DIRECTIONAL SPLIT: 20% IN / 80% OUT
DISTRIBUTION BASED ON WORK AND POST-SECONDARY EDUCATION TRIP DATA,
CITY OF EDMONTON, 1989

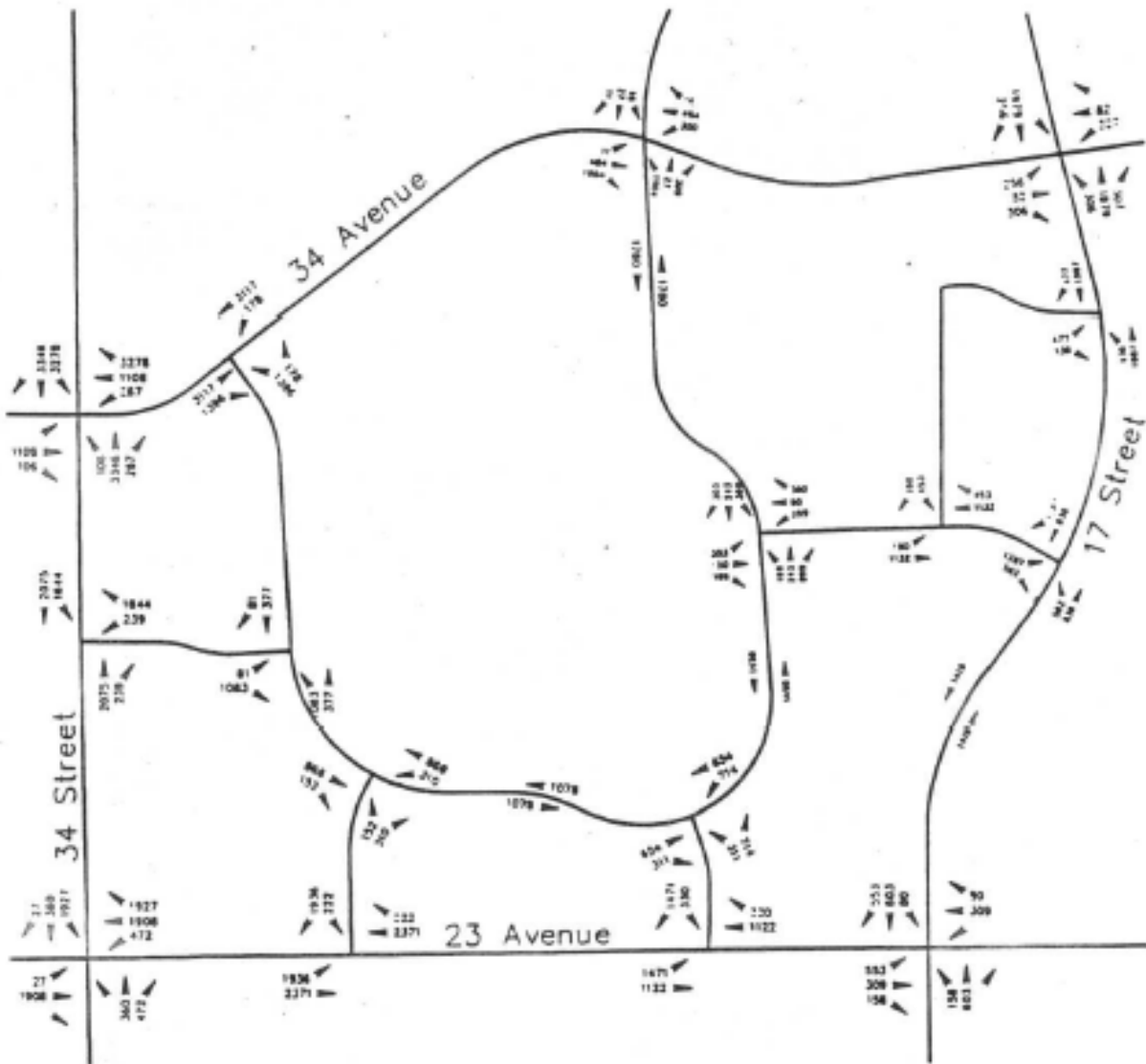
IMC
Consulting
Group



Figure 12
FUTURE TRAFFIC VOLUMES
AM PEAK HOUR TURNING MOVEMENTS

Figure 13: Future Traffic Volumes Daily Turning Movement

(Bylaw 10818, December 14, 1994)



NOTE: BASED ON TRIP RATES OF 9.2 TRIPS/SFDU AND 7.2 TRIPS/MFDU
 DIRECTIONAL SPLIT: 50% IN / 50% OUT
 DISTRIBUTION BASED ON WORK AND POST-SECONDARY EDUCATION TRIP DATA,
 CITY OF EDMONTON, 1989

IMC
 Consulting
 Group



Figure 13
 FUTURE TRAFFIC VOLUMES
 DAILY TURNING MOVEMENTS

The internal roadway network has been planned to accomplish two primary objectives. The first objective is to provide strong neighbourhood access that will allow residents of the neighbourhood an efficient means of exiting the neighbourhood onto the adjacent arterial roadway network. The second objective is to provide the ability to move within the neighbourhood to access school park sites as well as neighbourhood commercial sites without requiring the use of the external arterial system.

Bylaw 13373
May 5, 2003

Vehicular access to the District Campus site will be provided off of the 17 Street arterial road. One all directional access point will be provided to 17 Street directly, to the District Campus site. An additional right in/right out access will also be provided to the District Campus site off of 17 Street. Pedestrian access may be provided to the District Campus site from the west with the location to be determined at the time of subdivision. All access to the District Campus site is subject to detailed design and approval of the Transportation and Streets Department.

Bylaw 12524
March 14, 2001

The collector roadways will be designed to accommodate buses as necessary. Passenger access to public transit will be maximized through local street and walkway design at the subdivision stage, in accordance with Edmonton Transit's Guidelines.

Sidewalks will be provided along all roadways, in accordance with the City of Edmonton Design and Construction Standards. In addition to the road-based system, a network of pedestrian walkway facilities will be developed, along utility corridors, in storm water management facilities, along the Mill Creek (where no TOB roadway is provided and is approved by the City's Administration), and other locations, to provide pedestrian access to schools, neighbourhood recreation facilities, and public transit. The pedestrian walkways will also provide access to and across Mill Creek.

