

The Grange Area Structure Plan

Office Consolidation December 2012

Prepared by:

*Current Planning Branch
Sustainable Development
City of Edmonton*

Bylaw 11749, was adopted by Council in May 1998. In August 2013, this document was consolidated by virtue of the incorporation of the following bylaws:

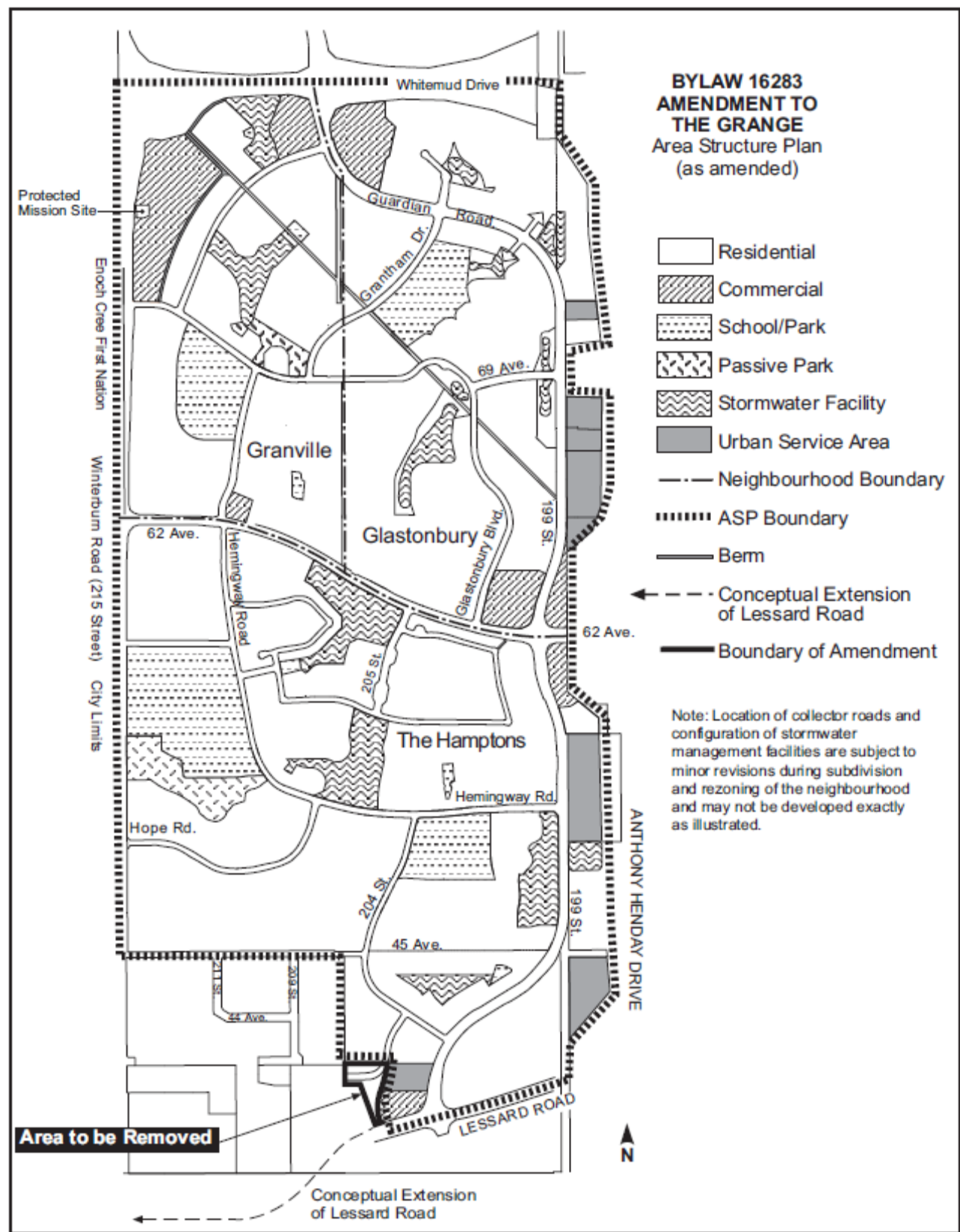
<i>Bylaw 11749</i>	Approved May 25, 1998 (to adopt the Grange Area Structure Plan)
<i>Bylaw 12869</i>	Approved September 5, 2001(to define the land use changes surrounding the re-alignment of 199 Street)
<i>Bylaw 13187</i>	Approved October 17, 2002 (to expand a commercial site and eliminate a small portion of low density residential)
<i>Bylaw 13298</i>	Approved March 28, 2003 (to add a special medium density residential (special) area to the Hamptons NSP)
<i>Bylaw13594</i>	Approved March 1, 2004 (to shift the boundary and increase the size of the Grange ASP shift the location of school/park sites and stormwater management facilities in the Hamptons NSP)
<i>Bylaw 13624</i>	Approved March 16, 2004 (to change the designation of 1.1ha of land from Urban Services to MDR in Glastonbury NSP)
<i>Bylaw 13928</i>	Approved April 11, 2005 (to re-designate a portion of residential land uses to a Stormwater Management Facility)
<i>Bylaw 14165</i>	Approved January 11, 2006 (to reconfigure a Stormwater Management Facility)
<i>Bylaw 14301</i>	Approved June 12, 2006 (to re-designate a portion of the plan area from residential use to urban services use and to adjust the boundary of Stormwater Management Facility)
<i>Bylaw 14404</i>	Approved January 9, 2007 (to re-designate 1.6 hectares of land from commercial to residential use)
<i>Bylaw 14698</i>	Approved August 28, 2007 (to facilitate the adoption of a new Neighbourhood Structure Plan for Neighbourhood 3, known as the Granville neighbourhood)
<i>Bylaw 14733</i>	Approved December 12, 2007 (the amendment will expand the southern boundary of the Hamptons neighbourhood and facilitate the development of a stormwater management lake, park space and residential land uses.)
<i>Bylaw 15380</i>	Approved April 14, 2010 (to redesignate 1.22 hectares of land from medium density residential to Urban Service within the Hampton neighbourhood)
<i>Bylaw 15614</i>	Approved January 31, 2011 (to redesignate 1.24hectares of land from commercial to residential use)
<i>Bylaw 15702</i>	Approved April 4, 2011 (to redesignate 0.27 hectares of land from residential to Urban Service use)
<i>Bylaw 16153</i>	Approved July 3, 2012 (to redesignate a 1.92 ha site designated for Residential uses located in the south portion of the Plan Area to Commercial uses)
<i>Bylaw 16283</i>	Approved December 3, 2012 (to realign the southern boundary of the Hamptons neighbourhood to incorporate the MDR site as part of the Edgemont neighbourhood.)

Editor's Note:

This is an office consolidation edition of the Grange Area Structure Plan, Bylaw, as approved by City Council on May 25, 1998. This edition contains all amendments and additions to Bylaw 11749.

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.



(Bylaw 16283, approved December 3, 2012)

The Grange Area Structure Plan

Prepared for:
Two Private Corporations
(Amended by Editor)

Prepared by: Stanley
Urban Land

**THE GRANGE AREA STRUCTURE PLAN
PROPOSED LAND USE AND POPULATION STATISTICS
BYLAW 16283**

	<u>Area (ha)</u>	<u>% of GA</u>
GROSS AREA	598.32	100.0%
Arterial Roads	48.50	8.1%
Resource Pipelines and Facilities	6.63	1.1%
GROSS DEVELOPABLE AREA	543.19	100.0%
Commercial		
Commercial Shopping Centre	11.04	2.03%
Commercial Other	19.06	3.51%
Parkland, Recreation, School (Municipal Reserve)		
District Campus Site and K-8 Public School	19.10	3.52%
K-8 Public and K-9 Separate Schools and Neighbourhood Park (2 sites)	15.84	2.92%
K-8 Public School and Neighbourhood Park (1 site)	7.90	1.45%
Winterburn Woodlot	6.45	1.19%
Oblate Mission Site Park	0.22	0.04%
Dispersed Parks	4.90	0.90%
Transportation		
Circulation	88.93	16.37%
Infrastructure / Servicing		
Stormwater Management Facilities	41.65	7.67%
Urban Services	16.75	3.08%
TOTAL Non-Residential Area	231.84	42.68%
Net Residential Area (NRA)	311.35	57.32%

RESIDENTIAL LAND USE AREA, UNIT & POPULATION COUNT							
<u>Land Use</u>	<u>Area (ha)</u>	<u>Units/ha</u>	<u>Units</u>	<u>People/Unit</u>	<u>Population</u>	<u>% of NRA</u>	
Low Density Residential (LDR)							
Single/Semi-Detached	252.1	25	6,303	2.8	17,648	80.97%	
Medium Density Residential (MDR)							
Row Housing	33.9	45	1,526	2.8	4,273	10.89%	
Low-rise/Medium Density Housing	24.11	90	2,170	1.8	3,906	7.74%	
Medium to High Rise	1.24	225	279	1.5	419	0.40%	
Total Residential	311.35		10,278		26,246	100.0%	

SUSTAINABILITY MEASURES

Population Per Net Hectare (ppnha)	84.2
Units Per Net Residential Hectare (upnrha)	33.0
[Single/Semi-Detached] / [Low-rise/Multi-/Medium Units] Unit Ratio	61% / 39%
Persons per Gross Developable Hectare	48.3

For purposes of the Capital Region Board Net Density is 33.0 upnrha (based on 10,278 units divided by 311.35 hectares of Net Residential Area).

STUDENT GENERATION COUNT

Public School Board	2,183
Grades K-8	1,457
Grades 9-12	726
Separate School Board	1,913
Grades K-8	1,434
Grades 9-12	479
Total Student Population	4,095

(Bylaw 16283, Approved December 3, 2012)

The Grange ASP Office Consolidation

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1.0 Introduction

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1.0 Introduction

1.1 PURPOSE

The purpose of this Area Structure Plan is to describe the land use framework and development objectives for The Grange, a 586 hectare area of land immediately south of 79 Avenue (Whitemud Drive) and west of the Transportation and Utilities Corridor (TUC) within the City of Edmonton (see Figure 1.0- Location Plan).

Bylaw 13594
March 1, 2004

The Area Structure Plan (ASP) will provide general guidelines to facilitate the orderly and efficient development of the plan area in terms of proposed land uses, density of development, location of major roads and facilities and sequence of development. The ASP Amendment will also provide a framework for the subsequent preparation of more detailed Neighbourhood Structure Plans.

The Area Structure Plan has been prepared on behalf of *two private corporations*, owners of approximately 385 hectares of the total land area within the ASP.

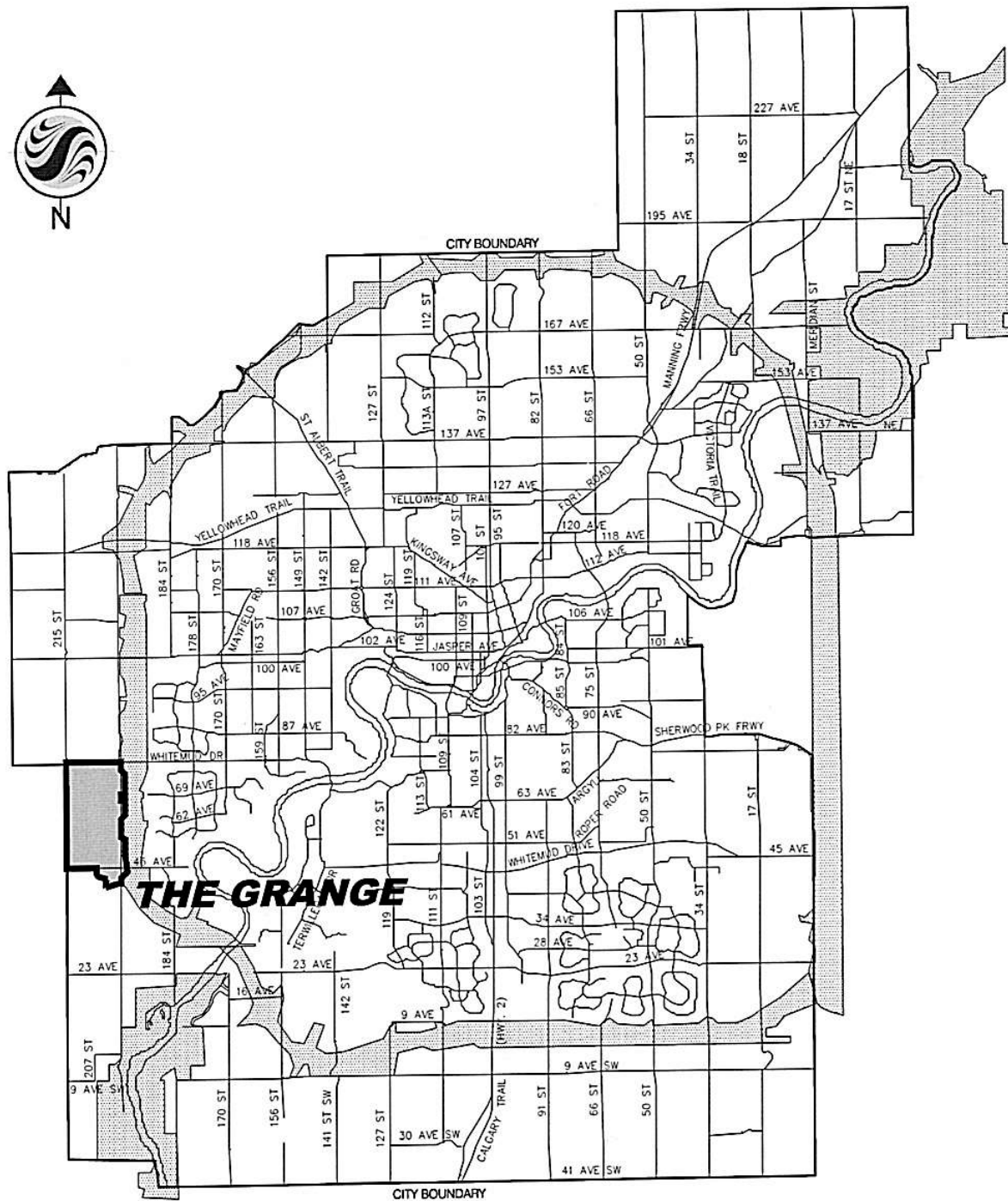
Amended by Editor

1.2 BACKGROUND

The original Area Structure Plan for The Grange was approved by City Council on 8 May 1990 under Bylaw No. 9294. The Grange ASP was subsequently amended on 26 March 1991 a result of the adoption of The Glastonbury Neighbourhood Structure Plan (Bylaw No. 9748) and further amended on 20 September 1993 through another amendment to the Glastonbury NSP (Bylaw No. 10470). The ASP was then amended on 14 May 1995 through Bylaw No. 10969.

