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OFFICE CONSOLIDATION

2018 July

Saddle Ridge

Area Structure Plan and Supporting Information

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Onward! By 2036, land use efficiency will have increased by at least 30 per cent, as measured by public transit threshold and increased density.



THE CITY OF
CALGARY

PLANNING, DEVELOPMENT & ASSESSMENT

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For the purposes of electronic publications the Blue Pages are identified by the footer “Saddle Ridge Area Structure Plan - Supporting Information”.

Saddle Ridge

Area Structure Plan and Supporting Information

OFFICE CONSOLIDATION

2007 NOVEMBER
2008 JULY
2011 JUNE
2013 JULY
2014 JUNE
2016 JANUARY
2018 JULY



THE CITY OF
CALGARY

PLANNING, DEVELOPMENT & ASSESSMENT

NOTE: This Office Consolidation includes the following amending Bylaws:

AMENDMENT	BYLAW	DATE	DESCRIPTION
1	11P85	1985 July 22	(a) Section 8.1 - Delete entire section, replace with new section (b) May 11 - Add (superceded by 18P90, 15P97)
2	15P85	1986 February 10	(a) Section 4.5.1 - Add new paragraph (superceded by 36P97)
3	18P90	1990 September 10	(a) Maps 1-11 - Replace (maps 3,6,8,9 superceded by 7P93, superceded by 15P97) (b) Executive Summary - Delete paragraph (c) Section 1.1 - Delete wording; delete paragraph (d) Section 1.2 - Delete text, replace with new text (e) Section 1.3 - Delete paragraph, replace with new text (f) Section 2.5.2 - Delete paragraph, replace with new text (g) Section 3.4 - Delete paragraph; replace with new text; delete sentence, replace with new text (h) Section 3.6 - Delete section, replace with new section (partially superceded by 36P97) (i) Section 3.7 - Delete sentence, replace with new text (j) Section 3.7 - Revise wording (k) Section 4.2 Delete sentence and paragraph (l) Section 5.1 - Revise wording (m) Section 5.2 - Delete paragraph (n) Section 5.3 - Delete sentence, replace with new text (o) Section 6.1 - Revise wording (superceded by 15P97) (p) Section 6.5 - Revise wording (q) Section 8.1 - Add new paragraph
4	7P93	1993 May 10	(a) Maps 3,6,8,9 - Replace (superceded by 15P97) (b) Section 2.1.3 - Add new text (c) Section 2.3 - Delete paragraph, replace with new text (d) Section 4.1 - Delete sentences, replace with new text (e) Section 4.3 - Delete paragraph, replace with new text (f) Section 4.6 - Delete paragraphs, replace with new text (g) Section 6.2 - Delete paragraph, replace with new text (h) Section 6.3 - Delete paragraphs, replace with new text
5	15P97	1997 June 26	(a) Executive Summary - Revise wording (b) Section 4.1 - Add new sentence, amend wording (c) Section 4.2 - Add new paragraphs; add new subsection (Section 4.2.1) (d) Section 4.3 - Revise paragraph, add new paragraph (e) Section 4.4.2 - Delete section, replace with new text (f) Section 4.5.1 - Add new sentence; add new text; add new paragraphs (g) Section 4.6 - Delete paragraphs, replace with new text (h) Section 4.7 - Delete paragraphs, replace with new text (i) Section 5.2 - Delete paragraphs, replace with new text (j) Section 5.3 - Delete sentences, replace with new text

AMENDMENT	BYLAW	DATE	DESCRIPTION
continued			
5	15P97	1997 June 26	(k) Section 6.1 - Delete section, replace with new text (l) Section 6.3 - Revise wording (m) Maps 1-11 - Replace
6	36P97	1998 March 16	(a) Section 2.4 - Delete paragraph; delete sentence, replace with new text (b) Section 2.5.1 - Delete paragraph; delete sentence, replace with new text (c) Section 3.5.1 - Delete sentence (d) Section 3.6 - Delete sentence, replace with new text (e) Section 4.5.1 - Delete paragraph, replace with new text (f) Section 5.4 - Delete paragraph, replace with new text
7	12P98	1998 May 11	Abandoned
7	6P2006	2006 April 24	(a) Section 3.7 - Add text.
8	28P2006	2006 December	(a) Section 4.5.1 - Delete paragraphs, replace with new text
9	18P2007	2007 July	(a) Section 4.2 - Delete paragraph and replace with new text
10	28P2007	2007 November 12	(a) Section 4.2 - Delete and replace text (b) Section 4.2.1 - Add text (c) Map 6 "Land Use Plan" - Replace (d) Section 4.7 - Add new Section 4.8
11	56P2008	2008 July 14	(a) Delete and Replace Map 4 (b) Section 3.7 - add new text
12	20P2011	2011 June 13	(a) Add subsections "4.2.2 Transitional Residential Area" and "4.2.3 Medium Residential Area" after Section 4.2.1. (b) Under Sections 4.2 and 4.8 delete the words "Special Planning Area" and replace with "Neighbourhood Activity Centre". (c) Under Section 4.5, following the end of the second paragraph, add sentence beginning with "The allocation of Municipal Reserve...". (d) Delete and replace Map 6 entitled "Land Use Plan". (e) Add Subsection " 6.0.1 Utility Alignments" after Section 6.0. (f) Under section 6.1 after the last paragraph add sentence beginning with "A 900mm feeder main...". (g) Add Subsection "6.1.1. Design and Review of Water Distribution System" after Section 6.1. (h) Under Section 6.2 add text after the last paragraph beginning with "Cell D will be...". (i) Add Subsection "6.2.1 Design and Analysis of Sanitary Sewer System" after Section 6.2. (j) Section 6.3. after the last paragraph add text beginning with "The Cell D area...". (k) Add Subsections "6.3.1 Design of Stormwater Management System" and " 6.3.2 Best Management Practices for Staged Master Drainage Plans " after Section 6.3.
13	29P2013	2013 July 22	(a) Map 5 "Development Cells" - replace (b) Map 6 "Land Use Plan" - replace (c) Map 7 "Proposed Northeast Transportation Network - Conceptual" - replace (d) Map 8 "Water Supply and Sanitary Sewers Conceptual" - replace

AMENDMENT	BYLAW	DATE	DESCRIPTION
continued			<ul style="list-style-type: none"> (e) Map 9 "Stormwater Management Conceptual" - replace (f) Section 6.3 - add new text (g) Map 10 "Utilities Conceptual" - replace (h) Map 11 "Sour Gas Constraint Area" - replace (i) Replace "36 Street Expressway" with Metis Trail N.E. except in Sections 3.2 & 3.3 (j) Section 3.2 add text (k) Section 4.5.2 delete & replace text
14	36P2013	2013 July 26	<ul style="list-style-type: none"> (a) Subsection 4.8.2(2) delete & replace text (b) Subsection 4.8.2(2)(a) delete & replace text
15	17P2014	2014 June 10	<ul style="list-style-type: none"> (a) In the Executive Summary, second paragraph, in the first sentence, delete and replace text "882 hectares/2,180 acres". (b) In the second paragraph of the Executive Summary, in the last sentence, delete and replace text "; and a mixed light industrial/office park and possible regional centre to the north." (c) Delete the last paragraph of the Executive Summary delete and replace text in its entirety. (d) Delete and replace Map 1 entitled "Study Area Location". (e) Delete and replace the third paragraph of Subsection 1.3 in its entirety. (f) Delete and replakce Map 2 entitled "Study Area Context". (g) Delete Map 3 entitled "Existing Land Use". (h) Delete and replace the first and second paragraphs of Subsection 2.4 Natural Gas Field in their entirety. (i) Insert Table 1, after the second paragraph of Subsection 2.4 Natural Gas Field. (j) Delete and replace the first sentence In the second paragraph of Subsection 2.5.1 Calgary International Airport. (k) Delete from the third sentence in the second paragraph of Subsection 2.5.1 Calgary International Airport (l) Delete and replace the last sentence In the second paragraph of Subsection 2.5.1 Calgary International Airport. (m) Delete Subsection 2.5.2 in its entirety. (n) Delete and replace Map 4 entitled "Development Constraint Area." (o) Delete Subsection 2.2 in its entirety and renumber subsequent Subsections accordingly. (p) Delete and replace text from the first sentence in the second paragraph of Subsection 3.5.1 Calgary International Airport Vicinity Protection Area (A.V.P.A.) Regulations. (q) Delete text from the second sentence in the second paragraph of Subsection 3.5.1 Calgary International Airport Vicinity Protection Area (A.V.P.A.) (r) Insert paragraph after the second paragraph of Subsection 3.5.1 Calgary International Airport Vicinity Protection Area (A.V.P.A.) Regulations. (s) Insert text in he third paragraph of Subsection 3.5.1 Calgary International Airport Vicinity Protection Area (A.V.P.A.) Regulations.