The first stage of construction of arterial roadways will include the construction of a 2.5 metres wide sidewalk, to be designated as a "Class 1" bikeway, and paved 3.0 metres wide multi-use trails will be developed in the major utility corridors, in accordance with current City policies.

All future developments within the Silver Berry Neighbourhood Structure Plan area are subject to the Arterial Roadway Assessment program established in order to equitably share arterial roadway construction costs among developers of land within the Arterial Roadway Assessment area. Details of the Arterial Roadway Assessment program can be obtained from the Transportation and Streets Department.

Noise attenuation supportive measures will be required for all residential development adjacent to the truck routes. At the time of the approval of the Plan Amendment, truck routes in the Meadows plan area are:

- *34 Street, from 23 Avenue to Whitemud Drive is a daytime truck route;*
- *23 Avenue, from 34 Street to Highway 14, is a 24-hour truck route; and*
- *17 Street, from 23 Avenue to Whitemud Drive, is a 24-hour truck route.*

The implementation of all roadways (arterial and collector) will be in accordance with the information and recommendations contained within the Silver Berry Neighbourhood Structure Plan Transportation Impact Study and the subsequent letters of revision. Details of the roadway information should be confirmed with the Transportation and Streets Department.

Bylaw 12524
March 14, 2001

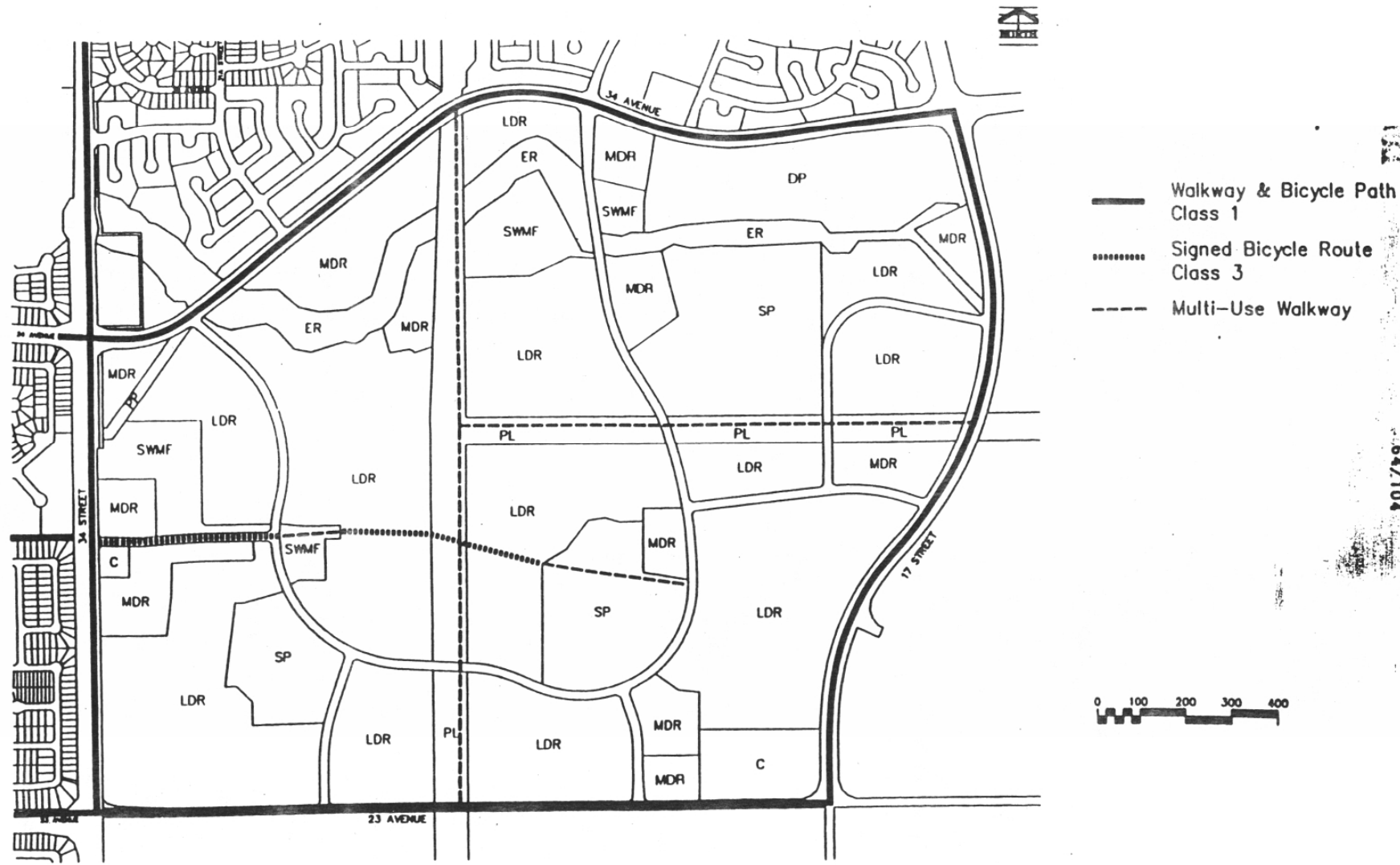
No direct vehicular access, other than those identified as arterial/collector access points of the neighbourhood, will be permitted to 23 Avenue, 17 Street and 34 Street from the adjacent residential development.

Traffic calming measures/alternatives in front of school/park sites in the neighbourhood can be explored to minimize impacts with adjacent land uses.

5.7.3 Pedestrian/Bicycle System

Pedestrians and cyclists for the most part will use the local road network for circulation purposes. An integrated system of walkways/bicycle paths has been provided to connect the school sites, parks and commercial area to the Mill Creek ravine and pedestrian/bicycle facilities on the adjacent arterial roadway network. In addition, walkways have been designed to provide convenient access to transit service planned to be within 400 metres of all residences. This integrated walkways/bicycle system as illustrated in Figure 14 and the pedestrian facilities provided adjacent to the local and collector roadways in the Neighbourhood will accommodate the residents needs.