No residential development has occurred in The Grange since the preparation of the original ASP, however a number of planning and development factors have changed including market conditions, planning philosophies, planning legislation and policies and servicing methodologies. The effect of these changes is the need for a complete revision to The Grange Area Structure Plan.

Figure 1.0 Location Plan * (Bylaw 11749, May 25, 1998)



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Client / Owner
**The Grange Area
Structure Plan**
LBERTA LTD.
3E
JCTURE PLAN

Figure No.
1.0
Title
Location Plan

December 2003
161 12399

*Amended by Editor

1.3 DEFINITION OF PLAN AREA

The Grange ASP includes all of Sections 18-52-25-W4 and 19-52-25-W4 and a 34 hectare portion of NE 1 /4 Section 7-52-25-W4. Also included in the plan area are a number of parcels totalling approximately 30 hectares along the eastern boundary of 199 Street.

As shown on Figure 2.0 - Context Plan, The Grange ASP is defined by the following general boundaries:

- **Northern Boundary** - Whitemud Drive.
- **Eastern Boundary** - Western edge of the Transportation and Utilities Corridor generally following the existing 199 Street.
- **Western Boundary** - 215 Street (Winterburn Road), the current western boundary of the City of Edmonton and eastern boundary of the Enoch Cree Nation Reserve.
- **Southern Boundary** - *45 Avenue (realigned to the southeast) will intersect with the future 199 Street right-of-way. 199 Street extends south to intersect with Lessard Road which will provide access across the TUS. Together 45 Avenue/199 Street and Lessard Road form a boundary between The Hamptons NSP and the estate residential and agricultural areas to the south.*

Bylaw 13594
March 1, 2004

The Grange ASP constitutes a logical planning unit with respect to identifiable plan boundaries, land ownership and servicing considerations.

1.4 LAND OWNERSHIP

The vast majority of land within The Grange is owned by *three private corporations*. Amended by Editor

There are a number of other minority land owners in the southeast corner of the ASP and along the east side of 199 Street. Current land ownership is shown on Figure 3.0 - Land Ownership and a more detailed listing is shown on Table 1 - Land Ownership.

Figure 2.0 Context Plan (Bylaw 16283, December 2, 2012)



THE GRANGE ASP
CONTEXT PLAN
FIGURE 2



Figure 3.0 Land Ownership (Bylaw 16283, December 2, 2012)

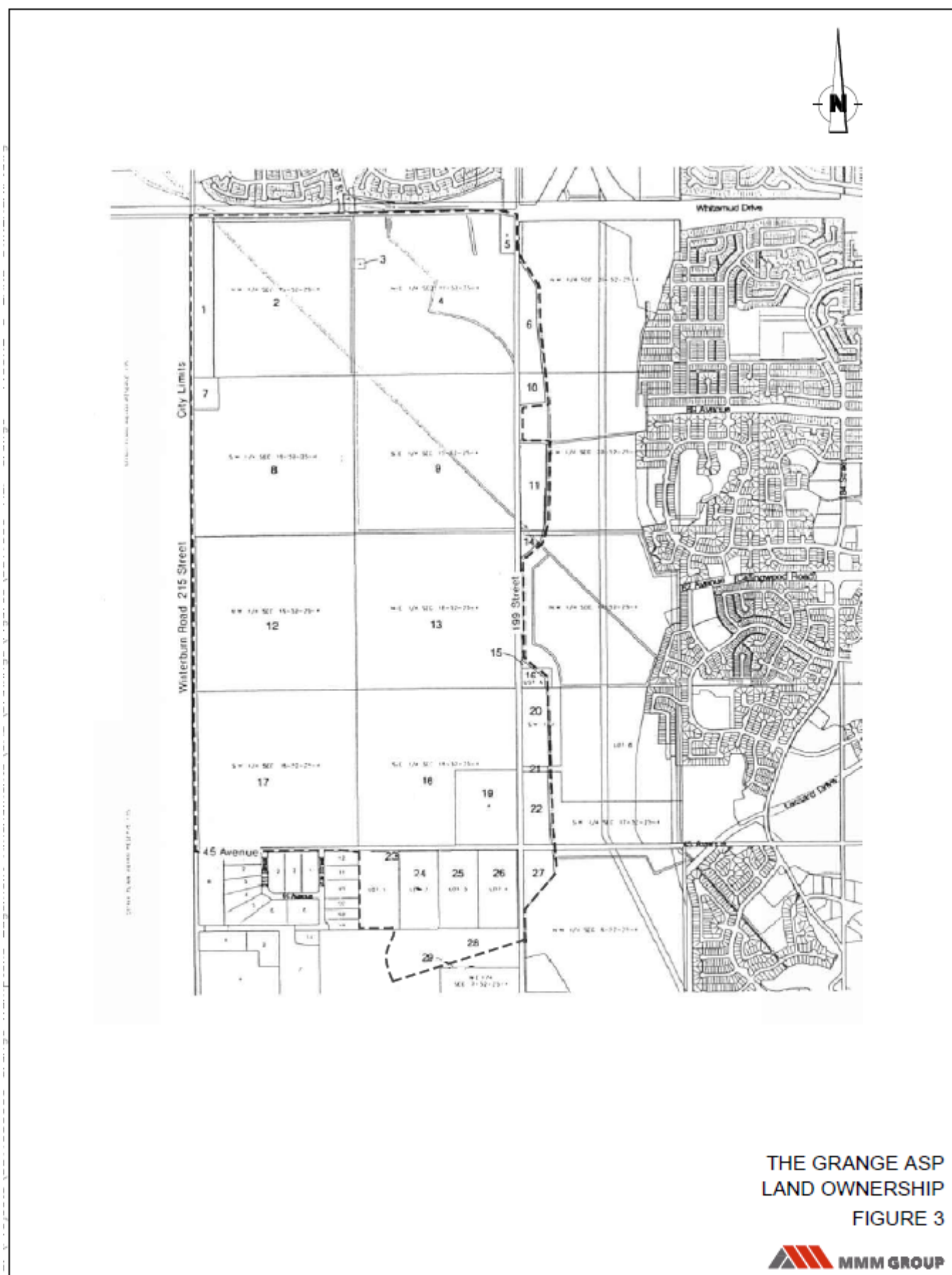


TABLE 1 - LAND OWNERSHIP (Amended by Editor)				
		Titled Owner	Legal Description	Area (ha)
	1.	<i>Private Corporation</i>	Part of NW ¼ 19-52-25-4	8.09
	2.	<i>Private Corporation</i>	Part of NW ¼ 19-52-25-4	56.77
	3.	<i>Private Corporation</i>	Part of NE ¼ 19-52-25-4	0.269
	4.	<i>Private Corporation</i>	Part of NE ¼ 19-52-25-4	62.686
	5.	Her Majesty the Queen	Part of NE ¼ 19-52-25-4	1.39
	6.	Her Majesty the Queen	Part of NW ¼ 20-52-25-4	4.92
	7.	Public Trustee for Province of Alberta	Part of SW ¼ 19-52-25-4	2.02
	8.	<i>Private Corporation</i>	Part of SW ¼ 19-52-25-4	62.68
	9.	<i>Private Corporation</i>	SE ¼ 19-52-25-4	64.29
	10.	<i>Private Institution</i>	Part of SW ¼ 20-52-25-4	1.91
	11.	<i>Private Institution</i>	Part of SW ¼ 20-52-25-4	5.83
	12.	<i>Private Corporation</i>	NW ¼ 8-52-25-4	64.38
	13.	<i>Private Corporation</i>	NE ¼ 18-52-25-4	64.10
	14.	<i>Private Institution</i>	Part of NW ¼ 17-52-25-4	0.91
	15.	<i>Private Owner</i>	Part of NW ¼ 17-52-25-4	0.13
	16.	<i>Private Owner</i>	Part of NW ¼ 17-52-25-4	1.12
	17.	<i>Private Corporation</i>	SW ¼ 18-52-25-4	64.38
	18.	<i>Private Corporation</i>	Part of SE ¼ 18-52-25-4	52.59
	19.	<i>Private Corporation</i>	Part of SE ¼ 18-52-25-4	11.90
	20.	<i>Private Owner</i>	W ½ of LSD 5/Sec 17 Pln 882 2480	4.85
	21.	<i>Private Owner</i>	Part of Lot 8 Plan 5438 RS	0.38
	22.	<i>Private Corporation</i>	Part of SW ¼ 17-25-25-4	4.87
	23.	<i>Private Corporation</i>	Lot 1 Plan 962 1346	portion
	24.	<i>Private Corporation</i>	Lot 2 Plan 962 1346	portion
	25.	<i>Private Corporation</i>	Lot 3 Plan 962 1346	8.14
	26.	<i>Private Corporation</i>	Lot 4 Plan 962 1346	8.13
	27.	<i>Private Institution</i>	NW ¼ 8-52-25-4	3.22
	28.	<i>Private Corporation</i> (87.5%) <i>Private Corporation</i> (12.5%)	Lot 3 Plan 762 0329	portion
	29.	<i>Private Owner</i>	NE ¼ 7-52-25-4	portion

2.0 Statutory Plan & Policy Context

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2.0 Statutory Plan & Policy Context

2.1 EDMONTON MUNICIPAL DEVELOPMENT PLAN

The land within the Grange ASP is designated in the City of Edmonton Municipal Development Plan (MDP) as a Suburban Development area. The Grange ASP is consistent with the relevant Suburban Areas policies and objectives of the MDP specifically:

Managing Suburban Growth - To accommodate growth, serviced in an orderly and economic fashion, in all suburban areas of the city.

***Policy 2.A.1** Encourage new development to be contiguous with existing development.*

The Grange ASP lies immediately south of the developing Lewis Farms ASP and west of the almost fully developed West Jasper Place area. It can be logically and efficiently serviced to accommodate residential development.

***Policy 2.A.2** Allow the location of new suburban residential development to be guided by the demands of the housing market for choices in housing types and location and the availability of services.*

***Policy 2.A.4** Allow market forces to determine the timing, location and extent of servicing in newly developing areas, but require a developer to pay for all on-site services, and where appropriate, specific off-site services.*

Given that the West Jasper Place area is approaching full development, The Grange and Lewis Estates ASP's represent the growth areas for a full range of future residential development opportunities in west Edmonton. Permanent services can be extended across the TUC in a cost effective manner (see Section 6.0).

***Policy 2.A.6** Ensure the use and protection of natural topography and unique elements of the natural environment in the design and servicing of new suburban development.*

The Grange ASP contains a few low lying wetland areas which will be enhanced as a result of their incorporation into the stormwater management system. Portions of unique, sustainable tree stands will be

incorporated, where economical and practicable, into the development concept.

Ensuring Adequate Neighbourhood Services - Encourage flexibility in creating attractive and functional neighbourhoods.

***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 to be efficiently supplied.*

The Grange ASP has been planned to accommodate three neighbourhoods of various sizes and projected populations and a logical, efficient roadway pattern.

***Policy 2.B.4** Promote linkages between communities through the design and location of open spaces, community facilities and activity centres.*

The Grange ASP incorporates linkages throughout the plan via the stormwater management system of lakes and dry ponds, planned walkways and parks sites.

Maintaining a Balanced Mix and Density of Dwellings

***Policy 2.C.1** Encourage heterogeneous communities by planning for a variety of housing types, including multi family, in each residential neighbourhood.*

The Grange ASP provides for a mix of low and medium density residential housing forms consistent with City policies.

2.2 SUBURBAN INVESTMENT STRATEGY

The City of Edmonton's Suburban Investment Strategy (SIS) evaluates the principles and actions associated with facilitating suburban growth. The SIS deals with approvals and states that new neighbourhood approvals should be considered if:

- new neighbourhoods are contiguous with adjacent, completed development;
- new neighbourhoods are necessary in order to meet servicing forecasts within the appropriate sector;

- funding is in place to provide required infrastructure or that the developers are responsible for all costs associated with the required infrastructure.

These principles are similar in nature to those found in the MDP and the proposed neighbourhoods within The Grange ASP will address these infrastructure investment issues in more detail at the Neighbourhood Structure Plan stage.

Contiguous Development - At the ASP level, The Grange is contiguous with development in the Lewis Estates ASP and across the TUC in the West Jasper Place ASP.

Meet Servicing Forecasts - As indicated in the City of Edmonton's Suburban Residential Land Servicing Forecasts (1997-2002), the currently undeveloped portions of the West Jasper Place ASP including the Donsdale, Jamieson Place, Dechene and Ormsby Place neighbourhoods should be virtually complete in the next few years. The Grange and Lewis Estates ASP's are the only significant remaining areas for development in West Edmonton.

Between 1992 and 1996, West Edmonton accounted for an average of approximately 200 lots per year or 12-13% of the total number lots serviced in the City annually. The City of Edmonton forecast estimates that figure rising to nearly 20% (or approximately 350 lots annually) by 2002 in conjunction with an overall increase in lot servicing. After that time, the West Jasper Place ASP will most certainly be fully developed and The Grange will play a critical role in meeting the residential demands of the west Edmonton housing market.

Funded Infrastructure - Cost sharing arrangements for the extension of storm sewer and sanitary sewer services and the upgrading and extension of various roadways will be developed and detailed at the NSP stage.

2.3 SUBURBAN NEIGHBOURHOOD DESIGN PRINCIPLES

The Suburban Neighbourhood Design Principles report describes 16 design principles intended to guide development in future Edmonton suburbs.

While The Grange ASP generally reflects most of the design principles to some degree, the following principles, in particular, are embodied within the design concept for The Grange:

Design Principle 3 - *Design the arterial and central collector roads along a grid pattern, peripheral to the neighbourhoods. Use local roadways to distribute neighbourhood traffic from/to these arterial and collector roadways.*

The Grange ASP is bound on all sides by major arterial roadways and the three neighbourhoods defined by these shared boundaries, arterial roadways and a pipeline. right-of-way. A looping collector roadway provides access off of the arterial roadways and brings access to the local roadway network.

Design Principle 7 - *At the area and neighbourhood planning stage, plan the location of the school/park facilities relative to neighbourhood staging such that they can be consolidated, serviced and available early in the development of a neighbourhood or catchment area.*

School/park sites within The Grange ASP have been planned in consultation with the School Boards and the Community Services Department and, with the exception of the Campus Site, are generally located within the first or second stages of development in the three neighbourhoods. Furthermore, given the limited number of landowners, the pre-dedication of school/park sites becomes a more achievable objective.