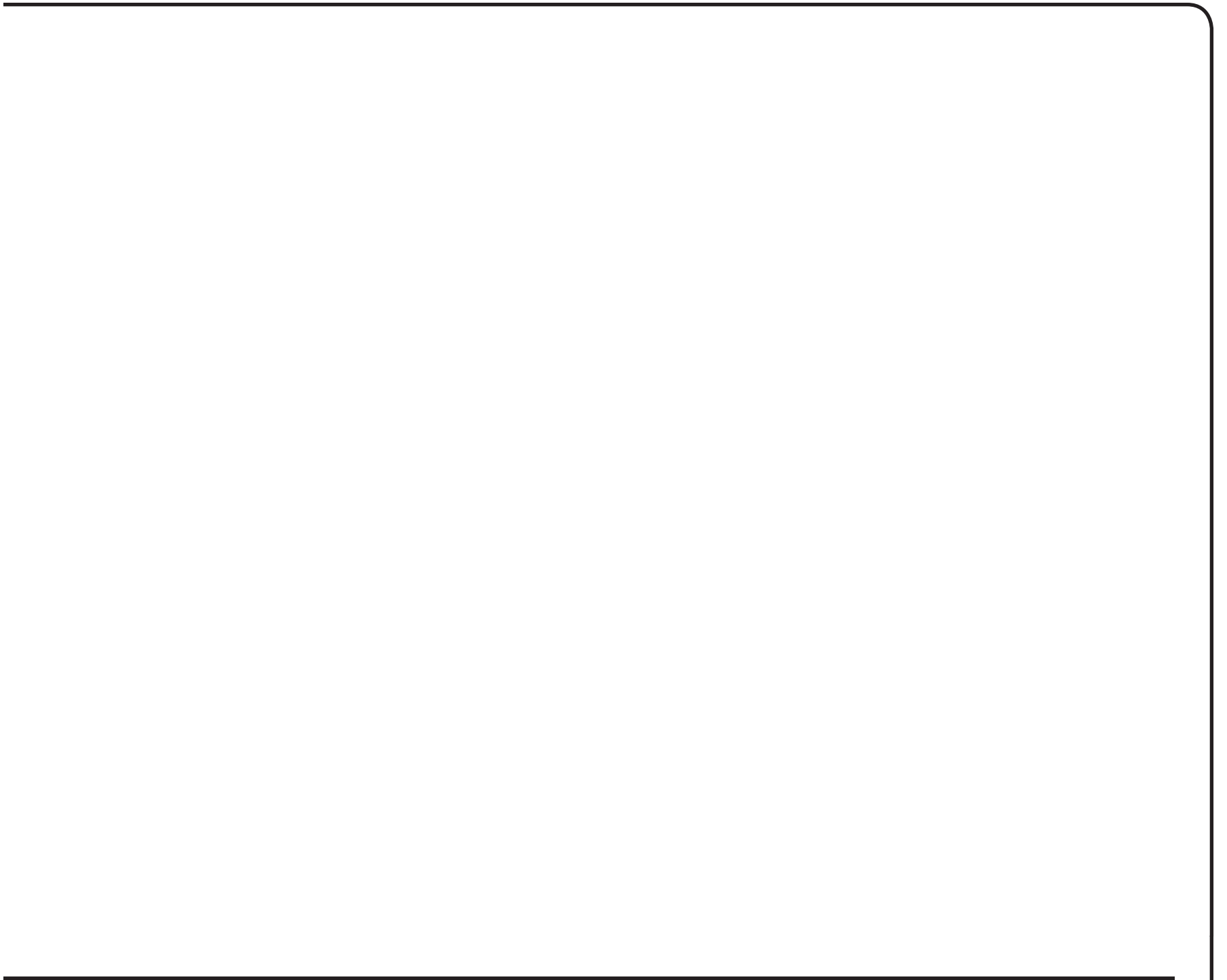
AMENDMENT	BYLAW	DATE	DESCRIPTION
continued			
15	17P2014	cont'd	<ul style="list-style-type: none"> (t) Delete and replace the first sentence in the first paragraph of Subsection 3.5.2 Calgary International Airport Area Zoning Regulations. (u) Delete and replace text from the second sentence in the first paragraph of Subsection 3.5.2 Calgary International Airport Area Zoning Regulations. (v) Delete sentence in its entirety from the first paragraph of Subsection 3.6 Calgary Area Aviation Master Plan beginning with "In 1986...". (w) In Subsection 3.6 Calgary Area Aviation Master Plan i) delete "sometime after the year 2000" and replace with "will be completed in 2014". (x) Delete and replace Subsection 3.7 Sour Gas Facility Setbacks in its entirety. (y) Delete and replace Subsection 3.8 Northeast Transportation Studies in its entirety. (z) In Subsection 4.1 General Concept, <ul style="list-style-type: none"> a. In the second sentence of the second paragraph, replace "Four" with "Five" and replace "(A, B, C, and D)" with "(A, B, C, D, and E), and replace "50,000" with "58,000" b. In the third paragraph, <ul style="list-style-type: none"> i. Delete the first sentence in its entirety. ii. Delete the last three sentences of the third paragraph beginning with "To the east of this area... to the satisfaction of the Planning & Building Department." iii. Add new sentence after the second sentence. c. In the fifth paragraph, fourth sentence, delete "the employment-generating development" and replace with new text. d. In the fifth paragraph, delete the last sentence in its entirety. (aa) Delete and replace text In Subsection 4.2. (bb) In Subsection 4.2.1, add an "s" to "Neighbourhood Activity Centre" (cc) In Subsection 4.2, after the ninth paragraph, add new subsection entitled, " 4.2.1 Cell E Residential Area" and renumber subsequent subsections. (dd) In Subsection 4.2, eighth paragraph, insert "Cell D" before "Neighbourhood Activity Centre" (ee) In Subsection 4.3, paragraph 2, last sentence, Delete "unless there are changes to the ASP which result in substantial residential development in Cell E." (ff) In Subsection 4.3, delete the third paragraph. (gg) Delete Subsection 4.4.1 in its entirety and renumber subsequent Subsections accordingly. (hh) Delete and replace Map 6 entitled "Land Use Plan". (ii) In Subsection 4.4.2 3., delete "Cells, B, C and D" and replace with "Cells B, C, D, and E." (jj) Delete Subsection 4.5.2 Industrial/Office Park in its entirety. (kk) In Subsection 4.8, add "(NAC)" at the end of the title "Neighbourhood Activity Centre" (ll) In Subsection 4.8.1, in the second sentence of the first paragraph, delete "The Neighbourhood Activity Centre is" and replace with new text. (mm) In Subsection 4.8.2(1)(a), delete "may" and replace with "shall".

AMENDMENT	BYLAW	DATE	DESCRIPTION
continued 15	17P2014	cont'd	<p>(nn) In Subsection 4.8.2 (3), add the following subsection (c).</p> <p>(oo) In Subsection 4.8.2, after Subsection 4.8.2(5) add: new subsection 4.8.2(6).</p> <p>(pp) Add new subsection: called 4.9 Community Activity Centre (CAC)</p> <p>(qq) In Subsection 5.1, sixth paragraph, first sentence delete "the potential regional centre and the business park in"</p> <p>(rr) In Subsection 5.1, delete the seventh paragraph in its entirety.</p> <p>(ss) Delete and replace Map 7 entitled "Proposed Northeast Transportation Network"</p> <p>(tt) Delete and replace the fourth and fifth sentences in the third paragraph of Subsection 5.3.</p> <p>(uu) In Subsection 5.3, fifth paragraph, delete "noted" after "higher density" and replace with "Community Activity Centre"</p> <p>(vv) Insert new text after the third paragraph in Subsection 6.2 Sanitary Sewers.</p> <p>(ww) Delete and replace first sentence in Subsection 7.1, first paragraph.</p> <p>(xx) In Section 8.0, second paragraph, delete "50,000" from the first sentence and replace with "58,000"</p> <p>(yy) Delete Section 8.1 in its entirety.</p>
16	3P2016	2016 January 11	<p>(zz) Delete the existing Map 11 entitled "Sour Gas Constraint Area"</p> <p>(a) Delete and replace Map 2 entitled "Study Area Context"</p> <p>(b) Delete and replace Map 5 entitled "Development Cells"</p> <p>(c) Delete, in its entirety, Sections 4.2.3 and 4.2.4, entitled, "Transitional Residential Area" and "Medium Density Residential Area"</p> <p>(d) Insert a new Section 4.2.3, entitled, "Cell D Residential Area"</p> <p>(e) Delete and replace Map 6 entitled "Land Use Plan"</p> <p>(f) Delete and replace Map 9 entitled "Stormwater Management"</p> <p>(g) In Section 6.3.1, entitled "Design of Stormwater Management System" delete text from the second paragraph.</p> <p>(h) In Section 6.3.1, entitled "Design of Stormwater Management System" add new paragraph at the end of the section.</p>
17	49P2018	2018 July 23	<p>(a) In Section 4.5.1 Industrial, add text at the end of Policy 1.</p>

Amended portions of the text are printed in *italics* and the specific amending Bylaw is noted.

Persons making use of this consolidation are reminded that it has no legislative sanction, and that amendments have been embodied for ease of reference only.

The official Bylaw and all amendments thereto are available from the City Clerk and should be consulted when interpreting and applying this Bylaw.



PUBLISHING INFORMATION

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SADDLE RIDGE AREA STRUCTURE PLAN

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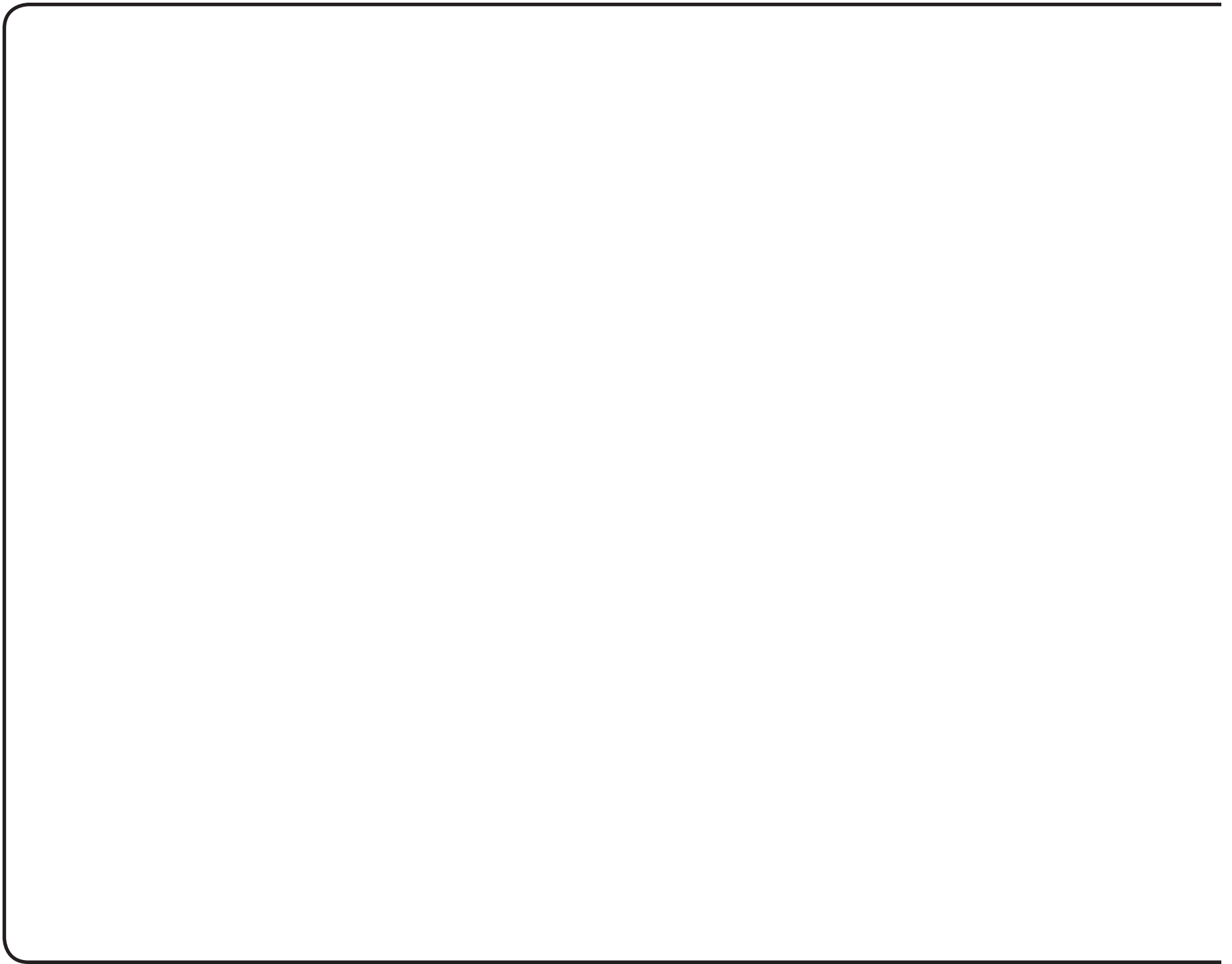
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EXECUTIVE SUMMARY

The Saddle Ridge Area Structure Plan study area encompasses 1,270 hectares (3,140 acres) of land in the northeast sector of the city. The area is located immediately north of the Falconridge and Castleridge communities, and east of the Calgary International Airport.