Figure 14: Walkway/Bicycle Path Network (Bylaw 10818, December 14, 1994)



6.0 ENGINEERING SERVICES AND UTILITIES

6.1 GENERAL

This section of the report outlines the provision of municipal and utility services to Silver Berry including storm drainage, sanitary sewerage, water distribution, power, gas and telephone in general terms. More detailed information regarding Utility Servicing can be obtained from the Neighbourhood Servicing Review and Water Network Analysis for Silver Berry.

6.2 STORM DRAINAGE

The storm drainage concept for the Silver Berry Neighbourhood is outlined on Figure 15. As shown, the Silver Berry Neighbourhood is separated into *three* separate storm basins.

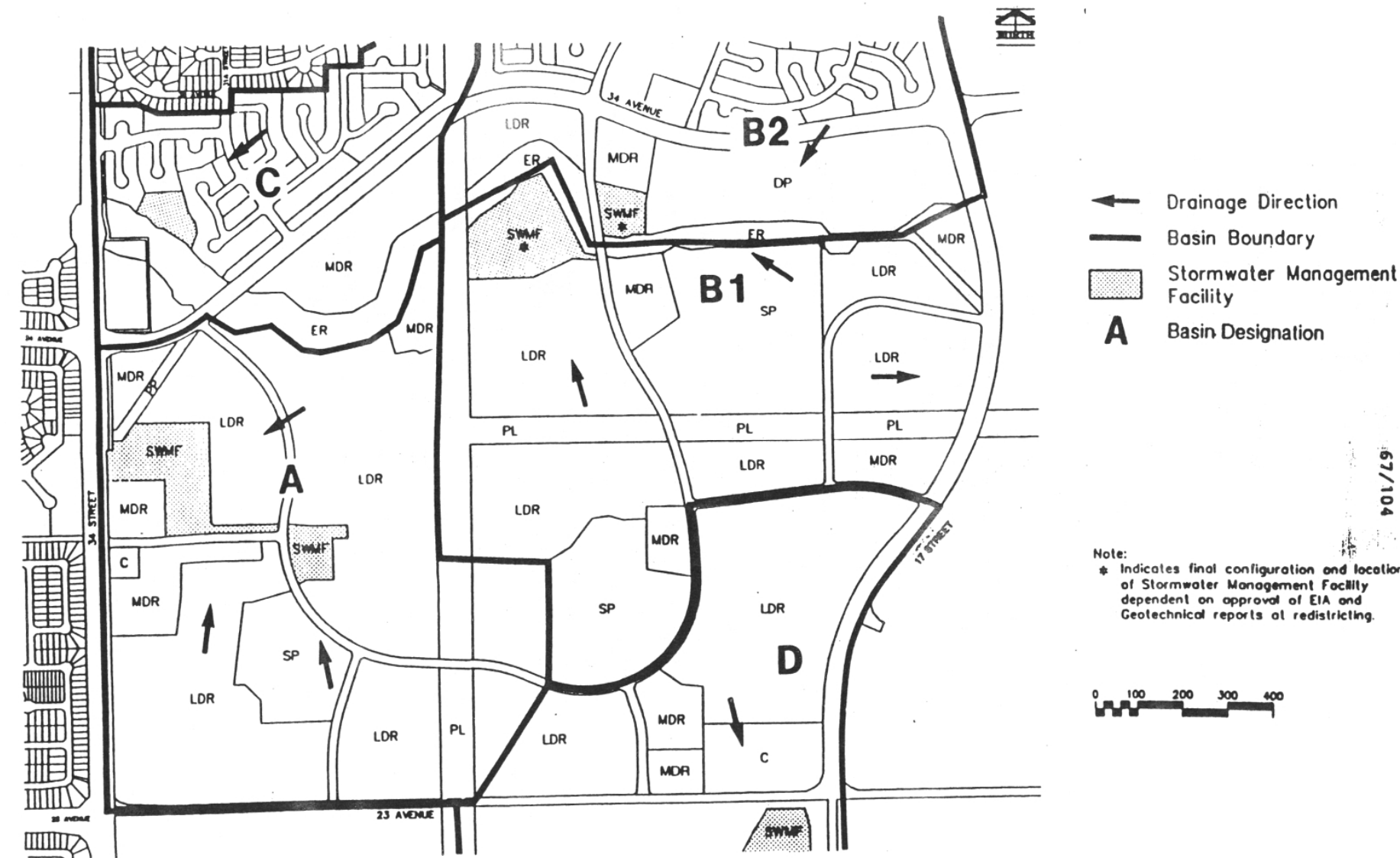
Bylaw 12524
March 14, 2001

Basin A, consisting of a majority of the west half of the neighbourhood, drains in northwest direction and will utilize a major and minor storm sewer system to convey flows to a stormwater management facility located adjacent to 34 Street. This stormwater management facility will attenuate flows to the pre-development rate outlined in the Watershed Report for the Mill Creek basin. This pond will discharge into the Mill Creek through a storm sewer outlet proposed on 34 Street. The outlet structure for this outlet sewer will be located immediately downstream of the existing culvert crossing 34 Street at Mill Creek. The stormwater management facility will be a wet pond facility. The facility will utilize a naturalized concept to reduce maintenance of the facility, as well as provide a degree of pre-treatment prior to discharge to the Mill Creek.

Basin BI & B2 (*Basin B2 is no longer part of the Silver Berry NSP area*) contain a majority of the east half of the neighbourhood and also contains the southwest quadrant of the adjacent Neighbourhood 2 (Wild Rose Neighbourhood). This area drains into the Mill Creek, which runs through approximately the middle of the basin. In accordance with the recommendations made in the Watershed Report for Mill Creek this basin will utilize 2 impoundment facility that will be located within the creek area and used to attenuate flows contributing to the facility.

Amended by Editor
Bylaw 12524
March 14, 2001

Figure 15: Storm Drainage (Bylaw 10818, December 14, 1994)



The area of the storm water management facility shown on Figure 15 is an approximation of the area that would be modified to create the ability to store runoff. Essentially, the facility would recreate a ravine type setting that would be used to store runoff. By the creation of a stormwater management facility within this area, the ravine type setting that exists west of the *powerline* right-of-way will be recreated in this area and serve also to store the urban runoff. The facility is proposed to incorporate naturalized vegetation, as well as to provide primary treatment to the stormwater runoff from the urban setting. This facility will essentially operate as a stormwater wetlands facility and is discussed further in Section 6.6. An EIA for this storm water management facility will be required to be supported by the Planning and Development Department prior to any *rezoning* being approved in Basin B1 and B2. Also, a Basin Stormwater Report will be required before any *rezoning* approval.