Design Principle 9 - *Explore opportunities to provide smaller, dispersed open space and parks in a neighbourhood to provide for localized needs while meeting the recreational needs of residents of the catchment area.*

A number of dispersed park sites have been created from municipal reserves throughout the plan area and will be identified in the respective NSPs.

Design Principle 10 - *Optimize the use of land and capital requirements for facilities such as churches, schools, community leagues and storm water management.*

Site areas for school/park sites/community league building envelopes

have been identified within the 10% municipal reserves available. The presence of a campus site and the use of some municipal reserves for retention of an environmental area required careful refinement and area optimization of all school/park sites.

Design Principle 11 - *Create a linked open space system through open spaces created by storm water management facilities, some utility rights-of-way, preservation of appropriate natural areas and drainage courses, and school and park open spaces.*

An extensive open space system is available through the connection of the stormwater management facilities, the two central pipeline rights-of-way, the passive park site and various other walkway systems through public utility lots.

Design Principle 15 - *Provide opportunity through the residential districts of the Land Use Bylaw for the intensification of housing forms and for alternative site design and building siting.*

It is intended that a range of low and medium density residential housing forms will be developed within The Grange. Opportunities for innovative site design and building siting can be pursued generally at the neighbourhood plan level and through the redistricting and subdivision processes.

Design Principle 16 - *Use current population and student generation formulas when planning facilities for a neighbourhood take into account the life cycle of the neighbourhood;*

The population and student generation ratios provided in the Suburban Neighbourhood Design Principles report were used to develop demographic projections in The Grange ASP. The two School Boards were also consulted in the development of projected student populations.

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3.0 Site Context & Development Considerations

3.1 TOPOGRAPHY & VEGETATION

The topography of The Grange lands is generally flat and rolls gently from west to east as shown with a moderately hilly zone located in the southwest corner of the plan area. Elevations throughout the Grange generally vary from approximately 710m in the southwest to approximately 692m towards the far northeastern edge. Surface drainage throughout most of the plan area generally runs towards the east and north east except in the southeast portion where it flows to the east and southeast as shown on Figure 4.0 - Site Contours.

As shown on Figure 5.0 - Site Features, there are a few areas of heavy tree cover in The Grange in the southwest and northwest portions of the plan area. This vegetation is comprised primarily of aspen as well as poplar, birch and white spruce. A few low lying wetland areas are located in the northeast portion of the plan surrounded by various forms of vegetation (see Section 3.7).

3.2 SOILS

A number of geotechnical evaluations have been completed on lands in The Grange over the past ten years. The studies have identified that the soil stratigraphy typically consists of a layer of clay over a silt/till layer.

This silt/till layer resulted in the previous ASP and NSP approvals for The Grange requiring the application of Infrastructure Performance Criteria (IPC) instead of the usual City of Edmonton Servicing Standards.

3.3 EXISTING LAND USES

The majority of land within The Grange ASP is currently used for agricultural purposes with a few abandoned farm houses. These structures are proposed to be removed at the time of development and are not considered to pose any constraints nor do they possess any historical significance. A church has been built recently along 199 Street at 69 Avenue on surplus TUC lands (see Figure 5.0). This facility can be integrated alongside the future land uses proposed within The Grange ASP without posing any development constraints to either the church or the other landowners.

Figure 4.0 Site Contours (Bylaw 16283, December 2, 2012)

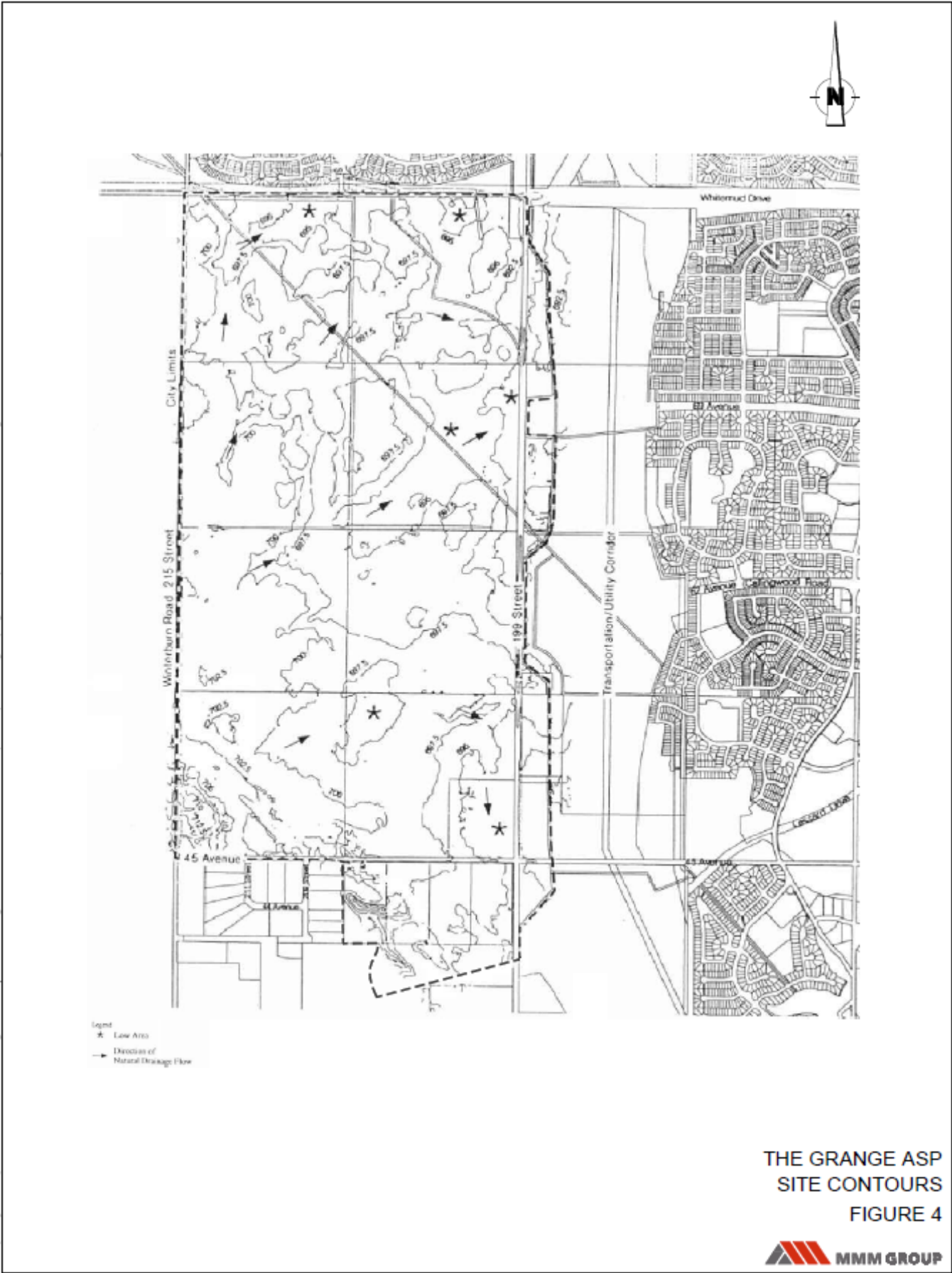


Figure 5.0 Site Features – Aerial Photo 2011 (Bylaw 16283, December 2, 2012)



THE GRANGE ASP
SITE FEATURES - 2011 AIR PHOTO
FIGURE 5



Portions of land in the E 1/2 Section 19-52-25-W4M within the Glastonbury Neighbourhood are currently districted Single Detached Residential (RF 1) District, Public Utility (PU) District, Public Parks (AP) District, Urban Reserve (AGU) District with the remainder districted as Agricultural (AG) District.

The majority of the NW 1/4 Section 19-52-25-W4M and the north half of the SW 1/4 Section 19-52-25-W4M is currently districted as Site Specific Development Control (DC5) District (DC5-62) to accommodate the development of a mobile home park. Other portions of land within this area are districted for Neighbourhood Convenience Commercial (CNC) District and AP.

The south half of SW 1/4 Section 19-52-25-W4M, all of Section 18-52-25-W4M and that portion of NE 1/4 Section 7-52-25-W4M is districted AG.

As a result of the proposed revisions to the ASP (and subsequent NSPs), redistrictings will be necessary to make the land use consistent with the plans. This is discussed in more detail in Section 8.0 - Implementation.

3.4 SURROUNDING LAND USES

In addition to the TUC (described below in Section 3.5), The Grange ASP is surrounded by a variety of land uses including:

North - Development is underway within the first two neighbourhoods (Potter Greens and Breckenridge) of the Lewis Estates ASP on the north side of Whitemud Drive. Existing low density residential development backs on to Whitemud Drive along the entire shared boundary with The Grange ASP. Access into Lewis Estates is gained primarily from *Guardian Road* (207 Street) off of Whitemud Drive.

Amended by Editor

West - The Grange is bordered to the west by the Enoch Cree Nation Reserve encompassing 20 Sections of land in the County of Parkland and straddling Highway 60. There is no development in the lands adjacent to The Grange and the terrain is similar to that within the plan area. Most development within the Reserve has occurred adjacent to Highway 60 including a golf course, residential development and an assortment of urban services and commercial uses.

South - The Grange is bordered south of SW 1/4 Section 18-52-25-W4M by Triple Acres, a country residential development with approximately 20 residential dwelling. Adjacent to and straddling the southeast border are a number of larger parcels used for farming and excavation business operations.

3.5 TRANSPORTATION AND UTILITIES CORRIDOR

The Transportation and Utilities Corridor (TUC) forms the eastern boundary of The Grange and was established to provide a corridor for the proposed Ring Road, power lines, energy pipelines, and other utilities.

A number of parcels of land along the eastern edge of 199 Street were declared surplus to the TUC requirements and subsequently incorporated into The Grange ASP when it was initially prepared.

Access across the TUC into The Grange is planned at 69 Avenue, 62 Avenue and Lessard Road/45 Avenue.

3.6 PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

A Phase I Environmental Site Assessment (ESA) was undertaken by AGRA Earth & Environmental Limited in July 1997 on lands within Section 18-52-25-4 and the East 1 /2 Section 19-52-25-4.

The Phase I ESA identified no concerns that would warrant a Phase II ESA. However, the following items were flagged for future reference:

- a) Suspected hydrocarbon staining was identified in the northeast corner of Section 19-52-25-4. The contaminated zone had an area of approximately 2m by 5m and appeared to be superficial. These soils should be disposed of in accordance with all applicable laws and regulations. As well, if at the time of excavation it is noticed that contamination extends into the subsurface, then additional investigation may be warranted.
- b) Hydrocarbon staining was noted at each of the two active wells in Section 19-52-25-4. The staining was restricted to the fenced area within the well leases.
- c) In the northeast corner of Section 19-52-25-4, approximately ten

piles of sand and gravel were placed in an organized fashion around the limit of the forested area east of the abandoned houses. These deposits did not appear to have been the product of a local excavation and no visual signs of contamination were noted. The origin of these deposits is unknown.

- d) Waste debris was noted throughout the site. This included materials that have specific disposal requirements as per Alberta environmental legislation. It is recommended that waste materials be identified to determine the appropriate disposal methods, specifically:
- i. potential asbestos-containing insulation wrap around the hot water heaters;
 - ii. the composition of the material in the garbage bags; and
 - iii. suspected hydrocarbon stained soils in the northeast corner of Section 19-52-25-4.

Upon reviewing the results of the Phase I ESA, the Environmental Planning Group of the Planning & Development Department recommended that the hydrocarbon staining noted in point b) further investigated prior to redistricting and that the sand/gravel piles noted in point c) be flagged and tested prior to being used on development lands.

The Phase I ESA also noted that a number of government departments and resource agencies including Alberta Transportation & Utilities (Dangerous Goods Control), Environmental Law Centre, Petroleum Tank Management Association of Alberta, City of Edmonton Emergency Response Department and *a private corporation*, were contacted regarding environmental incidents, underground storage tanks and dangerous goods incidents on the property. No concerns were raised.

Amended by
Editor

3.6.1 Non-Participating Land Owners

To the best of our knowledge, no other Phase I Environmental Site Assessments have been undertaken on the remaining lands within The Grange ASP.

In light of this, the Environmental Planning Group of the Planning & Development Department has recommended that ESAs or disclosure statements be provided by the minority land owners at the redistricting stage.

3.7 ENVIRONMENTAL RESOURCES

The City of Edmonton's Inventory of Environmentally Sensitive and Significant Natural Areas identified three sites within The Grange. The location of the three sites is shown on Figure 5.0.

3.7.1 Winterburn Woodland

The Inventory identifies the 46.51 ha Winterburn Woodland site (NW302) as a regionally significant environmentally sensitive area. The report cites the presence of a number of vegetation communities, a high plant species diversity and sensitive wildlife species. Portions of the site were previously cleared for sand and gravel extraction.

A Stage One Preliminary Natural Area Site Assessment (Step 1 & Step 2 Reports) was completed by Reid-Crowther & Partners Ltd. in early 1998. The Step 1 Report provided an inventory of the Winterburn Woodland's environmental characteristics and a vegetation/botanical and wildlife assessment. The report gave a high importance rating to a number of the Woodland's environmental elements including flora, fauna, site size, biological diversity, wildlife population, vegetation, bird habitat and the site's sustainability.

The Step 2 Report evaluated the effects of the proposed development on the various environmental elements and identifies a number of negative and unknown impacts including a reduction in site size; loss of linking habitat to the south; potential loss of wildlife species through habitat loss and; loss of bird habitat. Furthermore, the Step 2 Report assesses the sustainability of the Winterburn Woodland in consideration of the proposed development and generally notes the following:

- a) The Winterburn Woodland area includes 25.5 hectares of native vegetation. It is recommended that 4.5 - 5.0 hectares of the natural area in the northwest portion of the Woodland be considered for continued protection. As well, consider the remaining area, to the extent possible, where economically viable and sustainable for

integration opportunities with urban development. The areas with greater value should be considered first.

- b) The natural area to be retained should also be protected from adverse human impacts. This should include protection of the trees and shrubs from cutting, elimination of the bush party site, and associated activities. Domestic stock grazing should also not be allowed in this area since it would have a severe impact on the understory. Motorized vehicle access to the natural area to be retained should be eliminated.
- c) During development, it will be important to protect both the understory and the trees when clearing vegetation adjacent to protected areas.