Most of the area (*1,013 hectares (2,504 acres)*) is designated for residential and associated uses, *including a centrally-located Town Centre (community core), a senior high school and major regional playfields. 15P97, 17P2014* The balance is set aside for employment-generating activities - an industrial district along the west side adjacent to the airport, *and a Community Activity Centre at the 88th Avenue NE LRT station. 17P2014*

The residential areas of Saddle Ridge are expected to develop in a pattern generally similar to the Falconridge/Castleridge and Properties communities to the south. Planning approval has already been granted to two subdivisions (Martindale and Taradale) to the north of 64 Avenue. Saddle Ridge will also incorporate two special features - an extension of the Northeast Light Rail Transit (LRT) line which will be integrated within the residential community, and stormwater retention lakes likely contained within public parks. These features will contribute towards a unique character for the Saddle Ridge community.

The industrial district proposed along the western edge of Saddle Ridge will evolve gradually over an extended period of time. The area presently accommodates a mixture of residential and outdoor industrial developments. The initial stage of transition, already in progress, will see an increase in the number of limited-service industrial activities. The present lack of servicing capacity precludes more intensive light industrial development and it is anticipated that services will not be extended to the area for several years.

Paragraph deleted.

18P90

The study area is situated within a sour gas field which produced gas for several decades. There are no longer any active gas wells or related pipelines in the study area.

17P2014

A. BACKGROUND AND SUPPORTING INFORMATION

1.0 INTRODUCTION

1.1 Study Area Location

The Saddle Ridge area is located in the northeast sector of the city, as shown on Map 1. The study area for this Area Structure Plan encompasses Sections 10, 11, 14 and 15, as well as the western halves of Sections 12 and 13-25-29-W4.

The study area comprises approximately 1,270 hectares (3,140 acres) bounded by the airport property and 36 Street on the west, the proposed 96 Avenue Expressway alignment on the north, the Transportation and Utility Corridor (T.U.C.) on the east and 64 Avenue and the Falconridge and Castleridge subdivisions on the south. *Sentence partially deleted.* **18P90** The Martindale and Taradale subdivisions, in which residential development has already commenced, are included in the Area Structure Plan as they will form an integral part of the Saddle Ridge communities south of 80 Avenue NE. The two country residential subdivisions north and south of 80 Avenue in the western portion of the study area are also addressed in this Plan.

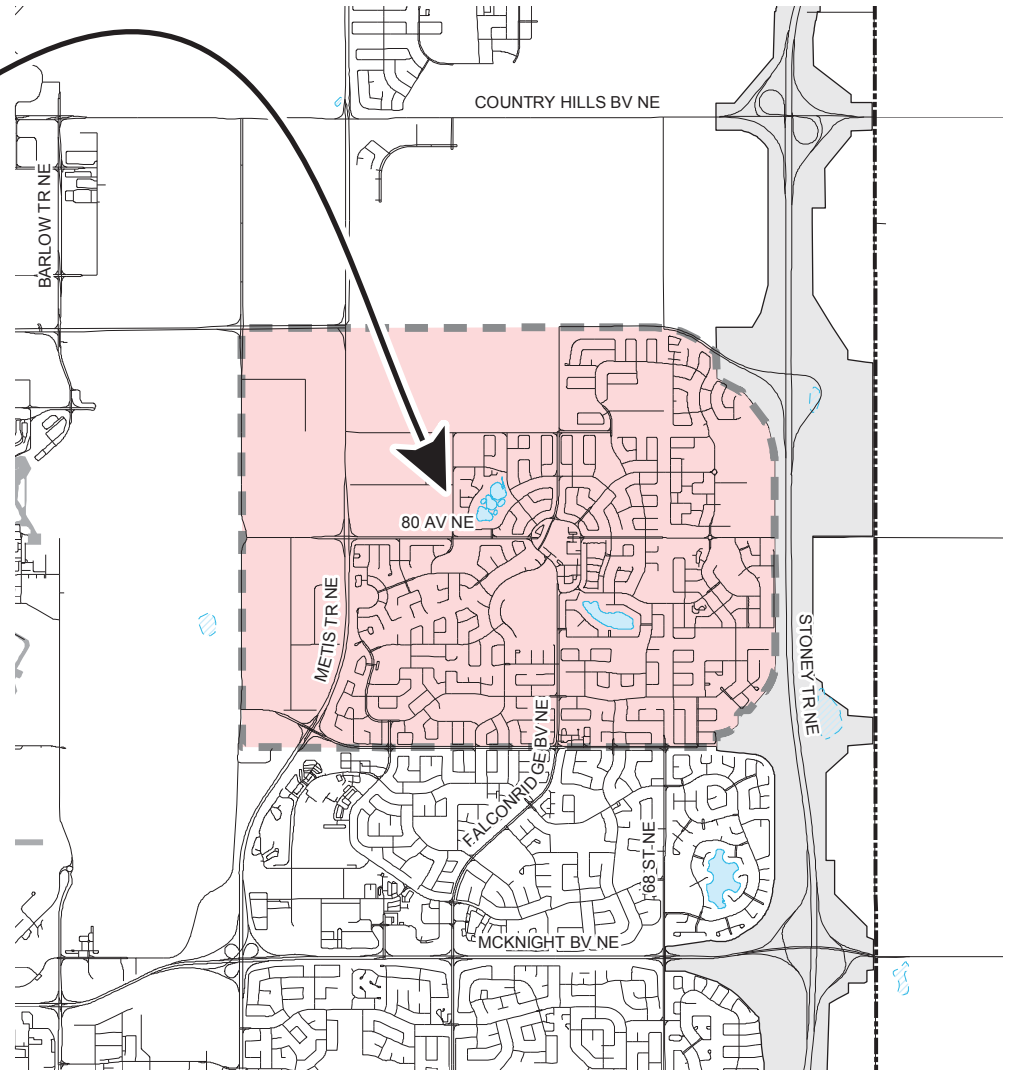
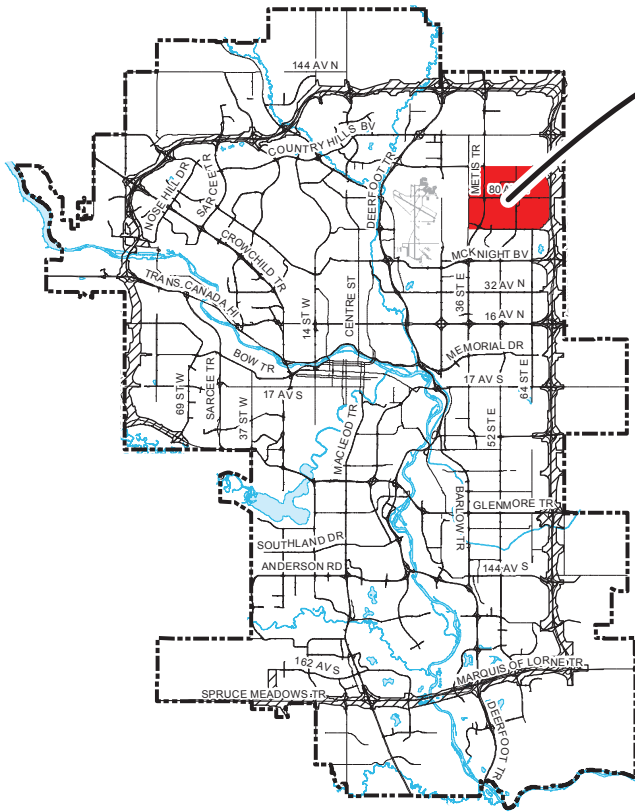
Paragraph deleted.

18P90

1.2 Background

Sections 10, 11, 14 and 15-25-29 W4M covered by this Area Structure Plan were annexed to the City in 1961. The west halves of Sections 12 and 13-25-29 W4M were annexed to the City in 1989. **18P90** The southeast quarter of Section 15 had been subdivided to allow country residential development as early as 1913. In 1964 the western half of Section 10 was subdivided, generally into five-acre parcels, for country residential use.

In 1976 City Council approved the Airport Phase 3 Design Brief. Although this document dealt primarily with the Castleridge and Falconridge areas, it also addressed the Saddle Ridge area in a very general way. The Design Brief did not establish detailed land use, road or servicing plans for the lands north of 64 Avenue, but rather placed them in an “urban reserve” category due to sour gas and servicing constraints. The lands east of 44 Street (which approximately coincides with the 30 N.E.F. contour related to the proposed new airport runway) were designated as “urban reserve future residential”, while the lands within the critical noise zone to the west of 44 Street were designated “urban reserve future industrial”.



Saddle Ridge Area Structure Plan

Map 1

Study Area Location

This map is conceptual only. No measurements of distances or areas should be taken from this map.

Approved: 3P84
Amended: 17P2014

The lands which are presently being developed as the Martindale and Taradale subdivisions to the north of 64 Avenue were approved at the policy level for development through an amendment to the Design Brief, which was approved by City Council in 1977.