Amended by Editor

Bylaw 12524
March 14, 2001

Basin C (*Basin C is no longer part of the Silver Berry NSP area*)

Basin D represents a small area in Silver Berry located in the far southeast corner of the neighbourhood. This area drains south into a future stormwater management facility that eventually will drain north along 17 Street to Mill Creek. This system will be examined during the development of the adjacent neighbourhood located east of Silver Berry. In the event development of Silver Berry must be completed, interim storm storage can easily accommodate the storm system.

Further detailed information regarding the stormwater management facility can be obtained within the Neighbourhood Servicing Review submitted under separate cover to the *Transportation and Streets Department* Drainage Branch.

Amended by Editor

6.3 SANITARY DRAINAGE

The Meadows/Burnewood Area Master Plan has been completed and submitted to the City of Edmonton *Transportation and Streets Department* Drainage Branch for their review. This report outlines that the Silver Berry Neighbourhood would be serviced by the extension of the 900 mm sanitary sewer that exists in the Burnewood Neighbourhood. This sewer would be extended through the Burnewood Neighbourhood with the development of Burnewood and Kiniski Gardens to 34 Street. This extension is imminent as development is presently planned for this location. Figure 16 provides details of how various areas of the plan will be serviced. For further information please refer to the Silver Berry Area Master Plan Amendment submitted in July 1994 to the Transportation and Streets Department, Drainage Branch.

Amended by Editor

The sanitary system in Silver Berry consists of an eastern and western basin. The western basin will tie into an existing 900mm sanitary sewer on 34 Street. The eastern basin will connect to the sanitary system in the Wild Rose Neighbourhood by crossing Mill Creek in a location near the northerly stormwater management facility and then to the sanitary trunk on 34 Street.

Bylaw 13373
May 5, 2003

6.4 WATER DISTRIBUTION

Water servicing will be designed and constructed using conventional methods for providing peak hour and fireflows for single family, multi family, schools, churches and commercial usages. Water looping will be provided as required in the City of Edmonton Servicing Standards Manual.

A Water Network Analysis submitted to EPCOR was reviewed and approved. Water service for the east half of the Silver Berry Neighbourhood will be provided by extending watermains from the west half of the neighbourhood.

Bylaw 13373
May 5, 2003

6.5 GAS, POWER AND TELEPHONE

Power, gas and telecommunication services are all located within close proximity to the Silver Berry NSP and will be extended as required.

Bylaw 13373
May 5, 2003

Figure 16: Sanitary Sewerage (Bylaw 10818, December 14, 1994)