The Step 2 Report also provides a number of habitat management considerations for the natural area that has been recommended for retention. These recommendations include:

- a) Develop this area in the later stages of the project.
- b) Retain native vegetation in the designated natural area. This will enable a larger treed habitat 'island' to be retained to support the local population of songbirds, deer and other species.
- c) Where possible, buffer the edge of the natural area to be retained from zones of high disturbance by:
 - i. orienting houses so that backyards are closest to the natural area to be retained;
 - ii. separating main roads from the natural area;
 - iii. incorporating other native vegetation on-site in appropriate ways where sustainable and economically viable;
 - iv. retain proposed northwest woods stands in a natural state with little or no maintenance (e.g. leave standing dead trees, unless they pose a significant safety concern).

3.7.2 Triple 5 Farm Wetland

The Inventory identifies the 8.90 ha Triple 5 Farm Wetland as a locally significant environmentally sensitive area. The report notes that the Wetland appears to have extensively developed areas of emergent aquatic vegetation and waterfowl habitat. The presence of this wetland presents an opportunity to incorporate this area into the stormwater management system to both meet the drainage requirements of urban development and to preserve this natural area for future residents.

An existing tree stand along the northwest edge of the Wetland has been identified for retention as a natural (and naturalized) area through the creation of the stormwater management facilities. Due to technical considerations, the remainder of the wetland will be excavated and developed to City of Edmonton standards. Careful attention to the integrity of the tree stand will be necessary during adjacent excavation and construction.

See Section 6.0 for a discussion on proposed stormwater management facilities in The Grange.

3.7.3 Potter Green South Natural Area

The Inventory identifies the 4.34 ha Potter Greens South Natural Area as a locally significant environmentally sensitive area. Notwithstanding its identification, the site's proximity to Whitemud Drive and proposed widenings preclude any opportunity to preserve it.

3.8 HISTORICAL RESOURCES

An archival search for The Grange was undertaken by the Archeological Surveys Branch of Alberta Culture in May 1988 during the preparation of the original ASP.

Due to the absence of historical data and distance from the North Saskatchewan River, the Archeological Surveys Branch arrived at the conclusion that lands within The Grange are of little or no historical or cultural value and no further study is required.

3.9 OIL & GAS FACILITIES

The Grange lands are located upon the Acheson East Field Blairmore Pool with estimated remaining oil reserves of $300.0 \times 10^3 \text{m}^3$ (78% drained) and remaining gas reserves of $152.0 \times 10^6 \text{m}^3$ (55% drained) based on 1991 statistics.

There are a number of pipeline facilities and operating, suspended and abandoned well sites throughout Section 18 and 19 in the Grange. The remaining production life of the operational wells is estimated to be in the range of 15-20 years. Improvements in resource extraction technology can both increase the speed and efficiency of oil and gas removal as well as limit the impacts on adjacent urban development.

3.9.1 Existing Pipeline Facilities

The Alberta Energy and Utilities Board Pipeline License Register identifies five pipeline transmission licenses in The Grange (as shown on the following table), all of which are in Section 19 and shown on Figure 6.0 - Resource Operations and Facilities.

TABLE 2 THE GRANGE ASP – EXISTING PIPELINE TRANSMISSION FACILITIES (Amended by Editor)				
Company	Substance	H₂S Content (mol/kmol)¹	Max. Operating Pressure (kPa)²	Max. Outside Diameter (Mm)
<i>1) Private Corporation</i>	Fresh Water	0.00	4,140	323.9
<i>2) Private Corporation</i>	Natural Gas	0.00	9,940	323.9
<i>3) Private Corporation</i>	Natural Gas	0.00	6,205	26.7
<i>4) Private Corporation</i>	Natural Gas	0.00	2,070	60.3
<i>5) Private Corporation</i>	Oil-Well Effluent	1.70	3,500	88.9
¹ sour natural gas occurs when the H ₂ S content is greater than 10.0 mol/kmol				
² a high pressure line has a maximum operating pressure greater than or equal to 3,475				

The *first (refer to Table 2)* license is for a high pressure water line located in a 10 metre easement which runs diagonally through Section 19 from southeast to northwest. It carries water from the North Saskatchewan River to oil wells northwest of The Grange for injection/extraction purposes.

Amended by Editor

The *second and third (refer to Table 2)* licenses include a large diameter, high pressure natural gas pipeline which runs east to west along the southern boundary of the southeast quarter of Section 19 and then north along the centre line of the Section within a 15 metre easement. The other license covers the operation of a small diameter, high pressure natural gas pipeline that traverses the southern boundary of the northwest quarter of Section 19.

Amended by Editor

The *final two (refer to Table 2)* licenses are for one low pressure and one high pressure small diameter pipelines. One **is** licensed for carrying natural gas and connects to a - suspended gas well in the northeast quarter of Section 19. The other is licensed for carrying oil-well effluent and connects to five *of the private corporation's* crude oil well pumps (operating, suspended and abandoned) in Section 19. This line is licensed for the presence of small amounts of hydrogen sulfide with a concentration well below what is considered by the AEUB to be sour gas.

Amended by Editor

3.9.2 Operating Extraction Facilities

As shown on Figure 6.0, there are three operating surface wells in Section 19 and none in Section; 18 or the other portions of The Grange ASP. The three operating wells are owned by *a private corporation* and are used for crude oil extraction.

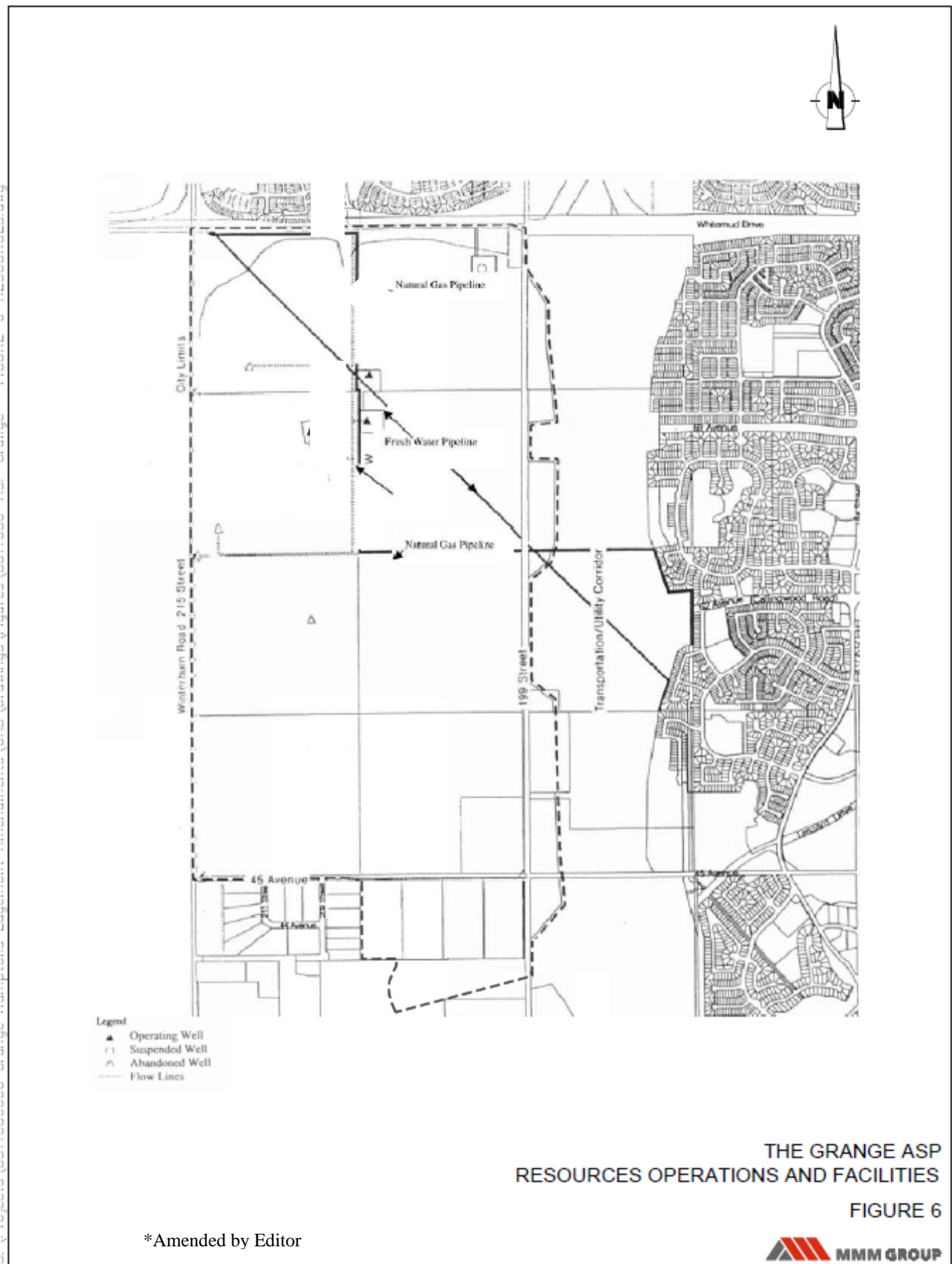
Amended by Editor

All production equipment, such as tanks and separators, was removed from The Grange area many years ago, so the well sites contain only a well head, pumping unit, control panel and flow line connections. As oil is pumped to the surface, it is transported through flow lines to central battery sites located outside The Grange.

The *private corporation* estimates that the remaining operating life of these five oil wells is approximately 15-20 years.

Amended by Editor

Figure 6.0 Resource Operations and Facilities* (Bylaw 16283, December 2, 2012)



The lease areas for these sites have been substantially reduced since their original surface lease applications and are now generally less than 0.40 hectares (60 m x 60 m)

3.9.3 Suspended Extraction Facilities

There is one suspended surface well in Section 19 owned by *a private corporation*, and used to extract natural gas. The well was suspended due to the negative effect that the removal of gas from this reserve had on the ability of the operating oil wells to raise oil to the surface. As these operating oil wells continue to remove oil from this field, the downhole pressure at this gas well site will decrease. It will not likely be placed back into production until most of the oil has been removed from this area.

Amended by Editor

The private corporation has indicated that this well is an essential part of their resource extraction operations in west Edmonton and that they do intend to extract the available gas when the bulk of the remaining oil reserves are drained. The lease area for this site has been substantially reduced since its original application and is now approximately 0.4 hectares (60 m x 60 m).

Amended by Editor

3.9.4 Abandoned Extraction Facilities

As shown on Figure 6.0, there are six abandoned surface well site in Section 18 of The Grange owned by *four private corporations*. There are three abandoned surface well sites in Section 19 owned by *two private corporations*.

Amended by Editor

All of these oil and gas wells have been plugged off with cement. Surface well casings have been sheared off one metre below the surface and steel plates have been welded onto the top of the casings. At the time of urban development in the vicinity of an abandoned well, it may be necessary to re-abandon the well site to cut the well casings further below the surface in order to minimize conflicts during construction.

It should be noted that these abandoned wells are not potential sources of hydrogen sulphide gas but that they may be physical constraints to subsurface disturbance which will be dealt with at the

time of detailed subdivision planning.

During the Energy Resources Conservation Board (ERCB) Inquiry of 1983, the following statement was made by the ERCB with respect to abandoned wells:

"The Board would expect that the licensee of a well, even of an already abandoned one, would retain responsibility for re-abandonment when such is required for urban development purposes. If the licensee of the well is defunct, the Board would take responsibility to ensure that the surface abandonment was re-completed."

4.0 Development Policies & Objectives

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4.0 Development Objectives & Principles

4.1 DEVELOPMENT OBJECTIVES

The Grange ASP has been prepared as a comprehensively planned residential area taking advantage of both the natural features and the location attributes of the area.

The main objectives of The Grange ASP are:

- to develop a plan consistent with the general intent and purpose of the City of Edmonton Municipal Development Plan.
- to provide a framework to deliver a high quality, comprehensively planned residential area by defining the basic roadway network, general pattern and composition of land uses, location of school/park sites and servicing designs.
- to integrate natural features of the area into the plan where feasible and economically viable.
- to allow implementation of the plan on an orderly, staged basis.

4.2 DEVELOPMENT PRINCIPLES

Development of the various land uses within The Grange ASP is defined through the following general principles:

4.2.1 Residential

- Provide for residential development within the three neighbourhoods in The Grange to allow for a variety of housing forms and options consistent with consumer preferences and in conformance with municipal standards and policies.
- Employ applicable design principles from the Suburban Neighbourhood Design Principles report within the residential areas.
- Establish ^{sufficient} overall residential densities within The Grange to support the efficient provision of educational facilities, recreational facilities and municipal services such as public transit.

- Establish the single family to multi-family dwelling unit ratio to conform with City Council's housing mix guidelines.
- Locate residential development so as to take advantage of natural and man-made features such as stormwater management facilities, walkways and park space.
- Orient higher density residential land uses toward the collector and/or arterial road system to provide easy access and, where appropriate, to provide a transitional land use between adjacent single family development and major roads and commercial uses.

4.2.2 Commercial

- Provide for both neighbourhood convenience and shopping centre commercial development opportunities within The Grange to serve area residents.
- Ensure that the impact of commercial development on adjacent land uses is minimized through the use of transitional land uses, orientation of land uses and the application of setbacks/buffering available through the Land Use Bylaw.
- Locate shopping centre commercial sites along collector and arterial roadways to ensure high visibility and to provide easy access.

4.2.3 Transportation

- Provide a logical, safe and efficient hierarchy of transportation systems within the plan area to address the pedestrian, bicycle, public transit and automobile transportation needs of residents and businesses moving to, from and within The Grange.
- Employ applicable design principles from the Suburban Neighbourhood Design Principles report to the design of the transportation and circulation network.

4.2.4 Educational Facilities

- Provide sites for educational facilities through the dedication of municipal reserves.
- Locate and size these sites to address the student populations generated within designated catchment areas through consultation with the Public and Separate School Boards and the City.

4.2.5 Parks & Open Space

- Provide sites for open space and parks for active and passive recreation through the dedication of municipal reserves.
- Introduce a number of smaller, "pocket parks" throughout the plan to provide residents with an alternative open space to the larger neighbourhood park sites.
- Locate parks and open space to provide both easy access for residents and to facilitate timely assembly and development of sites.
- Employ other applicable design principles from the Suburban Neighbourhood Design Principles report to open space/park areas within The Grange.

4.2.6 Environmental

- Preserve and integrate environmentally sensitive areas into the plan area where sustainable and economically viable through the use of municipal reserves, stormwater management facilities and other public utility lots.