1.3 Study Area Context

Development of the Saddle Ridge area will constitute a logical northerly extension of the residential development pattern already established in the Properties, Castleridge/ Falconridge and Martindale/ Taradale areas, and of the industrial areas to the south of the airport. The location of Saddle Ridge in relation to these other developments is shown in Map 2.

The Northridge area, which was annexed to the City in 1989, lies immediately to the north of Saddle Ridge. Development in this area will likely continue the development pattern established in Saddle Ridge, with residential development to the east of the Métis Trail NE and industrial development closer to the airport on the west. **18P90 & 29P2013**

The study area is situated within a sour gas field which produced gas for several decades. There are no longer any active gas wells or related pipelines in the study area. **17P2014**

2.0 STUDY AREA CHARACTERISTICS

2.1 Natural Features

2.1.1 Topography, Soils and Drainage

Saddle Ridge is essentially flat and featureless. There is an overall gradual slope of the land from the northeast to the southwest resulting in an elevation change of approximately 18 metres (60 feet). Within this basic land form is a pattern of low, rolling rises and depressions. The long, smooth slopes will require extensive grading but will pose no undue constraint to development.

The soils are deep loam over silt and clay. Drainage is discontinuous, and varies from well-drained hilltops and low ridges to poorly-drained clay-lined depressions. Many poorly drained depressions are flooded in the spring season and provide high quality marsh habitats. The relatively flat nature of the area will create some difficulty in establishing satisfactory stormwater drainage.

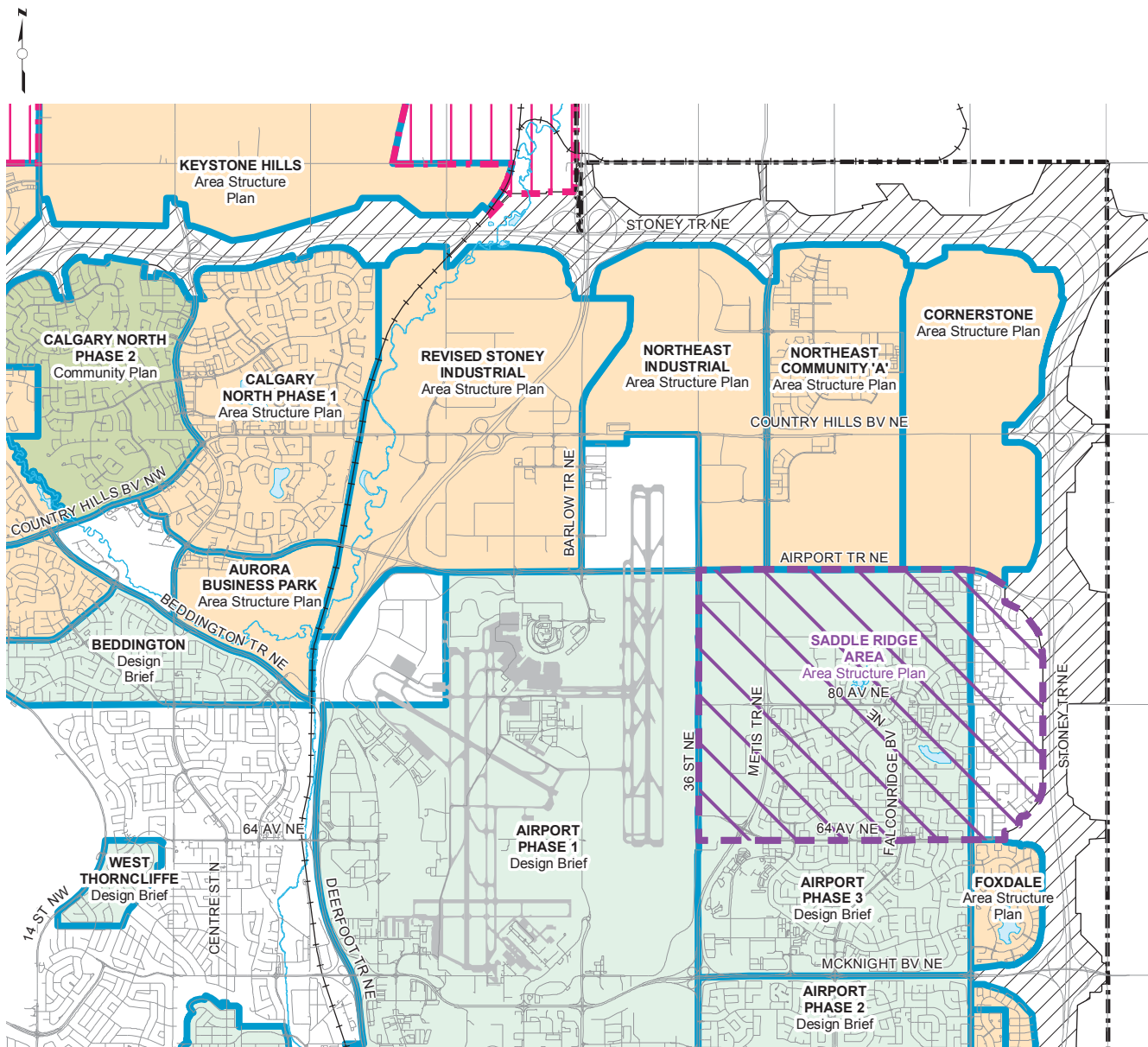
2.1.2 Views

The average elevation of the Saddle Ridge area is substantially higher than the adjacent lands to the west, resulting in excellent views of the downtown and northern portions of the city and the mountains.

Saddle Ridge Area Structure Plan

Map 2

Study Area Context

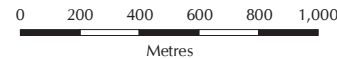


Legend

- City Limits
- Transportation/Utility Corridor
- Saddle Ridge Area Structure Plan Area
- Plan In Preparation
- Area Structure Plan (Statutory)
- Community Plan (Non Statutory)
- Design Brief (Non Statutory)

Approved: 3P84
Amended: 3P2016

This map is conceptual only. No measurements of distances or areas should be taken from this map.



2.1.3 Vegetation and Wildlife

Natural areas associated with the scattered marsh wetlands with significant natural vegetation **7P93**, pond, tree and shrub communities provide good quality habitat for hawks, waterfowl and shorebirds. Coyotes, badgers, red foxes and deer have also been observed in the area.

2.2 Martindale and Taradale **17P2014**

Outline plans and land use redesignations were approved in September, 1981 and June, 1982, respectively, for the Martindale and Taradale subdivisions as shown in Map 3. These areas are presently under development, and will accommodate primarily single-family detached homes, with an average density of up to 8.5 units per acre.

Martindale, as presently approved, has a population capacity of approximately 5,000. Taradale, with its current development area of approximately 32 hectares (80 acres), is expected to accommodate about 1,500 people. Each of these residential developments will eventually become part of larger communities within the Saddle Ridge area as development occurs on the adjacent lands to the north, in accordance with the land use plan (Map 6). **7P93**

2.3 Natural Gas Field **17P2014**

The study area is situated within a sour gas field which produced gas for several decades. The hydrogen sulfide content of the gas was less than one percent by volume. In total, 4 wells were drilled within the study area and all have since been abandoned (see Table 1). The pipelines that serviced these wells have also been abandoned. Most of the pipelines were abandoned in place, however, in some areas of the study area portions of the abandoned pipelines were removed to enable site development. **17P2014**

The implications of this sour gas for urban development are discussed in Section 3.7.

Well Location	Licence Number	Licensee	Fluid	Status
100/10-10-025-29W4/0	0032182	Talisman Energy Inc	Gas	Abandoned (1985)
100/11-11-025-29W4/0	0014465	Nexen Inc.	Gas	Abandoned (2006)
100/11-13-025-29W4/0	0016188	Nexen Inc.	Water Disposal	Abandoned (2005)
100/04-15-025-29W4/0	0062123	Nexen Inc.	Gas	Abandoned (2012)

17P2014

Deleted Map 3

17P2014

2.4 Adjacent Land Uses 17P2014

2.4.1 Calgary International Airport 17P2014

The proximity of Saddle Ridge to the Calgary International Airport has implications for land use in the study area. The effects of the airport noise and height restrictions are discussed in Section 3.5.

Paragraph deleted. **36P97**

The Calgary Airport Authority is currently drafting a master plan update for the airport, as well as a Calgary area air traffic study. These documents are examining the needs and opportunities for expansion of present airport facilities, and are considering alternative methods to accommodate air traffic volume increases. The four sections of land west of 36 Street and north of McKnight Boulevard (i.e., Sections 4, 9, 16 and 21) have been purchased or optioned by The Calgary Airport Authority to accommodate the new parallel runway. The runway project will be completed in 2014. **36P97, 17P2014**

2.5.2 Deleted 18P90, 17P2014

3.0 POLICY CONTEXT

3.1 Calgary Regional Plan

As a prerequisite to urban development, lands within the City of Calgary must be classified as “high density” in the Calgary Regional Plan. The Saddle Ridge lands have been classified as “high density” since 1965, and therefore no amendment to the Regional Plan is required in order for further planning and development to proceed.

3.2 Calgary General Municipal Plan

The lands in the Saddle Ridge area east of the proposed 36 Street Expressway (*Métis Trail NE*) alignment (presently 44 Street NE) are designated in Figure 2.1.1 of the Calgary General Municipal Plan (Amendment No. 10) as being suitable for general urban development, while the lands between the proposed expressway alignment and the airport are designated for industrial uses. Furthermore, the Saddle Ridge area is identified in Table 4.1.2 as being suitable for preparation of an area structure plan.

29P2013

3.3 Airport Phase 3 Design Brief

In September, 1976 City Council approved the Airport Phase 3 Design Brief. Since that time several amendments to the Design Brief have been approved.

Due to development constraints imposed by sour gas facilities, together with limitations on municipal servicing capacities, the Airport Phase 3 Design Brief established specific planning policies for only those

lands south of 64 Avenue NE. The Saddle Ridge area, to the north of 64 Avenue, was designated as “future industrial” west of the proposed 36 Street Expressway, and “future residential” east of the Expressway.

In 1977, 1981 and 1982 City Council approved amendments to the Design Brief which permitted the development north of 64 Avenue of the first phases of the Martindale and Taradale subdivisions. These amendments and subsequent outline plan approvals established the road pattern, joint use site and commercial site locations in the approved portions of Martindale and Taradale.