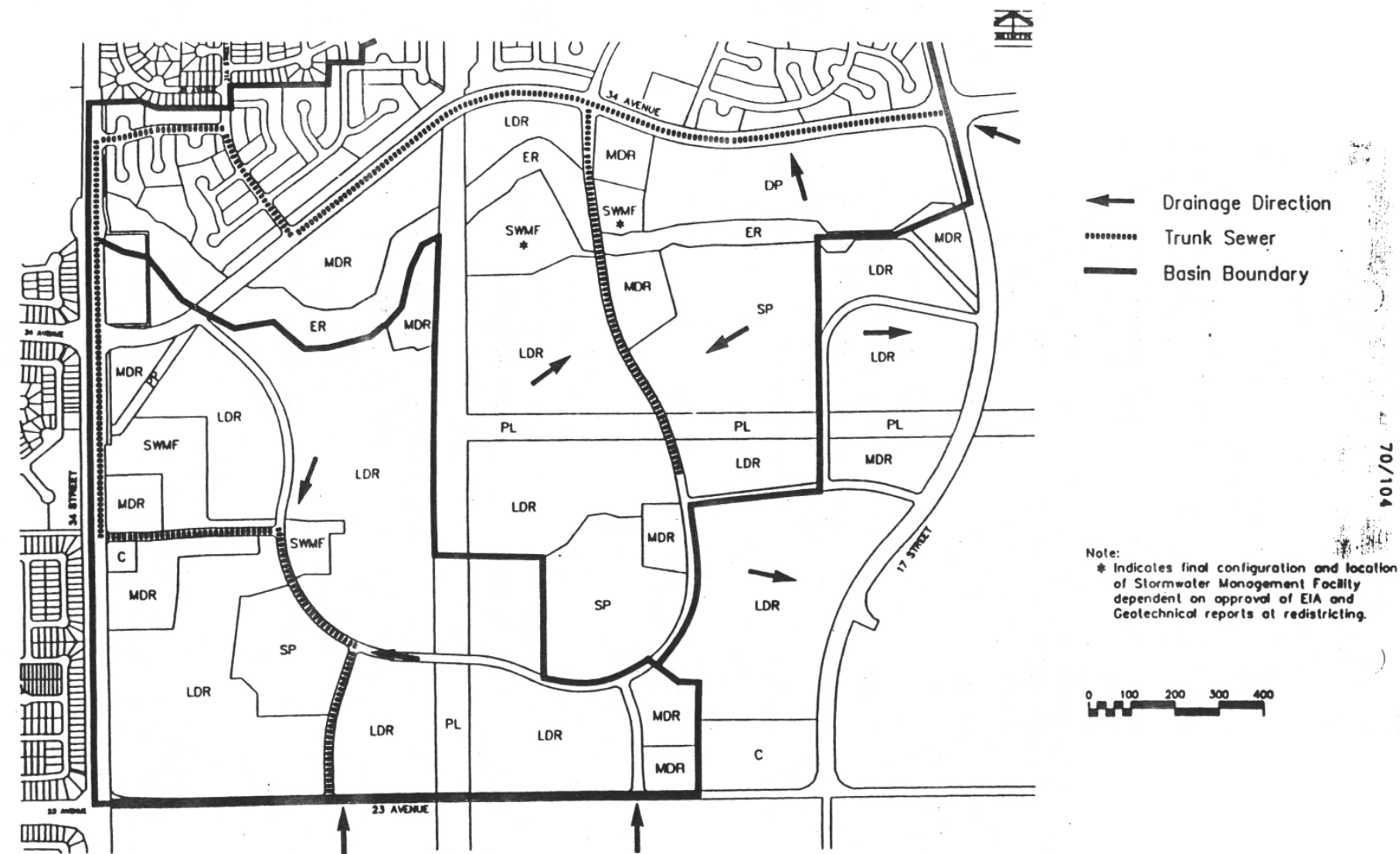
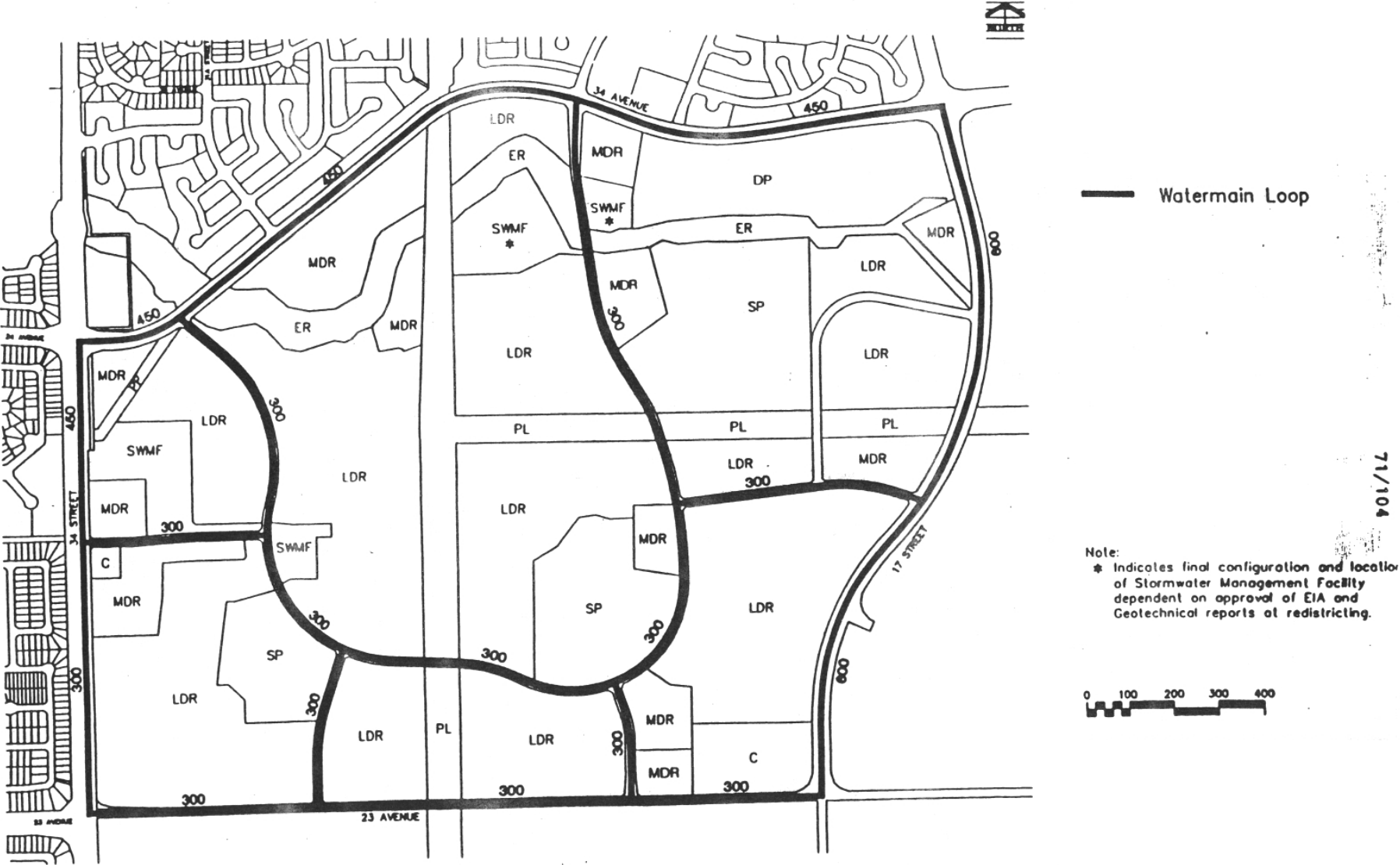


Figure 17: Water Distribution (Bylaw 10818, December 14, 1994)



6.6 STORMWATER WETLAND DESIGNS AND FEASIBILITY

Stormwater wetlands are constructed systems that are explicitly designed to mitigate the impacts of stormwater quality and quantity that occur during the urbanization process (Schueler, 1992). Stormwater wetlands generally fall into five basic designs:

- Shallow Marsh System
- Pond/Wetland system
- Extended Detention (ED) Wetland
- Pocket Wetlands
- Fringe Wetlands

It is proposed to develop a combined approach for the stormwater management facility of Basin A, BI and B2 that would see some aspects of a Pond/Wetland System incorporated into an Extended Detention Wetland System. This approach is being utilized in part to replace the small existing pockets of wetlands that will be removed with development of the neighbourhood. The basic characteristics of the five basic systems of an Extended Detention Wetland are as follows:

Shallow Marsh System: consists of a large surface area that supports dense stands of emergent aquatic vegetation in permanent shallow pools. Depths range from normal water level to 450 mm deep. A deeper pool is located at major inlets and outlets.

The Pond/Wetland System: consists of two separate cells, one a deep pond by the inlet that leads to a shallow wetland. The pond (similar to a conventional wet pond) removes pollutants and reduces required treatment area (when compared to a shallow wetland system).

The Extended Detention (ED) System: is characterized by the fact the water level can increase above the normal level before returning to the normal level. This extended detention can account for up to 50% of the total treatment volume. This design helps reduce erosion of downstream channels and also reduces the wetland space requirement when compared to a shallow wetland system.