4.2.7 Resource Operations

- Accommodate the safe and nuisance-free operation of existing resource extraction facilities prior to and, in some cases, concurrent with development in the plan area so that the oil and gas reserves may be removed.

5.0 Development Concept

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5.0 Development Concept

The development concept for The Grange has been prepared in response to current and anticipated residential market trends in the Edmonton region.

The amended ASP retains some of the design elements found in the original plan such as the focus on low density residential development and the central, linear stormwater management facility design and walkway system. At the same time it revises the collector roadway system, reconfigures the location of various land uses and in some cases deletes uses such as the business park and the "town-centre" pattern of commercial development.

Overall, the land use efficiency of the plan is greatly improved as reflected in the revised land use densities. The following sections outline the development concept for The Grange in response to the development objectives and principles outlined in the previous section.

5.1 NEIGHBOURHOOD UNITS

The Grange ASP has been divided into three logical neighbourhood units as shown on Figure 7.0 - Development Concept. Each neighbourhood is of a size and population sufficient to support at least one school/park site and is logically defined by a system of existing and proposed arterial roadways and utility corridors

The neighbourhoods range in size from 179 ha for Neighbourhood 1 to 272 ha for Neighbourhood 2 and 135 ha for Neighbourhood 3 for a total area of 586 ha.

Bylaw 13594
March 1, 2004

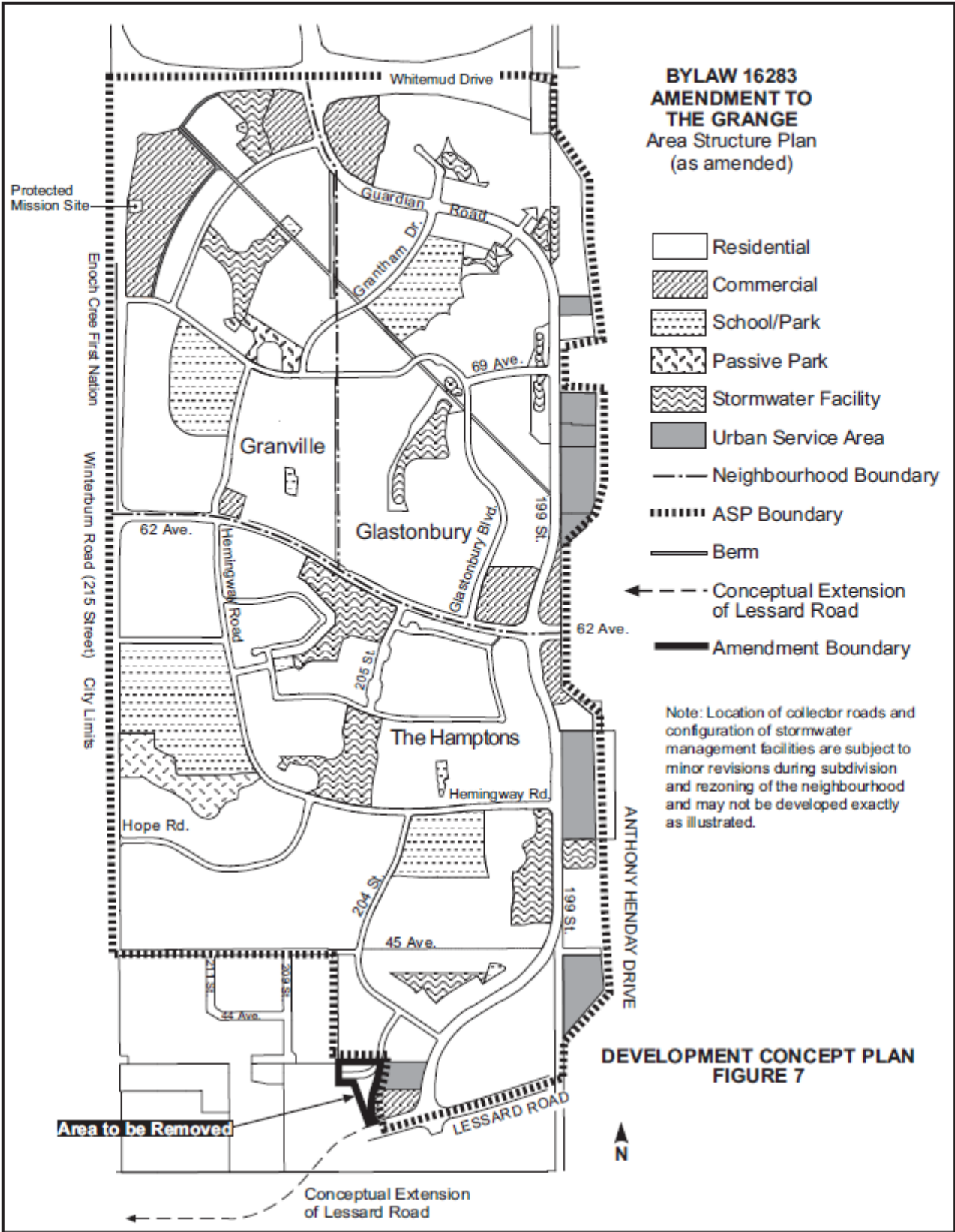
5.2 RESIDENTIAL

The majority of land within The Grange is intended for residential development as shown on Figure 7.0.

(Deleted)

Bylaw 15614
Jan 31, 2011

Figure 7.0 Development Concept (Bylaw 16283, December 2, 2012)



“Consistent with the Municipal Development Plan, opportunities exist for a range of low, medium and high density development within the residential areas and the respective locations will be defined through the preparation of the three Neighbourhood Structure Plans.”

Bylaw 15614
Jan 31, 2011

Amenity areas such as the stormwater management facilities, school/park sites and pocket parks have been used as focal points in

the residential areas. In general, medium density residential development will be located along collector and arterial roadways both for ease of access and in some cases to provide transitional land uses between major roads and low density development. Small pockets of low density multiple family development may also be appropriate within selected central areas of the neighbourhoods.

The single family to multiple family dwelling unit mix ratios for each of the three neighbourhoods and the ASP as a whole are shown in the Appendices.

Amended by Editor

A special medium density residential site (4.87 ha), located in south-eastern portion of The Hamptons NSP has a proposed density of 70 units per hectare. Under the regular Medium Density Residential (MDR) designation the proposed density is 50 units per hectare. The MDR designation generally accommodates a range of residential uses from row housing to walk-up apartments. The increase in density proposed indicated that more of the site would be developed for walk-up apartments than under the regular MDR designation.

Bylaw 13298
March 28, 2003

“A special High Density Residential (HDR) site (1.24 ha), located in the north-eastern portion of The Hamptons Neighbourhood Area Structure Plan, has a proposed maximum density of 224 units per hectare and a maximum height of 23.0 m or 6 storeys. The High Density Residential designation will accommodate residential uses to allow for a mid-rise apartment building.

Bylaw 15614
Jan 31, 2011

5.3 COMMERCIAL

5.3.1 Shopping Centre Commercial

Four community shopping centre sites are proposed for the ASP, one at *Guardian Road* (207 Street) and Whitemud Drive and *three* at 62 Avenue and 199 Street as shown on Figure 7.0. The proposed sites were located along arterials to provide convenient access for customers and delivery vehicles.

Amended by Editor
Bylaw 12869
September 5, 2001

These sites are of a sufficient size to support a wide range of retail, business, medical and professional office uses and will serve residents of The Grange and perhaps other neighbourhoods in the west end. The total area of these sites is identified in the Appendix although their exact configuration and size will be determined in the respective Neighbourhood Structure Plans.

5.3.2 Neighbourhood Commercial

Neighbourhood commercial sites are proposed for two locations within The Grange to augment the services provided by the larger commercial sites with convenience commercial related services such as dry cleaning, convenience and retail stores.

These neighbourhood commercial sites have been located along collector or arterial roadways to provide quick access and visibility with one in Neighbourhood Two along 199 Street on the north side of the looping collector road and the second in Neighbourhood Three along 215 Street on the south side of the northernmost collector roadway.

The approximate area of these sites is identified in the Appendices although their exact configuration and size will be determined in the respective NSP's.

5.4 EDUCATIONAL FACILITIES

A number of sites for public and separate school facilities have been identified in The Grange in consultation with the two School Boards and the City of Edmonton. These sites are planned in conjunction with neighbourhood park and community league facilities and are shown on Figure 7.0.

Edmonton Public Schools has planned for their facilities using a two-tier school system (i.e. Grades K-8 & 9-12 rather than the more traditional K-6, 7-9 & 10-12 system) in order to economize on school facilities and field space. Edmonton Catholic Schools has planned to accommodate elementary/junior high school facilities on each of its sites.

Edmonton Public Schools has proposed K-8 facilities in Neighbourhoods One and Three and two such facilities in Neighbourhood Two. Edmonton Catholic Schools has proposed one K-9 facility in each of Neighbourhoods Two and Three.

The school/neighbourhood park sites have been sized to accommodate the space requirements of the School Boards and City within the available allocation of the 10% municipal reserves. Where the two School Boards share one site, certain efficiencies have been achieved due to the sharing of playing field space.

All of the proposed sites are located along the looping collector roadway through The Grange and access to the sites is intended to be safe and convenient by pedestrian, bicycle, automobile or public transit.

A District Campus site has been identified in The Grange along 215 Street within Neighbourhood Two and is intended to accommodate one Public High School, one Separate High School and district playing fields along with a Public K-8 facility *and a Separate Elementary School*. The Public and Separate High Schools are anticipated to draw students from within The Grange and Lewis Estates.

Although the ASP/NSP amendment would not dispose of any school sites, one of the schools is moved to the District Campus site, which will serve as a central focus for all three neighbourhoods in The Grange. If, in the future, a school site is eliminated from one of the neighbourhood park sites with The Grange, the District Campus is in a better position to serve the entire area. In the event that a school is eliminated on the District Campus Site, the area designated for a school could be easily used for some other regional recreation use. The proposed amendment is consistent with the direction of the

Bylaw 13594
March 1, 2004

Council approved Future Schools Sites Study and the Community Knowledge Campus concept. Further analysis by the Plan proponent and School Boards of ultimate school needs will be completed upon future development of The Grange and Lewis Estates.

In light of the fact that the School Boards and Community Services Department have committed to working within the 10% municipal reserve dedication for The Grange, the areas of all of the school/park sites (particularly the Campus site) have been reduced to conserve on land while maintaining the functionality of the parcels.

The District Campus has been moved further south so that it abuts the portion of the Winterburn Natural Area that will be preserved as Municipal Reserve. This is an advantage, as a much larger portion of the area next to the wood lot would be public space, and provide a better ecological transition to the natural area. Inversely, there would be opportunities for the schools to use the natural area for educational purposes.

Bylaw 13594
March 1, 2004

The areas of the various school/neighbourhood park facilities are shown in the Appendices.

5.5 PARKS & OPEN SPACE

In addition to the school/neighbourhood park facilities, a number of dispersed park sites are proposed throughout the ASP to provide open space throughout the residential areas. The streets and walkway system will link these dispersed park nodes with adjacent residential areas and other amenities in each of the neighbourhoods such as the stormwater management facilities, school/neighbourhood park facilities and commercial sites.

The provision of these parks is intended to enhance the esthetic quality of the residential subdivisions by bringing additional, more accessible green space into the neighbourhoods. These dispersed park sites have been provided for within the 10% municipal reserve dedication. Their exact location will be determined through the preparation of the respective Neighbourhood Structure Plans.

A portion of the Winterburn Woodlot in the southwest portion of

Neighbourhood Two has been identified for preservation and is also connected through the linear walkway system. The area of the pocket parks and conserved woodlot is identified in the Appendix.

5.6 URBAN SERVICES

Three parcels on the east side of 199 Street have been identified in the ASP for Urban Services. The sites are currently owned by three different *religious assemblies* and a *private institution (religious assembly)* has developed a church on the parcel south of the 69 Avenue extension with the intention of developing special purpose/church related, residential uses on the property. An earlier amendment to the original Glastonbury NSP redesignated this site for these particular uses.

Amended by Editor

These sites are well suited for urban services given their relative isolation from the rest of the plan area and ease of access/egress for the traffic volumes they will generate at particular times of the day and week. The development of these sites across a major arterial roadway will add little visual or noise impact on the residential development to the west of 199 Street.

5.7 CIRCULATION SYSTEM

The Grange is well served by a number of proposed and existing arterial and collector roadways as shown on Figure 7.0. With planned access into The Grange available from Whitemud Drive, 45 Avenue, 62 Avenue, 69 Avenue and 215 Street, there are several options available for movement to and from The Grange.

Within the ASP, the arterials and the looping collector road and its extensions provide residents with easy access to the various residential, commercial, recreational and educational nodes. The looping collector road and arterials provide an opportunity for transit service to access within a reasonable walking distance all of the residential areas within The Grange.

A more detailed description of the transportation and circulation system is provided in Section 7.0.

5.8 RESOURCE OPERATIONS

Given the existence of resource extraction operations in The Grange, future urban development will need to plan accordingly to accommodate these facilities. The following sections provide a description of the various policies and legislation that impact these matters.

5.8.1 Urban Development and Resource Operations

Under the former Energy Resources Conservation Board, a number of hearings were held in 1983 and 1984 to discuss the coexistence of resource operations and facilities and existing and future urban development. The hearings established a set of Guidelines to regulate such aspects as the handling of hydrogen sulfide vapours and other mitigative measures to create a peaceful coexistence between urban development and resource operations.

As part of the preparation of the original Grange ASP, research into the potential effects of the release of hydrogen sulfide from oil and gas operations was undertaken by Western Research. Based on the fact that *one of the private corporation's (pipeline)* was, and still is, the sole lease operator of only three active well sites coupled with the fact that there are no battery or storage on the property, Western Research found little cause for concern. Any possible release of hydrogen sulfide vapours would be rare and of little impact on residents.

Amended by Editor

5.8.2 Integration of Resource Operations and Urban Development

The legislation and policies affecting the integration of resource operations and urban development include the *Municipal Government Act - Subdivision and Development Regulation (1995)*, Alberta Energy and Utilities Board *Minimum Setback Recommendations (1997)* and The City of Edmonton's *Policy Guidelines for the Integration of Resource Operations and Urban Development (1985)*.

Subdivision and Development Regulation

The Subdivision and Development Regulation states in Part 2 - Subdivision and Development Conditions, Section 10:

10(1) An application for subdivision or development must not be approved if it would result in development within 100 metres of a gas or oil well unless the development would be within a lesser distance approved in writing by the Alberta Energy and Utilities Board

10(2) For the purposes of this section, distances are measured from the well head to the building or proposed building site.