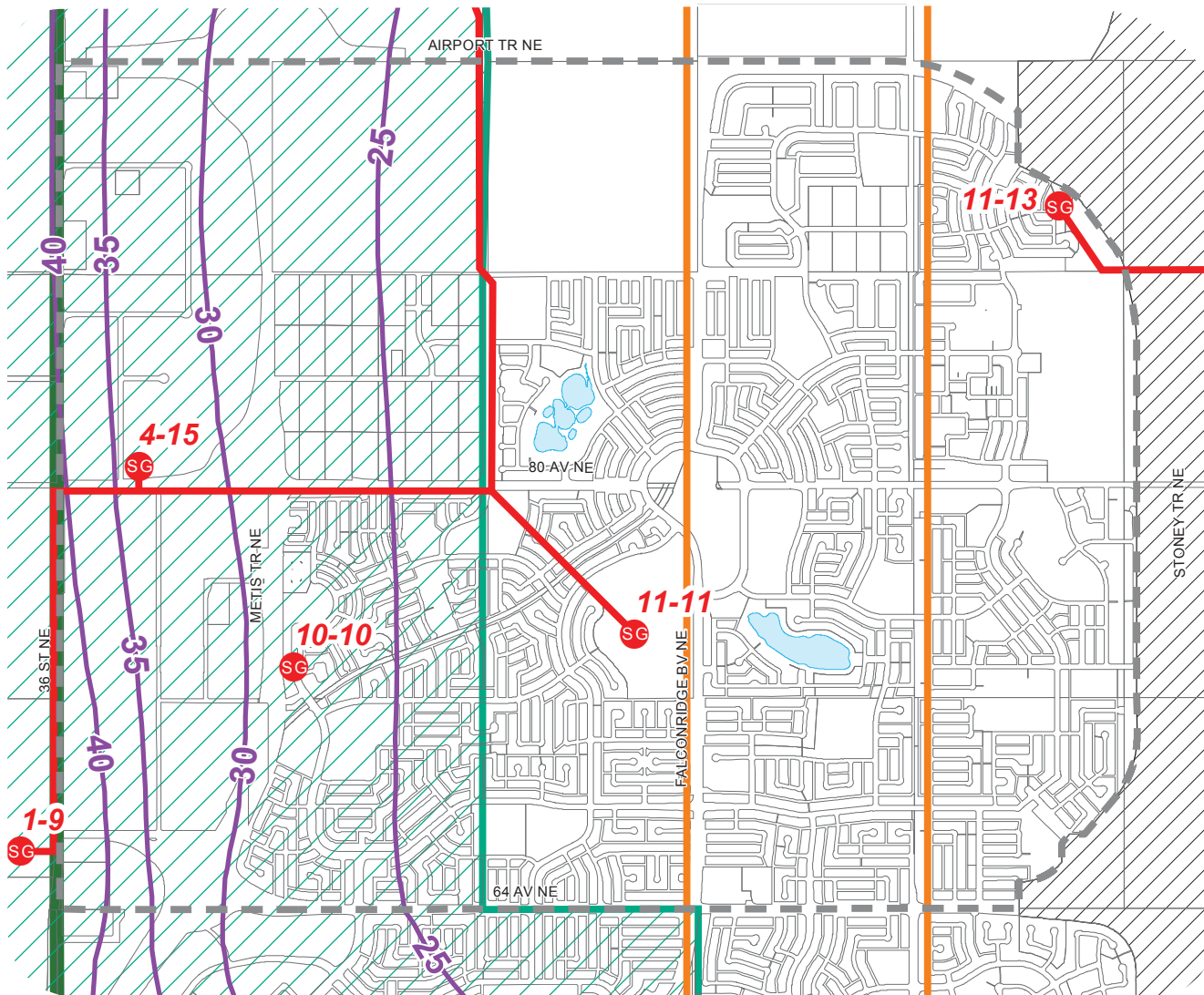
The Design Brief established a policy that no industrial development would be allowed in the country residential area bounded by 36 Street, 80 Avenue, 44 Street and 64 Avenue before 1985. The City was also to establish a fund to purchase at market value any residential properties from those owners wishing to sell. These policies were designed to protect the residential development in the area from premature and uncontrolled transition to industrial development.

Upon adoption by Council, the Saddle Ridge Area Structure Plan will supersede the amended Airport 3 Design Brief as the principal planning document addressing development in Saddle Ridge. Those policies contained within the amended Airport Phase 3 Design Brief which relate to development in Martindale and Taradale have either been incorporated into, or are compatible with, this Area Structure Plan. The Airport 3 Design Brief as amended will remain as the effective City Council policy with regard to the Falconridge and Castleridge areas.

Saddle Ridge Area Structure Plan

Map 4

Development Constraint Area

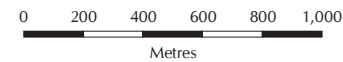


Legend

- City Limits
- Study Area Boundary
- Transportation/ Utility Corridor
- Airport Property Boundary
- Airport Vicinity Protection Area
- N.E.F. Contour Lines
- Abandoned Sour Gas Well
- Abandoned Sour Gas Pipelines
- High Pressure Sweet Gas Pipelines

Approved: 3P84
Amended: 17P2014

This map is conceptual only. No measurements of distances or areas should be taken from this map.



3.4 Restricted Development Area/ Transportation and Utility Corridor

Paragraph deleted. **18P90**

The western boundary of the Transportation and Utility Corridor has been refined, as shown on the revised Map 6. **18P90** The proposed East Freeway will likely be located close to the western edge of the T.U.C. and will be separated from future residential development by a buffer strip and land reserved for local services and utilities. Access to the corridor for servicing purposes must be provided through adjacent development.

3.5 Airport Vicinity Special Regulations

3.5.1 Calgary International Airport Vicinity Protection Area (A.V.P.A.) Regulations

These provincial regulations establish the noise exposure forecast (N.E.F.) contours, and the types of land uses which are permissible within the various noise zones. New residential development is restricted to areas outside the 30 N.E.F. contour, as shown in Map 4. The N.E.F. contours established by Transport Canada for the Calgary International Airport vicinity assume full operation of the proposed new runway immediately west of 36 Street NE.

The regulations also establish zones within which certain types of development require *The Calgary Airport Authority's* approval (Map 4). Developments affected by these regulations include those exceeding specified heights and those which may interfere with electronic apparatus. **17P2014**

Airport Zoning Regulations also apply to the area, as shown in Map 4. The developments West of 52 Street lie within The Calgary International Airport's outer surface limits. Within the outer surface, no structure should exceed 1121.95m ASL. **17P2014**

Any development in the western part of Saddle Ridge will be subject to these A.V.P.A. and airport zoning regulations. *Sentence deleted.* **36P97, 17P2014**

3.5.2 Calgary International Airport Area Zoning Regulations

This federal statute prescribes height restrictions along the various approaches to *The Calgary International Airport*. No building or object is permitted to exceed the height limitations without *The Calgary Airport Authority's* approval. However, as the allowable development heights are in excess of those normally approved in residential or general industrial areas it is unlikely that any proposed development in Saddle Ridge would be constrained by the federal regulations.

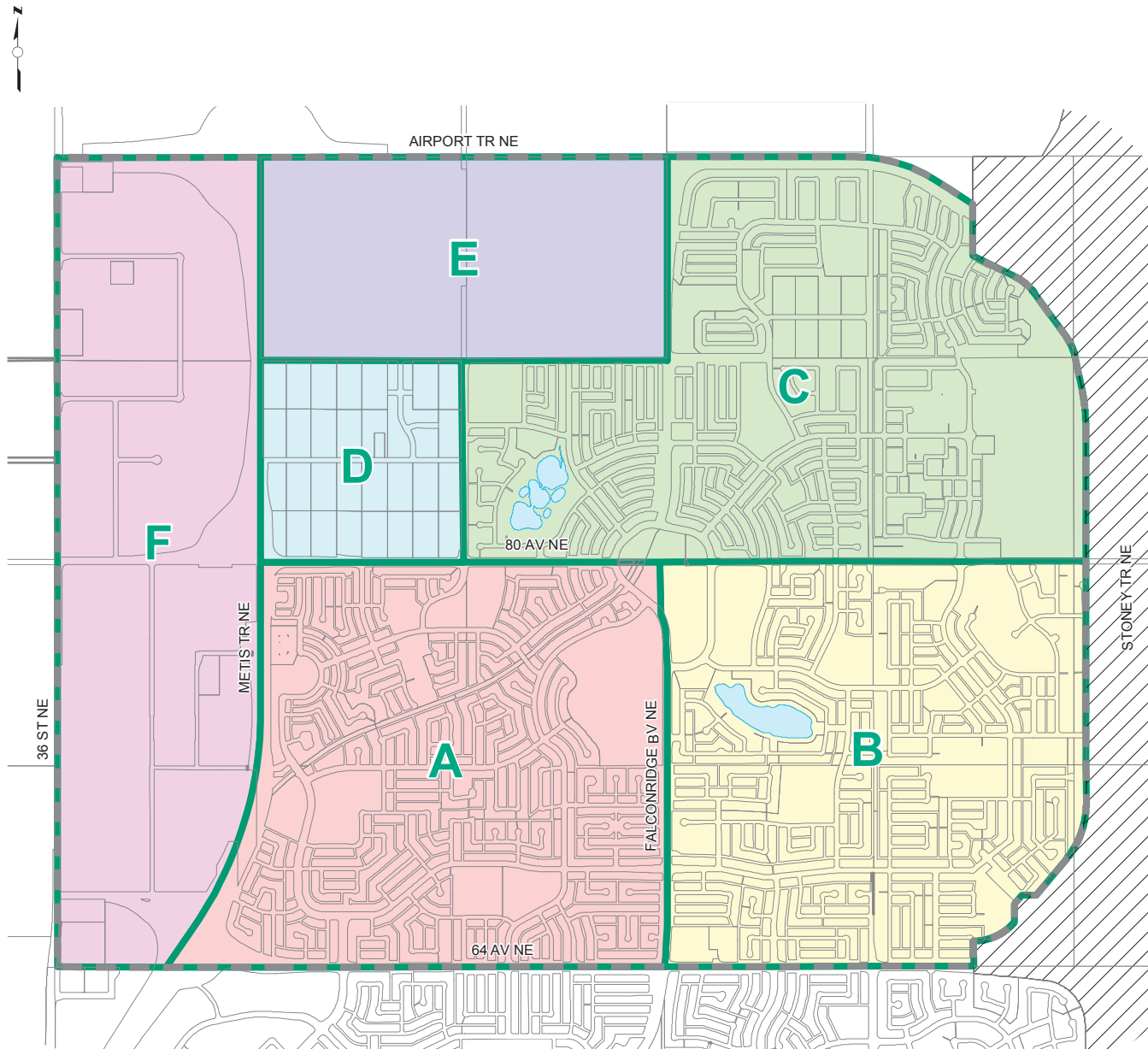
Bylaw 17P2014

Applications for development permits in the Airport vicinity are subject to review and approval by the appropriate provincial and federal government agencies.