Pocket Wetlands: are generally adapted to smaller drainage basins ranging from 0.5 ha to 4.0 ha in area. These smaller drainage areas do not provide a reliable source of base flow and therefore it is difficult to maintain water levels. Often the smaller pools are not present (only saturated soils) and consequently pollutant rates are lower.

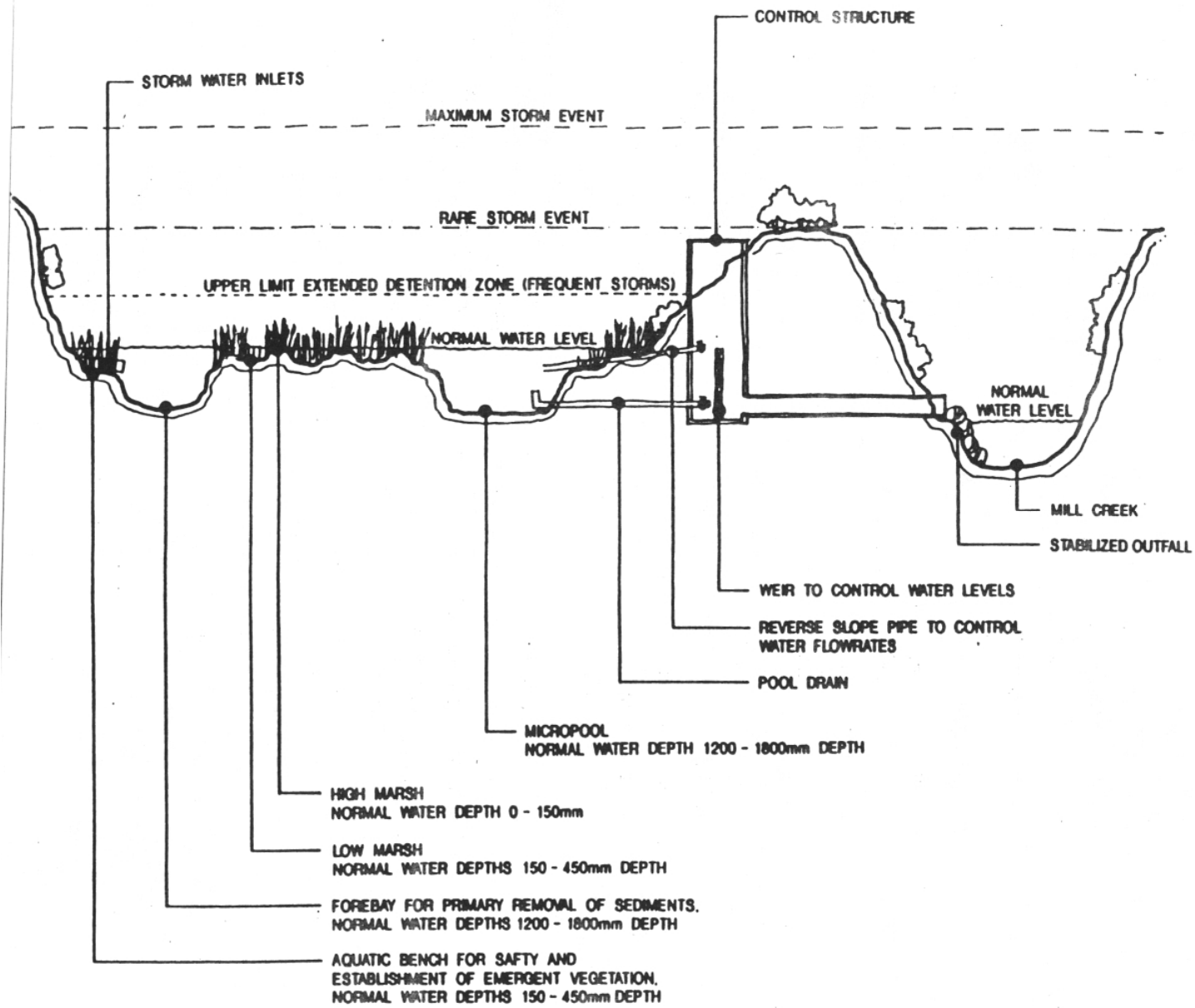
Fringe Wetlands: are formed by constructing shallow aquatic benches along the perimeter of a wet pond. Being shallow they support emergent aquatic vegetation. While a very useful feature in wet ponds by providing a more natural appearance, reducing safety hazards, and creating some aquatic habitat, they only provide a minor increment of pollutant removal.

The first stage in choosing and designing is assessing the physical and natural features of a development area. Some of the key factors that are positive in this case are: sufficient contributing watershed; available water balance; available space and geotechnical opportunities. An obvious factor in the design of this facility is the interaction of the creek with the wetlands for Basins B1 and B2. As shown on Figure 18, there will be a physical separation between the flows in the creek with piped connections to take the flows from the facility to the creek for minor storm events and minor flows in the creek. Basin A facility will have a similar cross section without the bermed wall adjacent to the creek. This facility will be connected to the creek by an outfall sewer.

The concept presented here refers mainly to the design of wetlands for water quality control. Stormwater wetlands in general, and in this case in particular, have the capacity to provide quantity control. The design criteria for additional quantity control are developed through other hydrologic and hydraulic models.

The combination of site factors present a rare opportunity to develop a comprehensive design for a water quality Best Management Practices (BMP) facility. To date most opportunities in other neighbourhoods have been retrofitted or considered later in the development process such that only limited benefits or partial design components could be realized.

Figure 18: Stormwater Management Facility Concept (Bylaw 10818, December 14, 1994)



7.0 IMPLEMENTATION OF THE DEVELOPMENT

7.1 GENERAL

The Silver Berry Neighbourhood can be readily serviced and easily phased. It is intended to initiate development in 1995 and it is anticipated that development of the entire Neighbourhood will take approximately 5-7 years.

7.2 STAGING

Implementation and phasing of development in Silver Berry will be driven by land owner desires and the logical extension of municipal services (Figure 19).

Bylaw 12524
March 14, 2001

The proposed amendments to the Silver Berry NSP change the phasing of neighbourhood development as services will generally be provided from 34 Street and 23 Avenue. The portion of the neighbourhood west of the powerline right-of-way will be the first phase to be developed. Land use and subdivision approvals have already been received for a portion of this phase. The southeastern portion will be Phase 2 and be developed as the collector roadway is extended through the neighbourhood. The northeastern portion adjacent to Mill Creek and 17 Street will be the last phase to develop.