10(3) In this section, "gas or oil" well does not include an abandoned well as defined by the AEUB.

10(4) An approval of the AEUB under section (1) may refer to applications for subdivision or development generally or to a specific application.

AEUB Minimum Setback Recommendations

The Alberta Energy and Utilities Board states that "Where all wells are concerned, the minimum recommended setback distance for surface improvements is 100 metres. Exceptions to this are surveyed roadways or road allowances which may be as close as 40 metres. Under certain circumstances, it may be acceptable to place surface improvements close than 100 metres to non-sour wells. The AEUB recommends that the proposal be acceptable to the well's licensee. It is up to the development proponent and the well's licensee to come to an agreement on the matter of safety precautions and issues surrounding possible noise and odours."

Typically, the AEUB will look to the municipality, developer and lease operator to provide a reasonable plan with mitigative measures where reductions to the 100 metre setback are contemplated.

The AEUB established the West Edmonton Liaison Committee following the Board hearings to address resource operations and urban development issues within the context of west Edmonton. This group would convene to address issues in The Grange as required.

Policy Guidelines for Integration of Resource Operations & Urban Development

The City of Edmonton's *Policy Guidelines* recommend that Resource Consolidation Plans be prepared upon approval of Area Structure Plans. All of the processing and storage facilities relating to the well sites in The Grange are located within the Lewis Farms ASP and, as such, have been included under the Area 4 Resource Consolidation Plan.

A variety of other recommendations are included in the Policy Guidelines covering such aspects as the designation of the future urban use of resource leases, municipal reserves, surface improvements, separation distances from various land uses, reconfiguration of resource leases and resource equipment upgrades.

The City's Policy, prepared ten years prior to the Subdivision and Development Regulation, noted with respect to separation distances that "subject to conformance with the surface improvement requirements outlined in Section 4.0 of the Policy, the minimum separation distance between a well bore and the edge of the nearest developable parcel shall be 50 metres."

The development concept prepared for The Grange recognizes the existence and operation of the various resource operations. The three active and one suspended well site are within residential nodes and can be easily accommodated within future development plans.

Two of the active well sites are located in the general vicinity of the school/park site in Neighbourhood One, but their well heads would be at least 100 metres from any future school building. Appropriate setbacks between well heads and public road rights-of-way can be accommodated within the plan.

Although access is intended in the Policy Guidelines to be from arterial or collector roadways, there may be instances where convenient access to the well sites will be via the local roadway system. Designing an entire roadway network to accommodate four small well site operations that will not exist in the long term is not logical. All assurances will be made to *the private corporation (pipeline)* that convenient and safe access will be retained to their

Amended by Editor

sites until no longer necessary.

As noted earlier, the lease areas of the three operating wells and one suspended well have been reduced in the past. Reconfiguration of the lease areas may be appropriate upon redistricting and subdivision to accommodate the ultimate land use pattern and to ensure appropriate access.

Details regarding the integration of urban development and resource operations including setbacks, adjustment of resource leases and flow lines will be dealt with at the Neighbourhood Structure Plan and Subdivision stages. Further discussions with the AEUB and the resource operators will be pursued accordingly.

6.0 Engineering Services

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6.0 Engineering Services

The following section describes the engineering service design concepts proposed for The Grange ASP. A more detailed discussion can be found in the Area Master Plan submitted under separate cover.

6.1 STORMWATER DRAINAGE

The stormwater drainage concept for The Grange is outlined on Figure 8.0 - Storm Drainage. As shown, The Grange will generally drain in an easterly direction and will use a major and minor storm sewer system to convey flows to a series of interconnected stormwater management facilities located throughout the basin.

These facilities will in turn drain to a outlet lake located adjacent to 199 Street south of 69 Avenue and will utilize a storm siphon sewer flowing east across the TUC and ultimately connecting to an existing receiving sewer located on 57 Avenue.

Storm Discharge

The storm systems proposed for The Grange will use a design based on post-event discharge to ensure availability of existing capacity in the downstream system.

Using this method, the stormwater management facilities within The Grange will have no discharge during storm events. However, using real time control technology, the stormwater management facilities will be drained into the downstream receiving system after the storm event has passed and the downstream system has capacity to accept the flows.

Detailed information regarding the proposed storm drainage system may be obtained from the Area Master Plan submitted for approval under separate cover.

Figure 8.0 Storm Drainage (Bylaw 16283, December 2, 2012)

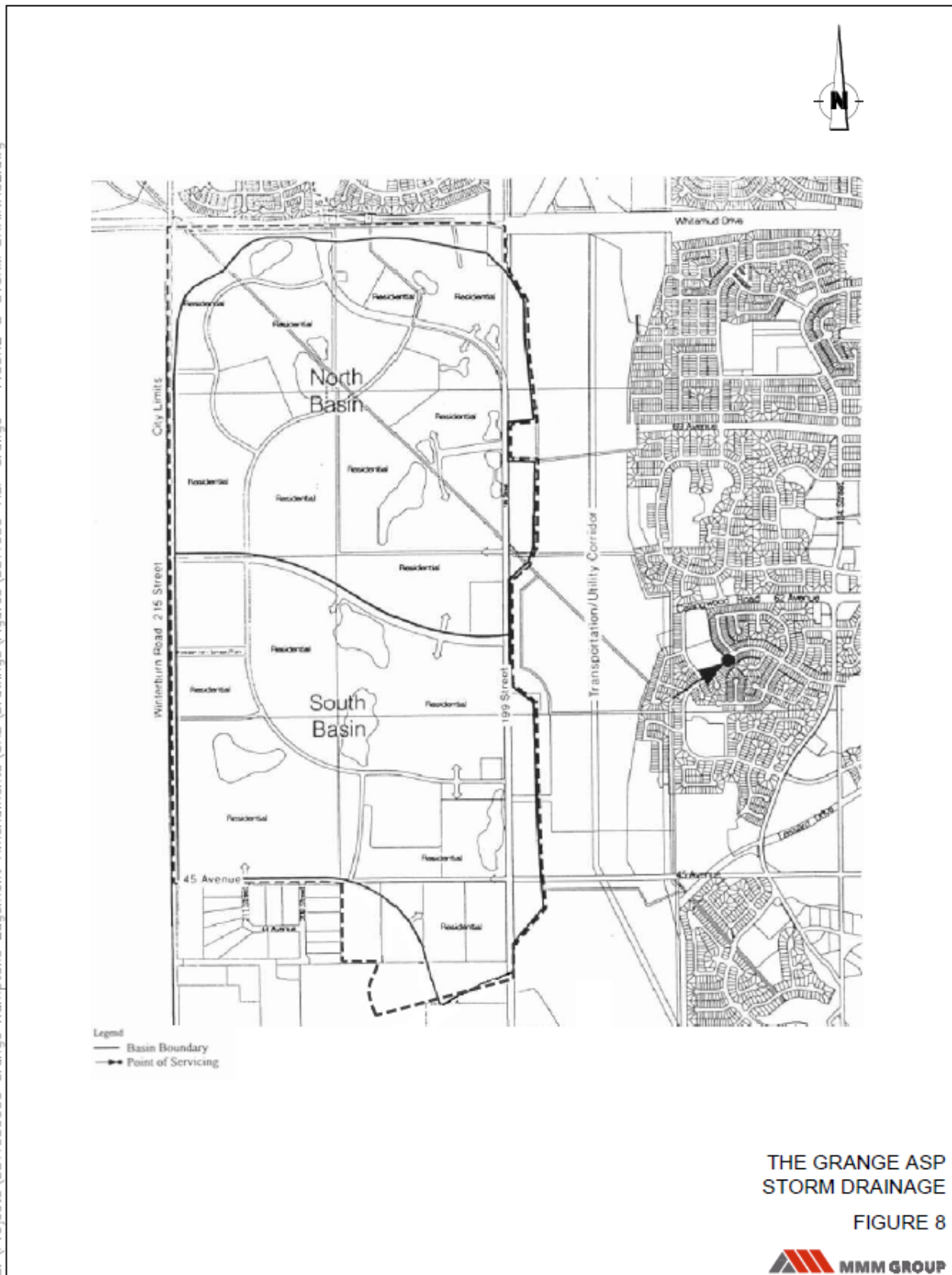
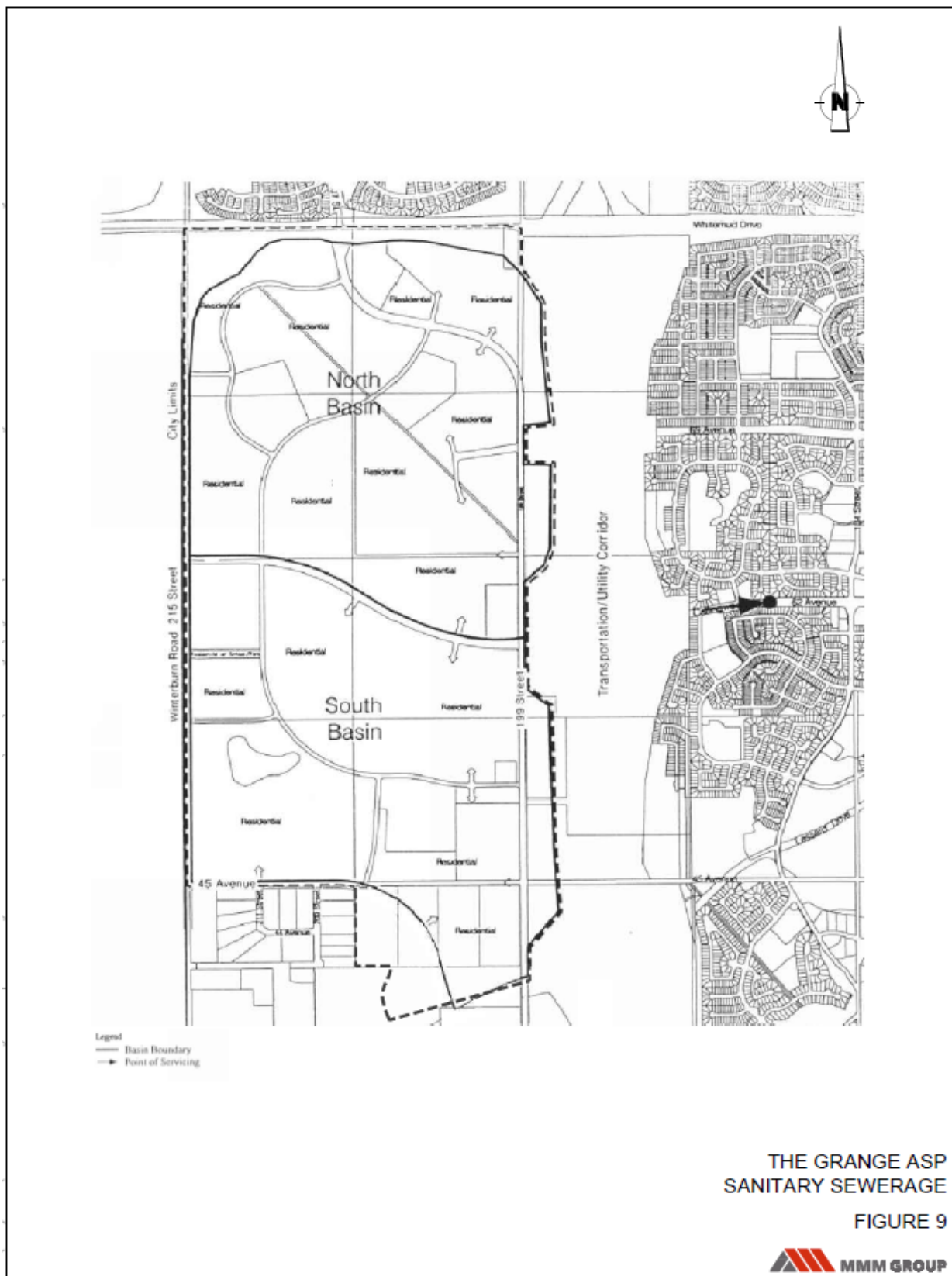


Figure 9.0 Sanitary Sewerage (Bylaw 16283, December 2, 2012)



6.2 SANITARY DRAINAGE

The proposed sanitary system for The Grange is detailed on Figure 9.0 - Sanitary Sewerage and will follow approximately the same design rationale as the storm drainage system.

A major factor in the sanitary servicing of The Grange is the proposal to implement the West Edmonton Sanitary Servicing (WESS) System in the area. The result of this is that The Grange will require on-site sanitary storage to capture flows and a pumping station to release these flows during off-peak hours. This translates into approximately 10,000 m³ of required sanitary storage throughout the area.

Detailed information regarding both the sanitary drainage system and the required storage and pumping capacities is provided in the Area Master Plan.

6.3 WATER DISTRIBUTION

Water servicing will be designed and constructed using conventional methods for providing peak hour flows and fire flows for single family, multi-family, schools, churches and commercial uses. Water looping will be provided in accordance with the requirements of *EPCOR*.

Amended by Editor

6.4 SHALLOW UTILITIES

Gas, power and telephone utility services will be extended west across the TUC from the existing development by the respective utility companies. This work will be done concurrently with the construction of the first stage of The Grange.

7.0 Transportation

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7.0 Transportation

The transportation network for The Grange consists of a full range of facilities to accommodate the movement of automobiles, pedestrians, bicycles and public transit. The following sections describe the proposed systems.