Saddle Ridge Area Structure Plan

Map 5

Development Cells



Legend

- City Limits
- Study Area Boundary
- Transportation/ Utility Corridor
- Development Cells

3.6 **Calgary Area Aviation Master Plan**

The Master Plan has addressed the following elements of relevance to the Saddle Ridge area: **17P2014**

- i) *Construction of the proposed new runway will be completed in 2014.* **36P97, 17P2014**
- ii) *Construction of the 96 Avenue Expressway, with an interchange for airport access (as per the City of Calgary Transportation System Bylaw); and*
- iii) *Light aviation-related uses (i.e. hangars, maintenance depots) to be located along the west side of 36 Street NE, subsequent to construction of the proposed runway.* **18P90**

Sentence deleted. **36P97**

3.7 **Sour Gas Facility Setbacks**

The Alberta Energy Regulator (AER) has defined appropriate development setback zones around the sour gas wells and pipelines. Historically, the AER recommended a 100 metre setback from active wells and a 30 metre setback from pipelines until the reserves are depleted. In addition, City Council was also concerned about potential nuisance impacts and established appropriate development setbacks of 300 metres and 30 metres from gas wells and pipelines. No buildings, roads (except crossings), parks or other public facilities were allowed within these setback areas for active sour gas wells and/or pipelines. Once the well and/or pipeline was abandoned, the development setback was reduced accordingly. Areas around three of the abandoned wells have been developed. The last active well was abandoned in 2012.

Any development in the vicinity of an abandoned well will need to conform with the requirements outlined in AER Directive 079 and any other requirements established by AER: Surface Development in Proximity to Abandoned Wells. The development setback from an abandoned-in-place pipeline is the right of way established for the specific pipeline. **17P2014**

3.7.1 Abandoned Wells and Pipelines

- (1) *All development around an abandoned well site must comply with AER directives and regulations and any other applicable laws or regulations.*
- (2) *In conjunction with an Outline Plan/Land Use or Development Permit application for any parcel containing an abandoned well, the applicant shall provide*
 - (a) *surveyed locations of abandoned wells and pipelines and confirmation from the AER of any setbacks;*
 - (b) *a Phase I Environmental Site Assessment specific to the abandoned well;*
 - (c) *a Phase II Environmental Site Assessment specific to the abandoned well as deemed appropriate by the Approving Authority;*
 - (d) *an evaluation of the integrity of the well abandonment; and*
 - (e) *a reclamation certificate for the well, if possible.*
- (3) *The City shall not provide credit for MR located within AER abandoned well setbacks.*
- (4) *Pending the results of a Risk Assessment, abandoned wells may be incorporated into MR areas at the discretion of the Approving Authority.*
- (5) *Roads shall not be located over abandoned wells.* **17P2014**

3.7.2 Pipelines

- (1) *Lands containing pipeline rights-of-way should have separate title and not be granted a residential land use designation. All land uses on pipeline rights of way shall have regard for the safe, ongoing operation of these facilities.*
- (2) *The City will not grant credit for MR land containing pipeline rights-of-way.*
- (3) *Crossing and access agreements must be in place prior to tentative plan approval over lands encumbered by a pipeline right-of-way.*
- (4) *Pathways and other recreational uses may be permitted on pipeline rights-of-way at the discretion of the Approving Authority.* **17P2014**

3.8 Northeast Transportation Studies

The City Transportation Department undertook three studies which relate to land use planning in the Saddle Ridge area. These studies are the Northeast Transportation Study (N.E.T.S.), the 36 Street Expressway Functional Study and the Northeast LRT Extension Functional Study. Upon approval by City Council, the results of the N.E.T.S. were incorporated by amendment into the City's Transportation Bylaw. The findings of these studies have been incorporated into this Area Structure Plan.

17P2014

B. THE PLAN

4.0 LAND USE PLAN

4.1 General Concept

The conceptual land use plan for Saddle Ridge is presented in Map 6.

The area is subdivided into six development cells, labelled A to F (see also Map 5). Five of these cells (A, B, C, D, and E) are characterized predominantly by residential and ancillary land uses, and could accommodate a total population in the order of 58,000. **17P2014** Cells C and D may be considered as a single residential development cell for planning purposes (e.g. reserve dedication, stormwater management, community boundaries). **15P97** A Town Centre focused on retail development and an LRT station will be located within a loop roadway circle joining Falconridge Boulevard NE (60 Street) and 80 Avenue NE. The Town Centre will be approximately 12 ha (30 ac) in size. Any substantial reduction below this size will require an amendment to this Plan. To the southwest in Cell A, but within walking distance of this Centre, will be a public senior high school and major regional playfields. **1597** Stormwater management scheme for Saddle Ridge will include a dry pond storage concept. These dry ponds may only be located on reserve land if the communities' needs for open space or other reserve purposes are first met. **7P93**

The area to the west of the *Métis Trail NE* (Cell F) is designated for industrial uses, with limited-serviced industrial activities likely to predominate for many years to come. *There will be a Community Activity Centre at the future 88th Avenue NE LRT Station containing a mix of housing, employment, and commercial uses.*

29P2013, 17P2014

Initially, primary access to the area will be via 36 Street, 60 Street and 80 Avenue. However, these routes will ultimately be supplemented by construction of the *Métis Trail NE*, the 96 Avenue Expressway and the East Freeway. **29P2013**

The proposed extension of the Northeast LRT line from McKnight Boulevard will be integrated into the residential community to the west of 60 Street. *There will be one LRT station on the west side of Cell A with bus connections on the loop collector. Another LRT Station will be located in the western portion of the Town Centre as the LRT alignment curves north to join Falconridge Boulevard NE (60 Street NE).* **15P97** The most northerly station, located between 88 Avenue and 96 Avenue, will serve the *Community Activity Centre* in the northern part of the study area. **17P2014**

4.2 Residential

A total of approximately 996 hectares (2,504 acres) of land in the Saddle Ridge study area is designated on Map 6 for residential and associated land uses (including joint use sites, stormwater lakes, parks, roads, local commercial and institutional uses serving the community). *Sentence deleted.* **18P90, 17P2014**

The minimum required residential density to be achieved within the community shall be 17.3 units per gross developable hectare (7.0 units per gross developable acre).

The maximum residential density allowed within the community shall be determined based upon an analysis of the capacity of the infrastructure and facilities needed to serve the community. **18P2007**

It is important that area developers and planning authorities strive to ensure a variety of housing types and lot sizes in Saddle Ridge. As there are a lack of topographic features in the area new development should strive to create a positive character through landscaping, design and architecture, community facilities and other techniques.

Traditionally a number of the northeast residential communities have served a significant portion of the starter home market. This results in a higher proportion of children than in many other parts of the city. This fact should be recognized in the priority given to the construction of community facilities and the early provision of other services to serve youth. **15P97**

Any multi-family residential development proposed in Saddle Ridge should be encouraged to locate either in proximity to LRT stations or on major roads or collector streets, and as close as possible to schools, parks and community recreation facilities.

The Plan assumes the existing country residential subdivision north of 80 Avenue in Cell D will ultimately be redeveloped as a residential area. Residential development that is innovative and embodies the Principles of Sustainable Communities as adopted by Council and amended from time to time, including the use of green infrastructure and building techniques, is encouraged.

Higher densities and mixed use development are strongly encouraged for the sites east of the Cell D Neighbourhood Activity Centre as further described in section 4.8 in Cell D towards the Joint Use Site, as well as to the south and southeast. These adjacent lands should be developed in a manner that is compatible with and forms a natural continuation of the Neighbourhood Activity Centre.

28P2007, 20P2011, 17P2014

The lands approved for development in Martindale and Taradale are included in this Area Structure Plan because they will eventually constitute part of the community structure of the Saddle Ridge area. However, planning guidelines established in the Airport Phase 3 Design Brief for these areas remain in effect. Residential development in the northern portions of Cells A and B shall follow the patterns of subdivision established in Martindale and Taradale. *Paragraph deleted.* **18P90**

4.2.1 Cell E Residential Area

- (1) *Cell E must be designed as two neighbourhoods containing a mix of housing types, an interconnected road pattern, parks, schools, community services, and green infrastructure, with each neighbourhood organized around a focal point such as an Activity Centre or amenity space.*
- (2) *Neighbourhoods should range in size between 40 and 75 hectares (99 and 185 acres), including the Residential Area and the Activity Centre.*
- (3) *A neighbourhood should provide a distinct identity for its residents, created through the use of natural features, public parks, gathering places, streetscape design, distinctive buildings, landmarks and public art.*
- (4) *A minimum of 30% of the housing units within each neighbourhood shall be non-single detached housing units.*
- (5) *A minimum average residential density of 20 units per hectare (8 units per acre) is required in the Residential Area in Cell E within each neighbourhood.*
- (6) *Connectivity and mobility throughout each neighbourhood will be facilitated by a block-based road network comprised of walkable streets fronted by street-oriented development.*
- (7) *P-loops, culs-de-sac and other single-access street patterns should be avoided wherever practical. In cases where this is deemed impractical by the Approving Authority, safe and attractive pedestrian and bicycle connections shall be provided to link streets.*
- (8) *An Outline Plan/Land Use Amendment application shall provide*
 - (a) *a concept plan for one or more complete neighbourhoods, with defined boundaries between each neighbourhood; and*
 - (b) *a concept plan showing the boundaries of the Activity Centres and how they connect with surrounding neighbourhood areas.*
- (9) *Multi-residential development should be on sites integrated with other types of housing, preferably conforming to the block pattern. Development should sensitively integrate and transition to adjacent lower density development. The design of multi-residential development should provide articulation and varying colours and materials.*

17P2014

4.2.2 Home Occupations

17P2014

The large size of the parcels in the acreage residential area and the I-4 Limited Service area (Cell F south of 80 Avenue NE) have traditionally attracted a number of uses requiring large areas for outdoor storage such as landscaping services and trucking operations.