7.3 SUBDIVISION AND REZONING

Amended by Editor

Subdivision and *rezoning* will occur subsequent to the adoption of the Neighbourhood Structure Plan Bylaw in the general direction as illustrated on Figure 19, however, the stages may be modified, based on market conditions and servicing parameters at that time.

Each phase of subdivision and *rezoning* will comply with proper planning processes, including official notices and public hearings as required by the City of Edmonton.

Amended by Editor

7.4 ADDITIONAL STUDIES AND REQUIREMENTS

Throughout this report additional studies or reports were identified as pre-requisites to development. These studies must be completed prior to districting or subdivision of various sections of the neighbourhood. A summary of these studies and their timing is shown on Table 7.1. Other miscellaneous studies or reports may be required in association with the approval of engineering drawings of various stages of development and would be addressed at the subdivision stage.

Figure 19: Staging Plan (Bylaw 10818, December 14, 1994)

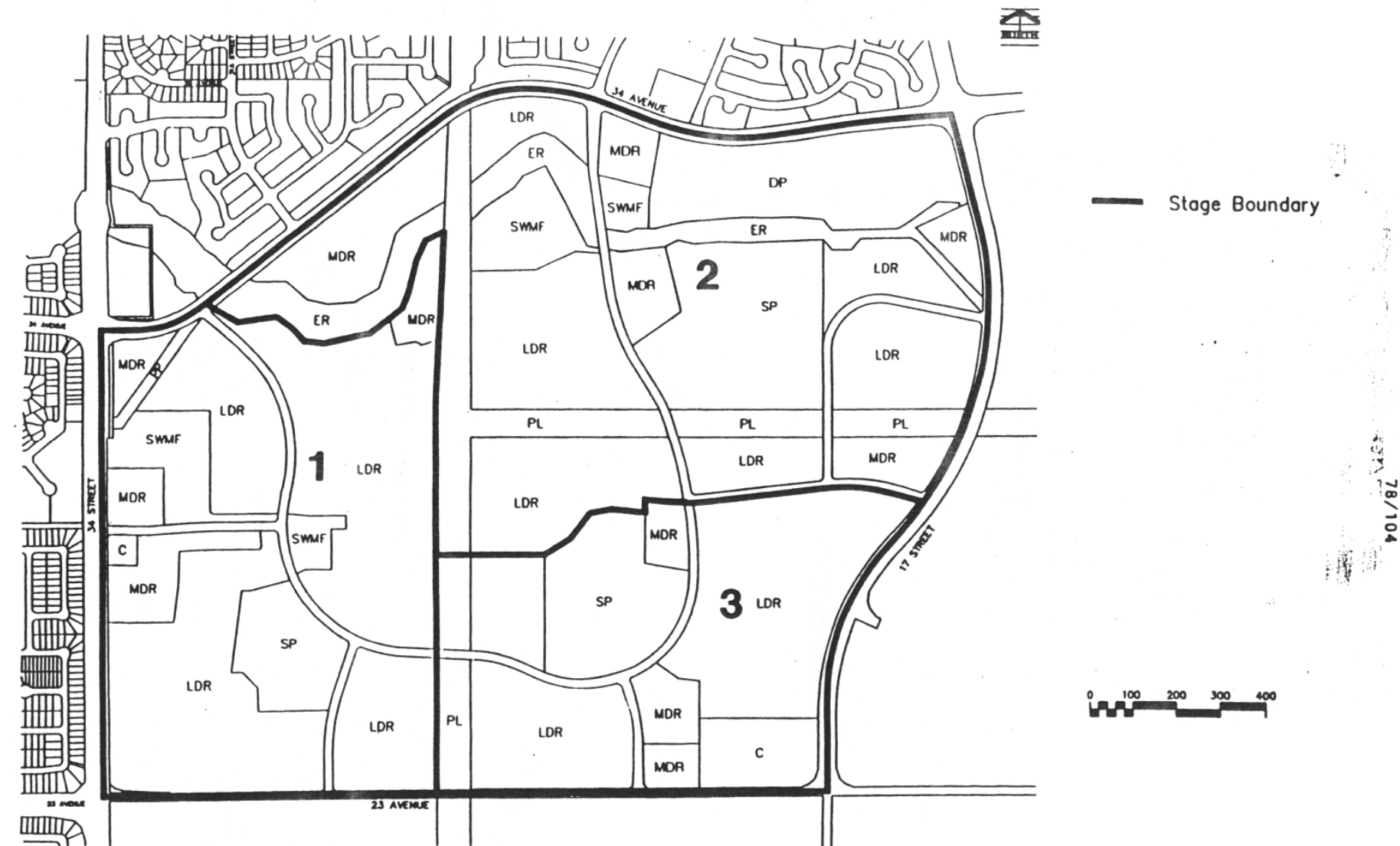


Table 7.1
ADDITIONAL STUDIES
(Amended by Editor)

Study	Timing
▪ EIA for 34 Avenue Roadway Crossing and Waterline Crossing	With a submission of a subdivision application that has the effect of setting 34 Avenue alignment.
▪ EIA for Basin A storm discharge into Mill Creek	With a submission of a <i>rezoning</i> application for any lands within Basin A.
▪ Basin A Stormwater Report	With a submission of a <i>rezoning</i> application for any lands within Basin A.
▪ Basin B1 Stormwater Report	With a submission of a <i>rezoning</i> application for any lands within Basin B1.
▪ Basin B2* Stormwater Report	With a submission of a <i>rezoning</i> application for any lands within Basin B2.
▪ Basin C* Stormwater Report	With a submission of a <i>rezoning</i> application for any lands within Basin C.
▪ Basin D Stormwater Report	With a submission of a <i>rezoning</i> application for any lands within Basin D.
▪ EIA for Stormwater Management Facility for Basin B1 and B2	With a submission of a <i>rezoning</i> application for any lands within Basin B1 and B2.
▪ EIA for collector roadway crossing of Mill Creek between 17 Street and <i>power utility right-of-way</i>	In conjunction with EIA for Stormwater management facility for Basin B1 and B2.
▪ Mill Creek Hydraulic Analysis	With a submission of a <i>rezoning</i> application for any lands within Basin B1, B2, and D.
▪ Soil testing on campus north of Mill Creek	Prior to construction of any building on the campus/district park.
▪ EIA for stormwater facility in Basin C	With a submission of a <i>rezoning</i> application for any lands within Basin C.
▪ EIA for 17 Street crossing of Mill Creek	With a submission of a subdivision application that has the effect of setting 17 Street alignment.
▪ Additional Environmental Audit information on identified sites.	With a submission of a <i>rezoning</i> application for any affected lands.