7.1 ROAD NETWORK

The proposed roadway network is shown in Figure 10.0 - Circulation System. The transportation system adjacent to The Grange consists of a number of arterial roadways and proposed freeways which include:

- Whitemud Drive
- Anthony Henday Drive
- 199 Street
- 45 Avenue / Lessard Road
- Winterburn Road (215 Street)

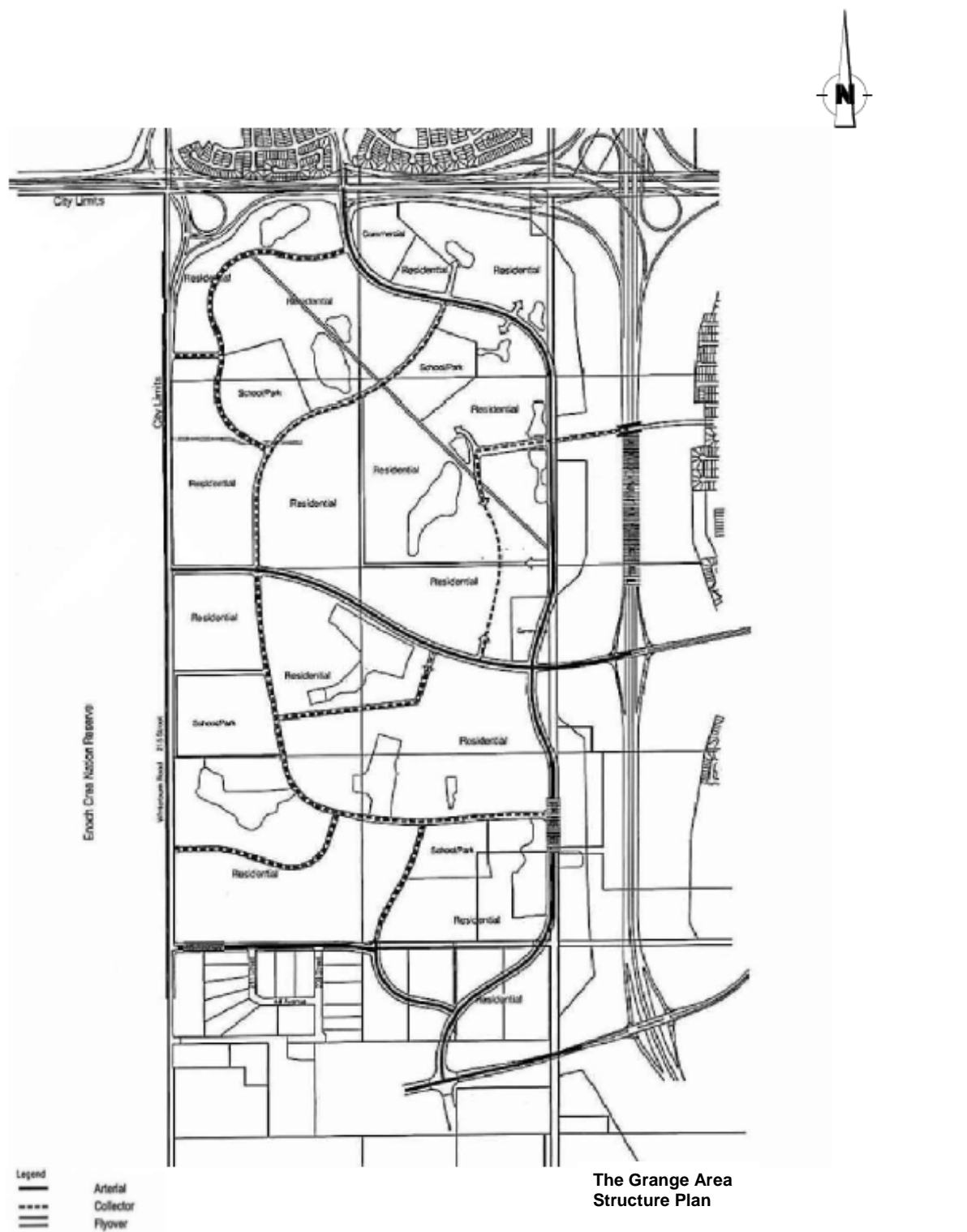
These roadways will accommodate the majority of the traffic in and around The Grange. In addition to the freeways and arterials, the internal roadway network will be made up of collectors, which distribute traffic in the neighbourhoods, and local roads, which provide access to individual residences.

The Transportation and Streets Department required that 199 Street be re-aligned so that the intersection of 199 Street and 62 Avenue would occur further to the west of Anthony Henday, thereby providing more space between the intersections to allow safe stopping and turning movements (Figure 10.0). In addition, the intersection at 199 Street and Lessard Road was re-aligned to provide proper distance separations between intersections required by the City's Transportation and Streets Department and Alberta Transportation.

Bylaw 12869
September 5, 2001

Bylaw 13594
March 1, 2004

Figure 10.0 Circulation Systems* (Bylaw 16283, December 2, 2012)



10.0

THE GRANGE ASP CIRCULATION

FIGURE 10



*Amended by Editor

7.2 TRAFFIC MODELING

The traffic volumes used to determine the roadway configurations were estimated using the following parameters:

- 20 units per hectare and 3.46 people per unit in low density areas.
- 50 units per hectare and 2.98 people per unit in medium density areas.
- 9.2 trips per day for low density areas and 7.2 trips per day in medium density areas.
- Neighbourhood commercial areas were assigned a trip rate of 167.6 trips per 1,000 sq. ft. gross leasable area (GLA). These commercial trips were assumed internal to The Grange. The two larger commercial areas were assigned trip rates of 54.5 trips per 1,000 sq. ft. GLA and 70.7 trips per 1,000 sq. ft. GLA respectively. Of these trips 50% were assumed to be external to The Grange.
- 1.09 trips per student for elementary schools and 1.38 trips per student for high schools. These trips were distributed according to the estimated school capacities and neighbourhood sizes.
- All trip types were split 50% into sites and 50% out of sites.

Daily traffic volumes were generated for the roadway network for full development of The Grange using the above parameters and estimates of population, commercial areas, and school sizes.

7.3 ROADWAY CLASSIFICATION

Figure 10.0 illustrates the proposed roadway classification for The Grange. The freeways and arterials in the area have the following existing and proposed cross-sections:

Whitemud

Drive The Grange is bordered by Whitemud Drive to the north. Whitemud Drive is currently a two lane rural roadway between Anthony Henday Drive and Winterburn Road. Ultimately, Whitemud Drive will be a four lane freeway between Winterburn Road and Anthony Henday Drive. There will be no at grade intersections on Whitemud Drive in the ultimate configuration. Interchanges will be

located at Winterburn Road (215 Street), Lewis Estates Boulevard / Guardian Road [207 Street] (eastbound only), and Anthony Henday Drive.

Amended by Editor

69 Avenue

69 Avenue currently terminates in West Jasper Place at approximately 190 Street. 69 Avenue will ultimately fly over Anthony Henday Drive as a four lane arterial, terminating in the Glastonbury Neighbourhood.

62 Avenue

62 Avenue will ultimately connect with Callingwood Road east of Anthony Henday Drive. In the future, 62 Avenue will be a four lane divided arterial. East of 199 Street it will need to be widened to six lanes to accommodate projected traffic volumes. Ultimately, there will be an interchange at 62 Avenue and Anthony Henday Drive

45 Avenue

45 Avenue currently exists as a two lane rural roadway. 45 Avenue will ultimately be realigned to intersect with 199 Street, *which will then intersect with Lessard Road*. The future alignment of 45 Avenue forms the majority of the southern border of The Grange. *The portion of 45 Avenue located between 199 Street and the intersection with the collector running north and south is proposed to be closed when alternative access linkages and the reconfigured 45 Avenue is constructed.*

Bylaw 13594
March 1, 2004

The proposed configuration of the 45 Avenue arterial is subject to further review to be undertaken under a separate planning exercise that will aim to extend the southern boundary of the Hamptons plan to be coincidental with the northern boundary of a westerly extended Lessard Road arterial. Approval of a plan to extend Lessard Road to 215 Street could mean that designation of 45 Avenue as an Arterial may be unnecessary. Subject to approval of a further plan amendment to extend Lessard Road, and subject to review by the Transportation and Streets Department, the west portion of 45 Avenue could be downgraded to a local road and the south portion to a collector road. If however, there is no further amendment to the plan and 45 Avenue retains its arterial status, then the alignment of 45 Avenue must be altered so that it has a continuous curvilinear alignment. To ensure that flexibility is present in subdivision and access design, in order to accommodate possible changes to the alignment of 45 Avenue, no

Bylaw 13594
March 1, 2004

zoning or subdivision will be allowed that could affect the potential to reconfigure 45 Avenue, until there is further study and approval of a plan to extend Lessard Road to 215 Street.

Lessard Road

Lessard Road will be a four lane arterial roadway west of 199 Street and a six lane arterial east of 199 Street. An interchange is planned for Lessard Road and Anthony Henday Drive.

Winterburn Road (215 Street)

Winterburn Road (215 Street) forms the western boundary of The Grange. Currently it is a two lane rural roadway. Ultimately, the intersection of Winterburn Road and Whitemud Drive will be a fully grade separated interchange. The interchange requirements for this intersection cannot be clearly defined at this time. The actual extent of development in the vicinity of this interchange is therefore subject to review and revision. Winterburn Road will be a six lane divided arterial from approximately midway between 45 Avenue and 62 Avenue north to Whitemud Drive. South of this point Winterburn Road will be a four lane divided arterial. In this plan, the entire Winterburn Road right-of-way is proposed to be located on the east side of the quarter section line recognizing that it may not be possible to acquire additional right-of-way from the Enoch Cree Nation Reserve.

199 Street/ Guardian Road (207 Street)

Amended by Editor

199 Street is currently a 2 lane rural roadway. Ultimately the north end of 199 Street will be closed and realigned to the west to intersect Whitemud Drive at Guardian Road (207 Street). The majority of 199 Street will be a four lane divided arterial. The realigned portion of 199 Street will be widened to six lanes. *Arterial roadway access from 199 Street is redirected west, curving southward, to connect with 45 Avenue at a T-intersection in response to the configuration of Lessard Road.*

Bylaw 13594
March 1, 2004

Anthony Henday Drive

Although Anthony Henday Drive does not currently exist south of Whitemud Drive, right of way has been reserved for its future development. Ultimately Anthony Henday Drive will be an eight lane freeway with interchange access at Lessard Road, 62 Avenue, and Whitemud Drive. 69 Avenue will fly over Anthony Henday Drive and

Amended by Editor

thus have no access to the freeway.

The remainder of the internal roadway network is made up of major and minor collectors, and local roads.

7.4 STAGING OF ROADWAY IMPROVEMENTS

It has been determined that at a certain development threshold (subdivision approval of 150 lots) in The Grange, the intersection of 199 Street and Whitemud Drive will no longer be able operate at an acceptable level of service during peak hours. At a minimum, installation of signals and some minor intersection improvements at the intersection of 199 Street and Whitemud Drive will be required to accommodate further increases in traffic from The Grange. A number of other options other than improving 199 Street exist as follows:

1. Construct the Guardian Road (207 Street) extension of 199 Street. The property required for the roadway right-of-way may not be available in the short-term.
2. Close 199 Street south of Whitemud Drive and reroute traffic to other sections of the existing roadway network. This would improve traffic operations on Whitemud Drive west of Anthony Henday Drive. However, the traffic that previously used 199 Street would be rerouted to -Winterburn Road, Lessard Road, 62 Avenue, or 69 Avenue. This would cause increased capacity problems on 170 and 178 Streets near Whitemud Drive. In fact the existing traffic on 199 Street if diverted to 170 and 178 Streets is likely to cause the intersections on the Whitemud Drive ramps to experience congestion problems.
3. Construct the initial two lanes of Anthony Henday Drive from Whitemud Drive to a temporary at grade intersection at 69 Avenue. Since ultimately 69Avenue will not have access to Anthony Henday Drive it will be necessary to notify the public, through informational signing at the intersection, of the temporary nature of this connection.

Given the unknown status of construction of Anthony Henday Drive and property required to accommodate Guardian Road (207 Street), it is recommended that these four options (or other options meeting the

Amended by Editor

satisfaction of the Transportation & Streets and Planning & Development Departments) be reviewed in more detail as the 150 lot subdivision approval limit is being reached.

7.5 ARTERIAL ROAD CONSTRUCTION & COST SHARING

An Arterial Roadway Assessment for The Grange will be established prior to the first development proceeding. These moneys may be used towards the construction of permanent arterial roadways in and adjacent to The Grange, and other permanent major roadways to access The Grange, as may be mutually agreed. These moneys may not be used for any interim access roadways that may be provided.

The Arterial Roadway Assessment will ensure that all assessable lands within The Grange contribute equitably to the cost of the arterial roadway system. The assessment will pay for the following improvements:

- Upgrading of the existing two lanes of 199 Street from the realignment point where it becomes Guardian Road (207 Street) south to the southern boundary of the ASP.
- Construction of two lanes of the realigned portion of 199 Street/Guardian Road (207 Street) from the realignment point north to Whitemud Drive
- Construction of two lanes of 69 Avenue from its existing termination point east of the TUC to 199 Street.
- Construction of two lanes of 62 Avenue from its existing termination point east of the TUC to 215 Street.
- Construction of one lane of Lessard Road and 45 Avenue from 199 Street to 215 Street. The second of the two lanes will be paid for by the Grange south area.
- Construction of one lane of 215 Street from 45 Avenue to Whitemud Drive.
- The cost will include land acquisition, grading, drainage and all required curb, gutter, walk (if necessary) and lighting. This total cost divided by the assessable area of The Grange will create the Arterial Roadway Assessment.

Amended by Editor

7.6 TRANSIT SERVICE

Public transit will be provided on the collector and arterial roadways in The Grange. Approximately 99% of the residential areas will be within an acceptable walking distance of probable transit routes. An extensive walkway system proposed for The Grange will aid in achieving an acceptable walking distance for individuals using the transit system.

The proposed district campus site is adjacent to *one arterial* and a collector. By locating the schools along the collector roadways and arterials, they will be well served by the transit system and easily accessed by automobile. This provides excellent potential for transit service to the site. During the initial development stages of the area, it will be necessary to provide school bus service to schools outside of The Grange pending construction of the schools.

Bylaw 13594
March 1, 2004

Similar to the public transit system, the collector road system would be used by the school buses to access the majority of the area.

7.7 BICYCLE ROUTES & WALKWAYS

All arterial roadways in and adjacent to The Grange will have 2.5 metre wide sidewalks on one side, designated for bicycle use. Collector and local roadways will only be signed as bicycle routes where they form a logical component of a functional bicycle route.

Extensive walkways will be provided throughout the area. The majority of these will follow utility right-of-ways and the stormwater management system that runs through the centre of The Grange. Additional walkways will connect this core route to schools and neighbourhood parks. The walkways are intended to provide both access to recreation areas and reduce walking distances to public transit.

8.0 Implementation

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8.0 Implementation

The Grange has been divided into three neighbourhoods, the first of which has statutory approval under the Glastonbury Neighbourhood Structure Plan. The second and third neighbourhoods do not currently have approved NSPs in place.

Given the wholesale revisions to The Grange ASP described in this document, the NSP for Glastonbury will be revised accordingly and submitted to the City. An NSP for Neighbourhood Two, The Hamptons, will also be prepared based on the ASP and submitted concurrently.

Timing for the preparation of a NSP for Neighbourhood Three has not been confirmed.