Such uses are controlled by the Land Use Bylaw but it is appropriate to enunciate a policy protecting existing housing from home occupations. New home occupations in the residential areas should only be approved for limited terms, not include extensive outdoor storage, not include onsite advertising and the operation of the business should not be visible or detectable from outside the site. Other City and Provincial regulations, particularly those relating to the use and outdoor parking of heavy vehicles, should also be respected and enforced. **15P97**

Notwithstanding the above, Live/Work units shall be encouraged where appropriate within the Neighbourhood Activity Centres in accordance with the Land Use Bylaw. **28P2007, 20P11, 17P2014**

4.2.3 Cell D Residential Area 17P2014, 3P2016
deleted **3P2016**

4.2.3.1 Composition of the Cell D Neighbourhood 3P2016

Cell D shall be designed as an integrated neighbourhood containing low to medium density residential development including a mix of housing types, a Neighbourhood Activity Centre (NAC), an interconnected grid-based street pattern, parks, and green infrastructure. Outside of the NAC area, the predominant land use should be residential. In addition, complementary Neighbourhood scale institutional and cultural facilities, or complementary Neighbourhood scale commercial and employment uses may be allowed where deemed appropriate by the Approving Authority.

Priority should be given to located commercial and employment uses within the NAC.

Multi-residential and neighbourhood scale commercial and employment uses and developments (outside of the NAC area) should not compromise the viability of development of multi-residential or commercial developments within the NAC. A market study may be asked to be provided in support of an application for multi-residential or commercial developments outside of the NAC.

A minimum average residential density of 20 units per gross developable hectare (8 units per gross developable acre) is required in Cell D to an anticipated maximum of 40 units per gross developable hectare (16 units per gross developable acre). An analysis of the capacity of the infrastructure will assist in determining the appropriate density for each application.

A minimum of 30% of the housing units within Cell D shall be non-single detached housing units.

4.2.3.2 Design of the Cell D Neighbourhood 3P2016

Streetscape and Community Design:

Connectivity and mobility throughout Cell D will be facilitated by a block-based road network comprised of walkable streets fronted by street-oriented development.

P-loops, cul-de-sacs and other single-access street patterns should be avoided wherever practical. In cases where this is deemed impractical by the

Approving Authority, safe and attractive pedestrian and bicycle connections shall be provided to link streets.

The Cell D neighbourhood should provide a distinct identity for its residents, created through the protection of natural features, incorporation of public parks, gathering places, neighbourhood scale institutional uses, and use of streetscape design, distinctive buildings, landmarks, and public art.

The neighbourhood shall be organized around community focal points such as the Neighbourhood Activity Centre, park spaces, or other community amenities.

Multi-residential development should be oriented to face the public grid street network.

Multi-residential development may be considered at locations: along the collector streets, adjacent to transit stops, adjacent to parks, adjacent to institutional sites, and in proximity to the Neighbourhood Activity Centre.

Complementary Neighbourhood scale commercial and employment uses outside of the Neighbourhood Activity Centre may be considered at: community entrance locations; adjacent to transit stops, along collector streets; or at neighbourhood gathering locations.

Municipal Reserve land dedication is the preferred mechanism for provision of outstanding Municipal Reserves in Cell D. Municipal reserves should be consolidated into larger areas that can contribute to programmable park spaces and green corridors.

The size, location, programming and configuration of municipal reserve parcels shall be determined at the Outline Plan / Land Use Amendment stage.

The Outline Plan / Land Use Amendment stage will determine whether there are any wetlands within the project area that are appropriate for preservation.

Building Form and Design:

Multi-residential developments should be designed to provide elements such as:

- a. façade details and articulation through windows, doors, recesses, canopies, awnings and porches to increase the connection with the public realm and enhance the streetscape;*
- b. low shrubs and decorative fences for residential units;*
- c. a sense of entry to the site at the driveway access by planting trees and shrubs, and providing pedestrian lighting on both sides of the access;*
- d. a building height transition to adjacent lower density development;*
- e. buildings that face the street and have street-side main entries designed to draw attention to their location;*
- f. pedestrian connections to the street and area amenities;*
- g. underground parking or screening of parking areas.*

Townhouses and rowhouse buildings should be designed to front onto a public street with parking access ideally provided from a rear lane.

4.2.3.3 Cell D Implementation Policies: 3P2016

The Saddle Ridge Cell D area is a challenging redevelopment site because of the existing subdivision pattern consisting of +/- 2.02 ha (+/- 5.0 acre) parcels, the number of parcels within the area, and the technical aspects for extension of necessary servicing infrastructure into the site. Because of these considerations, and to ensure a comprehensively planned development, the following implementation policies have been developed to help guide future Outline Plan and Land Use amendment applications.

All lands within the Cell D Policy Area are required to follow the Cell D Implementation Policies included in this section.

When an Outline Plan application is required to be submitted in support of a proposed Land Use Amendment application, the application should be submitted with outline plan boundaries that extend beyond a single parcel of land, and represent a logical and comprehensive planning area.

Defining a logical and comprehensive planning area will be based on the following:

- a. The boundaries proposed include an application area that achieves an integrated land use concept in harmony with any adjacent land use approvals;*
- b. The boundaries proposed provide for the necessary extension of servicing infrastructure into the area;*
- c. The proposal provides the necessary road rights of way required to gain access to the site in accordance with the Area Structure Plan Land Use Concept;*

- d. The boundaries proposed include a development which meets the minimum density requirements;*
- e. The boundaries proposed include a concentration of required Municipal Reserves / park spaces that meet the Area Structure Plan's vision;*
- f. The boundaries follow defined features including existing or proposed roads, and / or are adjacent to approved Outline Plan boundaries.*

In instances where Outline Plan boundaries do not represent a logical and comprehensive planning area, at a minimum, a Concept Plan is required to be submitted in support of the application, for the remaining lands within the planning cell, as defined during the pre-application review process. At a minimum, the Concept Plan shall identify: a future land use concept and built form; proposed densities, servicing infrastructure extensions; municipal road extensions, and Municipal Reserve / park spaces.

Due to the existing subdivision and land ownership pattern of the Cell D lands it may not always be possible to accommodate, in the initial phase, a comprehensive street network. Developers will be required to demonstrate how access to the proposed development can be accommodated in accordance with MDP and CTP policy, where two accesses are necessary to support the proposed development. Provided new street development is contributing to the anticipated future street network, and there is a supporting technical analysis, staged development of the road network may be considered as an interim condition, which will be evaluated as part of the outline plan application review process.

4.2.4 deleted

20P2011, 27P2014, 3P2016

4.3 Joint Use Sites and Schools

The land use plan indicates general locations for joint use sites to accommodate elementary and junior high schools and community centres in Saddle Ridge. Final locations, sizes and configurations of these sites shall be determined at the outline plan stage.

The Public and Separate School Boards have established a preliminary distribution of school sites as shown conceptually in Map 6. In general terms, each of the full section cells will likely require one Public elementary school, one Public junior high school and one Separate elementary/junior high. Cell D is limited in size and will likely require only one site (Public junior high). **17P2014**

Deleted **15P97, 17P21014**

In the northeast part of Cell A, a public senior high school site is designated directly east of the proposed LRT station location and immediately north of the future east-west collector road. In order to maximize the support in terms of use of the LRT system, the senior high school, recreation centre and other public facilities must form an integrated nodal development in the immediate station area. **7P93**

4.4 Commercial

4.4.1 Town Centre

17P2014

Purpose

The Land Use Plan (Map No. 6) identifies the location of a central community core which will act as a "Town Centre" for the Saddle Ridge area. The Town Centre should be approximately 12 ha (30 ac) in size. The Centre will be surrounded by a one way modified major standard loop road. The purpose of this Centre is to:

- *Strengthen the community by creating a multi-use focus which will serve many resident needs;*
- *Enhance community identification and resident pride;*
- *Encourage increased resident use of alternatives to the automobile by facilitating LRT/bus use and supporting bicycle/pedestrian travel.*

Uses and Design

The Centre shall have the following components:

LRT station;

Park'n'Ride;

Bus connections throughout the area;

Sector level retail shopping (may also include freestanding theatres, groceries, restaurants, building supply outlets, etc.);

Medium density residential development; and

Community building including limited community facilities, e.g., outdoor skating rink, tennis courts. Area landowners, City departments and other public agencies are encouraged to strengthen the Town Centre by locating supportive uses within, or on the outside but adjacent to, the major road circle. In particular, these uses could include:

Offices;

Community buildings;

Medium density housing;

Public services; and

Retail services.

The Town Centre must include a multi-unit residential component of no less than approximately 2 ha (5 ac). Outline plans must indicate to the Subdivision Authority how this housing will be incorporated. The major commercial development will be located predominantly in the southeast quadrant of the Town Centre Area.