**Editor's Note:*

Basin B2 and C were deleted from the Silver Berry NSP area, Bylaw 12524, March 14, 2001

APPENDIX 1: LAND USE STATISTICS

SILVER BERRY NEIGHBOURHOOD STRUCTURE PLAN LAND USE AND POPULATION STATISTICS BYLAW 14556

LAND USE	Area (ha)	% of GDA
Gross Area	205.00	
Power / Pipeline and Utility Corridor	15.28	
Environmental Reserve	7.58	
23 Avenue Road Widening	1.53	
Cemetery	1.60	
Gross Developable Area	179.01	100.00
Circulation (@ 22% of GDA)	39.50	22.0
School / Park Sites	9.65	5.4
District Campus Site	26.20	14.6
Shopping Centre Commercial	6.50	3.6
Neighbourhood Commercial	1.74	1.2
Stormwater Management Facility	8.80	4.9
Public Utility	0.43	
Total Non-Residential Area	92.82	51.85
Net Residential Area	86.19	48.15

RESIDENTIAL LAND USE, DWELLING UNIT COUNT AND POPULATION

Land Use	Area (ha)	Units	% of Total Units	Population
Low Density Residential	75.67	1286	70.97	4451
Medium Density Residential	10.52	526	29.03	1368
Total	86.19	1812	100.00	5819

Gross Density: 32.42 persons per gross developable hectare

STUDENT GENERATION*

	Elementary (K-6)	Junior High (7-9)	Senior High (10-12)	Total
Total	873	328	305	1506
Public	621	232	216	1069
Separate	252	96	89	437

Calculation of Student Population:

K-6 57.9% 7-9 21.8% 10-12 20.3%
70% students in public system 30% students in separate system

APPENDIX 2: MUNICIPAL RESERVE DEDICATIONS

SILVER BERRY MUNICIPAL RESERVE ALLOCATION (Amended by Editor)

	(ha)			
Total Gross Area	255.41			
Less E. R.	11.30			
<i>Private Corporations Powerline R/W</i>	17.36			
<i>2 Private Corporations Pipeline R/W</i>	0.73			
<i>Private Corporations (Gas) R/W</i>	0.17			
34 Street Road Widening Plan4017 KS	0.12			
34 Avenue	3.89			
17 Street Road Widening	0.27			
23 Avenue Road Widening	0.06			
Gross Developable Area	221.51			
	GDA	M.R. Required	M.R. Allocated	Difference
<i>Private Corporation (Portion of)</i>		1.35	0.00	(1.35)
NW 1/4 Sec. 6-52-23-4	13.50			
NE V4 Sec 6-52-23-4	23.10	2.31	103.5	8.09
SW 1/4 Sec. 6-52-23-4	33.20	3.32	5.39	1.10
SE 1/4 Sec. 6-52-23-4	<u>31.90</u>	<u>9</u>	<u>4.67</u>	<u>1.48</u>
	101.70	10.17	19.44	9.27
<i>Private Owner</i>	7.48	0.75	0.00	(0.75)
Lot A Plan 4704 R.S.				
<i>Private Owner</i>	8.10	0.81	0.00	(0.81)
Blk 2 Plan 752 0218				
<i>Private Owner</i>	3.50	035	0.00	0.62
Blk 1 Plan 3468 R.S.				
<i>2 Private Owner (Portion of)</i>	18.85	1.89	6.00	4.11
NW 1/4. Sec. 5-52-23-4				
<i>3 Private Owners</i>	6.00	0.60	0.00	(0.60)
SW 1/4 Sec. 5-52-23-4				
<i>Private Corporation</i>	23.10	2.31	1035	8.04
NE 1/4 Sec. 6-52-23-4				
<i>Private Corporation</i>	14.40	1.44	0.00	(1.44)
SW 1/4 Sec. 6-52-23-4				

	GDA	M.R. Required	M.R. Allocated	Difference
<i>Private Corporation</i> SE 1/4 Sec. 6-52-23-4	31.90	3.19	4.68	1.49
City of Edmonton Lands Transalta R/W.	4.34	0.43	0.00	(0.
17 Street Gov. Road Allowance	2.14	0.21	0.40	43) 0.19
TOTALS	221.51	22.15	41.48	19.69

BIBLIOGRAPHY

Doesburg, M. "Lot and Housing Survey." Prepared for the Land Development and House Building Industry, Volume 13 Survey 3, May 15, 1993.

HBT Agra Limited. "Hydrogeological/Geotechnical Investigation, Meadows Neighbourhood 3 Between 17 & 34 Streets and South of Mill Creek to 23 Avenue, Edmonton, Alberta." Prepared for Lehndorff General Partner Corporation and IMC Consulting Group Inc., February 23, 1994.

HBT Agra Limited. "Slope Stability and Development Setback, Meadows Neighbourhood 3 Between 17 & 34 Streets and South of Mill Creek to 23 Avenue, Edmonton, Alberta." Prepared for Lehndorff General Partner Corporation and IMC Consulting Group Inc., February 24, 1994.

IMC Consulting Group Inc. "The Meadows Area Structure Plan." Appendix "A" to Bylaw 8730, November 1987.

Penner and Associates Ltd. "Environmental Impact Assessment of the Proposed Meadows Neighbourhood 3." Prepared for Lehndorff General Partner Corporation and IMC Consulting Group Inc., June 1994.

Sentar Consultants Ltd. "The Meadows Phase 1 Environmental Audit." Prepared for Lehndorff Land Developments Inc, and IMC Consulting Group Inc., September 1994.