8.1 DEVELOPMENT STAGING

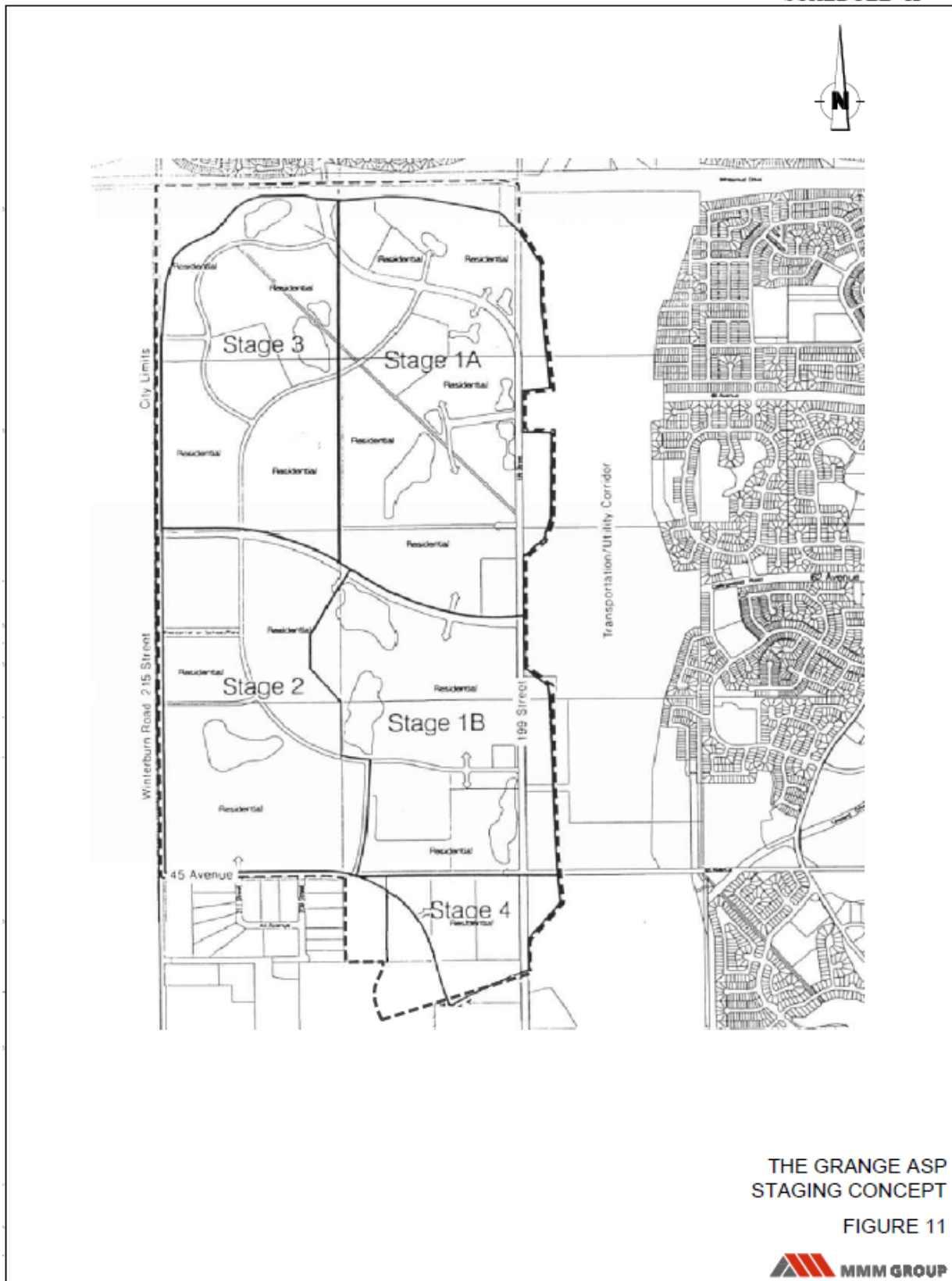
As shown on Figure 11.0 - Staging Concept, development in The Grange is expected to begin concurrently within both neighbourhoods one and two given current market conditions and availability of services across the TUC.

Development with the Glastonbury NSP is anticipated to begin on the west side of 199 Street north and south side of 69 Avenue and then proceeding in a westerly manner. Development within The Hamptons NSP is anticipated to begin south of 62 Avenue along both sides of 199 Street and then proceed in a southerly and westerly manner.

Neighbourhood Three is expected to proceed following the substantial completion of development in Neighbourhoods One and Two.

Development will take place on a staged basis within each of the neighbourhoods and more detailed staging plans will be described in the respective NSPs. The pace of future development will depend on many factors and will be primarily market related.

Figure 11.0 Staging Concept* (Bylaw 16283, December 2, 2012)



*Amended by Editor

8.2 **REZONING**

As noted earlier, a substantial portion of the East 1/2 Section 19-52-25-4 is currently *zoned* to accommodate the development of single family housing, stormwater management facilities and park space. Revised *rezoning* plans for the areas under development will be submitted to the Planning & Development Department to reflect the revised development concept.

Amended by Editor

Amended by Editor

It is recommended that the *rezoned* be handled in large, contiguous blocks to accommodate wholesale revisions to the currently districted parcels. This will eliminate the possibility of isolating any small, remnant parcels of land under the existing districts.

Amended by Editor

The majority of the West 1/2 of Section 19-52-25-4 is currently districted to accommodate the development of a mobile home park plus neighbourhood convenience store sites and park space. As per Figure 7.0, this land is designated in the ASP for residential and a school/park site. It is proposed that the property be *rezoned* to land uses consistent with the ASP prior to development.

Amended by Editor

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**THE GRANGE AREA STRUCTURE PLAN
PROPOSED LAND USE AND POPULATION STATISTICS
BYLAW 16283**

	<u>Area (ha)</u>	<u>% of GA</u>
GROSS AREA	598.32	100.0%
Arterial Roads	48.50	8.1%
Resource Pipelines and Facilities	6.63	1.1%
GROSS DEVELOPABLE AREA	543.19	100.0%
Commercial		
Commercial Shopping Centre	11.04	2.03%
Commercial Other	19.06	3.51%
Parkland, Recreation, School (Municipal Reserve)		
District Campus Site and K-8 Public School	19.10	3.52%
K-8 Public and K-9 Separate Schools and Neighbourhood Park (2 sites)	15.84	2.92%
K-8 Public School and Neighbourhood Park (1 site)	7.90	1.45%
Winterburn Woodlot	6.45	1.19%
Oblate Mission Site Park	0.22	0.04%
Dispersed Parks	4.90	0.90%
Transportation		
Circulation	88.93	16.37%
Infrastructure / Servicing		
Stormwater Management Facilities	41.65	7.67%
Urban Services	16.75	3.08%
TOTAL Non-Residential Area	231.84	42.68%
Net Residential Area (NRA)	311.35	57.32%

RESIDENTIAL LAND USE AREA, UNIT & POPULATION COUNT

<u>Land Use</u>	<u>Area (ha)</u>	<u>Units/ha</u>	<u>Units</u>	<u>People/Unit</u>	<u>Population</u>	<u>% of NRA</u>
Low Density Residential (LDR)						
Single/Semi-Detached	252.1	25	6,303	2.8	17,648	80.97%
Medium Density Residential (MDR)						
Row Housing	33.9	45	1,526	2.8	4,273	10.89%
Low-rise/Medium Density Housing	24.11	90	2,170	1.8	3,906	7.74%
Medium to High Rise	1.24	225	279	1.5	419	0.40%
Total Residential	311.35		10,278		26,246	100.0%

SUSTAINABILITY MEASURES

Population Per Net Hectare (ppnha)	84.2
Units Per Net Residential Hectare (upnrha)	33.0
[Single/Semi-Detached] / [Low-rise/Multi-/Medium Units] Unit Ratio	61% / 39%
Persons per Gross Developable Hectare	48.3

For purposes of the Capital Region Board Net Density is 33.0 upnrha (based on 10,278 units divided by 311.35 hectares of Net Residential Area).

STUDENT GENERATION COUNT

Public School Board	2,183
Grades K-8	1,457
Grades 9-12	726
Separate School Board	1,913
Grades K-8	1,434
Grades 9-12	479
Total Student Population	4,095

(Approved December 2, 2012)

THE GRANGE AREA STRUCTURE PLAN – NEIGHBOURHOOD ONE
GLASTONBURY NEIGHBOURHOOD STRUCTURE PLAN
LAND USE AND DEMOGRAPHIC PORFILE
(BYLAW 11749)

					AREA (ha)
GROSS AREA					178.76
Arterial Roadways					
Whitemud Drive				6.92	
207/199 Street				8.86	
62 Avenue				1.78	
					17.56
Resource Pipelines and Facilities					
Private Corporation				2.39	
Private Corporation				2.16	
Private Corporation				0.27	
					4.82
GROSS DEVELOPABLE AREA					156.38
Stormwater Management Facilities				11.45	
Municipal Reserve					
K-8 Public School and Neighbourhood Park			7.90		
Dispersed Parks			0.80		
					8.70
Non-Residential Land Uses					
Commercial – Shopping Centre			9.90		
Urban Services			8.65		
					18.55
Circulation (Collector and Local Roads, and Walkways)				24.71	
Sub-Total					63.41
NET RESIDENTIAL AREA					92.97

RESIDENTIAL LAND USE ANALYSIS

Land Use	Area (ha)	Units/ha	Units	Pop/Unit	Population	LDR/MDR RATIO
Low Density Res.	76.51	20	1,530	3.46	5,294	65.0%/35.0%
Medium Density Res.	16.46	50	823	2.98	2,453	
TOTAL	90.59		2,338		7,588	Persons per Gross Developable Hectare
						49.54

STUDENT GENERATION STATISTICS

LEVEL	Public	Separate	Total
Grades K-8	1,081	341	1,422
Grades 9-12	404	127	531
TOTAL	1,485	468	1,953

**THE GRANGE AREA STRUCTURE PLAN - NEIGHBOURHOOD TWO
THE HAMPTONS NEIGHBOURHOOD STRUCTURE PLAN
LAND USE AND DEMOGRAPHIC PROFILE
(BYLAW 16283)**

**THE HAMPTONS NEIGHBOURHOOD STRUCTURE PLAN
PROPOSED LAND USE AND POPULATION STATISTICS
BYLAW 16283**

	AREA (ha)	% of GA
GROSS AREA	284.56	100%
Arterial Roadways	12.51	4.36%
GROSS DEVELOPABLE AREA	272.05	100.0%
Commercial		
Major Commercial	3.62	1.26%
Neighbourhood Commercial	0.40	0.14%
Parkland, Recreation, School (Municipal Reserve)		
CKC / School / Park	26.30	9.16%
Natural Area (Municipal Reserve)	7.53	2.62%
Transportation		
Circulation	45.35	16.67%
Infrastructure / Servicing		
Stormwater Management Facilities	20.44	7.12%
PUL/Water Quality Sediment Ponds	9.20	3.2%
TOTAL Non-Residential Area	112.84	39.65%
NET RESIDENTIAL AREA	159.21	56.00%

RESIDENTIAL LAND USE AREA, UNIT & POPULATION COUNT

Land Use	Area (ha)	Units/ha	Units	Pop/Unit	Population	% OF NRA
Low Density Residential (LDR)						
Single/Semi-Detached	138.38	25	3,460	2.8	9,688	86.92%
Medium Density Residential (MDR)						
Row Housing	1.54	45	69	2.8	194	0.97%
Low-rise/Medium Density Housing	18.05	90	1,625	1.8	2,925	11.34%
Medium to High Rise	1.24	225	279	1.5	419	0.78%
Total Residential	159.21		5,433		13,226	100.0%
Units Per Net Residential Hectare	34					

SUSTAINABILITY MEASURES

Population Per Net Hectare (ppnha)	83.1
Units Per Net Residential Hectare (upnrha)	34.1
[Single/Semi-Detached] / [Low-rise/Multi-/Medium Units] Unit Ratio	64% / 36%
Persons per Gross Developable Hectare	48.6

For purposes of the Capital Region Board Net Density is 34.1 upnrha (based on 5,433 units divided by 159.21 hectares of Net Residential Area).

STUDENT GENERATION COUNT

Public School Board		1,088
Grades K-8	544	
Grades 9-12	544	
Separate School Board		218
Grades K-8	109	
Grades 9-12	109	
Total Student Population		1,306

(Bylaw 16283, Approved December 3, 2012)

THE GRANGE AREA STRUCTURE PLAN – NEIGHBOURHOOD THREE
GRANVILLE NEIGHBOURHOOD STRUCTURE PLAN
LAND USE AND DEMOGRAPHIC PROFILE
(Bylaw 14733)
(Amended by Editor)

						<u>AREA (ha)</u>
GROSS AREA						600.74
Arterial Roadways						
Whitemud Drive				14.17		
215 Street				9.87		
207/199 Street				17.20		
62 Avenue				6.69		
Lessard Road				0.57		
						<hr/> 48.50
Resource Pipelines and Facilities						
Chevron Canada Resources Ltd.				3.41		
Northwestern Utilities Limited				2.95		
NUL Gate Station				0.27		
						<hr/> 6.63
GROSS DEVELOPABLE AREA						<hr/> 545.61
Stormwater Management Facilities						41.65
Municipal Reserve						
District Campus Site and K-8 Public School			19.10			
K-8 Public and K-9 Separate Schools and Neighbourhood Park (2 sites)			15.84			
K-8 Public School and Neighbourhood Park (1 Site)			7.90			
Winterburn Woodlot			6.45			
Oblate Mission Site Park			0.22			
Dispersed Parks			4.90			
						<hr/> 54.41
Non-Residential Land Uses						
Commercial - Shopping Centre			11.04			
Commercial – Other			18.38			
Urban Services			15.53			
						<hr/> 44.95
Circulation (Collector and Local Roads, and Walkways)						89.01
Sub-Total						<hr/> 230.02
NET RESIDENTIAL AREA						<hr/> 315.59
RESIDENTIAL LAND USE ANALYSIS						
Land Use	Area (ha)	Units/ha	Units	Pop/Unit	Population	LDR/MDR RATIO
Low Density Res.	256.36	20	5,127	3.46	17,740	60.21 % LDR
Medium Density Res.	8.04	40	322	2.98	958	39.79 % MDR
Medium Density Res.	25.86	50	1,293	2.98	3,853	
Medium Density Res.	25.33	70	1,773	2.98	5,284	
TOTAL	315.59		8,515		27,835	Persons per Gross Developable Hectare
						51.02
STUDENT GENERATION STATISTICS						
LEVEL	Public	Separate	Total			
Grades K-8	1,457	1,434	2,891			
Grades 9-12	726	479	1,205			
	2,182	1,913	4,095			