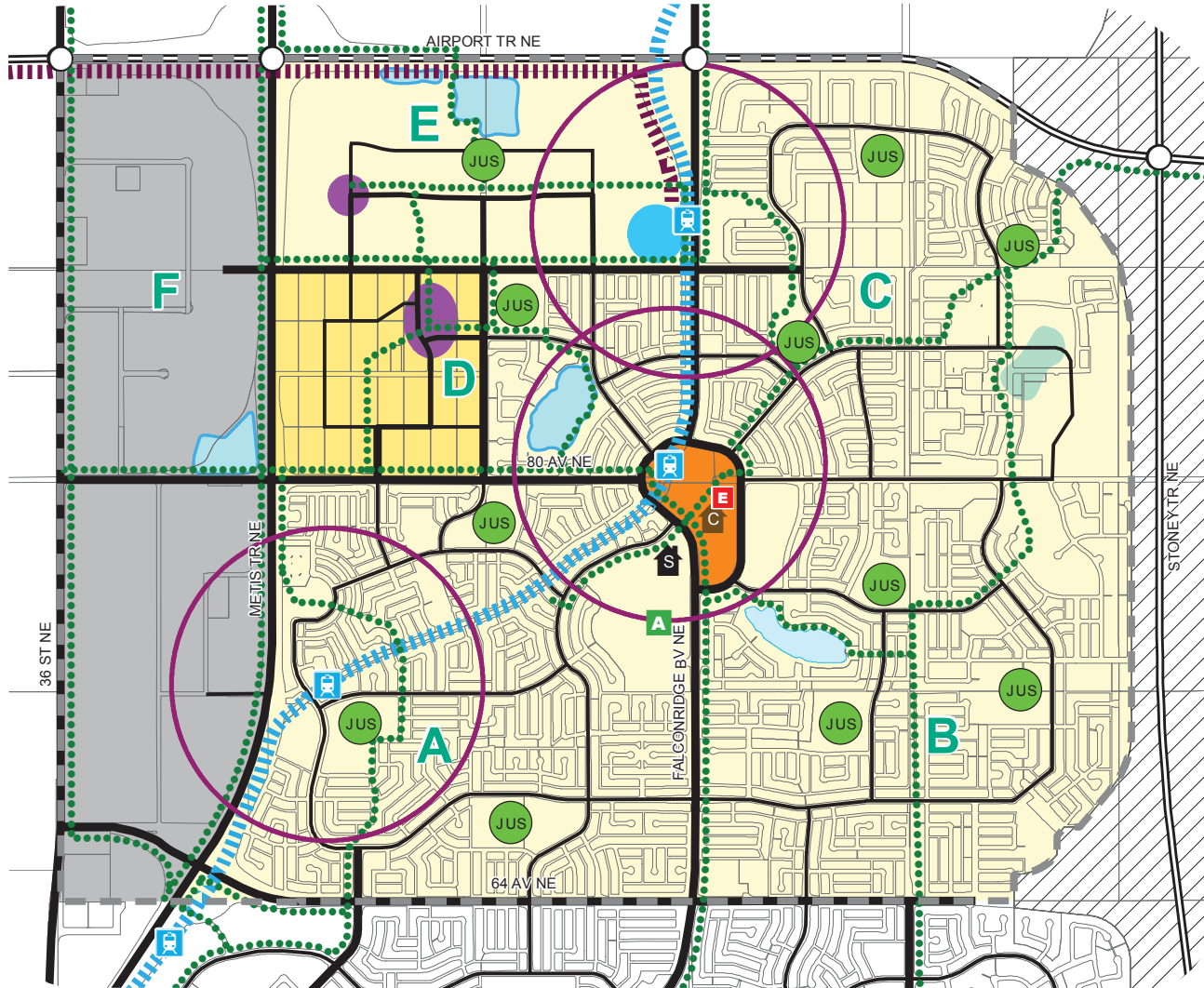
A primary objective determining the mix of uses is the desire to create a Centre where community residents can park their cars or get off a bus and undertake a number of activities by foot in relative comfort before returning home. The Centre will provide opportunities for residents to meet for pleasure and business, strengthening the social networks in the community.

The success of the Town Centre is dependent on detailed design elements as well as the more general use and location planning decisions. The design of the Centre will include the following elements:

Saddle Ridge Area Structure Plan

Map 6

Land Use Plan

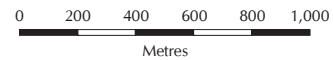


Legend

- City Limits
- Transportation/ Utility Corridor
- Study Area Boundary
- Development Cells
- Residential
- Cell D Residential
- Town Centre
- Community Activity Centre
- Neighbourhood Activity Centre
- Industrial
- Park
- Natural Area/ Wetlands
- Wetlands/ Storm Pond
- Joint Use Site
- Senior High School
- Athletic Park
- Community Centre
- Emergency Services
- Regional Pathway
- Expressway (Skeletal Road)
- Major Road (Arterial Street)
- Primary Collector Road
- Collector Road
- Interchange
- L.R.T. Alignment
- L.R.T. Station
- Airport Transit Connection (Technology TBD)
- TOD Area (600m Radius)

Approved: 3P84
Amended: 3P2016

This map is conceptual only. No measurements of distances or areas should be taken from this map.



1. *There will be a major commercial component (sector shopping) with adjacent medium density housing.*
2. *Facilities and design should encourage nearby residents use of transit, bicycles or walking and provide linkages to the regional pathway. The designs should include heated weather-protected transit waiting areas (possibly incorporated into buildings), route maps, bicycle storage facilities, and convenient walking routes leading to and within the Town Centre. Efforts should be made to design and locate walkways between uses in the Centre in such a way as to maximize weather protection.*
3. *Civic infrastructure will include an LRT station, parking and an approximately 2.5 ha (6 ac) Municipal Reserve site for a future community association building and related facilities. The community facility will serve Cells B, C, D, and E.–The site may also accommodate community facilities for the Martindale community (Cell A). As well as a building site, sufficient land will be included to allow for certain community functions, e.g., outdoor skating, daycare playspace, tennis, outdoor market/multi-purpose. **17P2014***

There may be other uses of open space (MR) within the Centre to increase its attractiveness and improve its functioning.

Concept Planning

*Planning and development of the Town Centre will be complicated by the multiple land ownerships and the City's acquisition requirements for LRT and community facilities. Due to the major importance of the Town Centre to future Saddle Ridge residents it is important that a comprehensive approach to the development be undertaken. Planning at an early stage should address, at an appropriate level of detail, the mix and location of land uses, access and movement systems. Outline Plans affecting the Town Centre must indicate these elements and must show their relationship to the overall design of the Centre. 80 Avenue NE may remain as a major road through the Town Centre lands until the road loop can be made operational at which time 80 Avenue will be closed. **15P97***

4.4.2 Neighbourhood Centres 17P2014

A 3.8 ha (9.4 ac) site on the north side of 64 Avenue NE to the east of 60 Street (Taradale - Cell B) was designated for development of a neighbourhood shopping centre in 1982.

Local shopping needs within Saddle Ridge will require retail centres in Cells A, B and C. These neighbourhood centres should be located on collector roads, and should be easily accessible to those portions of these residential cells, and of Cell D, that are most remote from the proposed town centre. Specific locations and site areas of these facilities shall be established through the outline plan process.

4.5 Major Employment Areas

4.5.1 Industrial

Cell F currently comprises an unserviced industrial area on the western boundary of the Plan area. Functionally, Cell F can be divided into two areas: the southern portion, located south of 80 Avenue NE; and, the northern portion, located north of 80 Avenue NE. The northern portion of Cell F consists of predominantly large, vacant parcels of land. The southern portion of Cell F contains mainly smaller, unserviced industrial parcels that render future subdivision, redevelopment or retrofitting of municipal services more difficult due to the inherent ownership, financial and development constraints created.

The proximity of Cell F to the airport makes it suitable for a wide range of industrial uses. Given this location, the ultimate land use for this area is considered to be a fully serviced industrial park, and unserviced industrial uses are not in keeping with the overall development intent for this Cell. Accordingly, lands north of 80 Avenue NE should only be redesignated or redeveloped for fully serviced industrial uses. Lands south of 80 Avenue NE should only be redesignated or redeveloped for fully serviced industrial uses or temporary uses, provided that these temporary uses do not compromise future development or subdivision of the site. Further subdivision of land to create unserviced or limited serviced industrial parcels should not be allowed within Cell F.

To assist with transition of Cell F to a fully serviced industrial / business park, the following policies apply:

1. Lands north of 80 Avenue NE shall only be redesignated, subdivided or developed for fully serviced industrial uses with the exception of the parcel located at 9020 - 36 Street NE which is appropriate for commercial uses. **49P2018**
2. Lands south of 80 Avenue NE shall only be redesignated, subdivided or developed for
 - (i) fully serviced industrial uses, or
 - (ii) temporary uses.
3. A temporary use, such as outside storage,
 - (i) may be allowed on a site provided that the use does not compromise the future subdivision or development of the site for fully serviced industrial uses, and
 - (ii) should
 - (A) be approved for a maximum time limit of five (5) years, with the potential for renewal upon expiration of the development permit,
 - (B) not include permanent buildings or structures, and
 - (C) be compatible and visually attractive in relation to the surrounding area.

4. *Notwithstanding 3, where an unserviced industrial use is existing on a site at the time of approval of this bylaw, new improvements or additions to the use may be allowed where it is determined that these additions will not compromise the transition of the site or the surrounding lands to a fully serviced industrial use.*

5. *Development Permit approvals within Cell F shall apply the landscaping, setback, screening and other site development standards of a fully-serviced industrial park.* **28P2006**

In order to protect remaining residents within the proposed industrial area, it is important that excessive nuisance effects generated by the industrial uses be minimized. To this end the following guidelines shall be taken into account by the Approving Authority in considering proposals for industrial development:

1. Industrial uses shall be sited as far away from dwellings on other properties as practical, and any dust or noise shall be contained within the site to the greatest extent practical.

2. Screening shall be provided in order to minimize the visual impact of industrial activities on adjacent residential properties. Such screening could include fencing, berming and/or landscaping.

3. Sites which abut major thoroughfares in the area (e.g. 36 Street NE, 80 Avenue NE, *Métis Trail NE*), **15P97, 29P2013**, shall provide landscaping and/or additional screening adjacent to the major thoroughfare.

Future industrial development adjacent to the proposed 36 Street NE Expressway shall provide a 15 metre wide landscaped buffer along the east edge of the development including suitable berming and/or planting to effectively screen the industrial development from the future Expressway (e.g. a 4 foot berm with a 6 foot wood fence on top).

Industrial development in areas adjacent to residential communities shall be visually attractive and compatible with the adjacent housing. It should strive to create an image which doesn't detract from nearby residential development. The design, character and appearance of buildings shall be compatible with the adjacent area and the buildings should be constructed of durable materials to maintain the initial quality throughout the life of the development. **15P97**

The following additional policies are established to address the current problems of street flooding and associated maintenance costs to The City and to ensure that industrial uses are handled in a sensitive manner so that there is no adverse impact on the adjacent residential development to the east.

- a) *Future industrial development on parcels fronting onto the existing unpaved roads in Cell F requiring the use of heavy trucks (e.g., vehicles over three tons) shall not be allowed until such time as these roads are paved. This will help ensure that additional damage to the unpaved roads used by heavy trucks is minimized.*

- b) *Future industrial development on site adjacent to a purely residential use in another district abutting*

the Saddle Ridge Industrial Area shall not include uses or operations involving hazardous materials.

- c) Future limited-serviced industrial development in Cell F shall include on-site stormwater retention ponds designed to the satisfaction of the City Engineer. These on-site stormwater retention ponds may be phased out after The City has established a stormwater management system to service the overall Cell F area.*
- d) Penalties will be considered against landowners/ developers discharging stormwater from their properties onto adjacent roads and other private properties.*
- e) The Engineering & Environmental Services Department will finalize, as a matter of priority, stormwater retention pond locations relative to Cell F as an integral part of the overall storm drainage system.*
- f) No industrial development will be allowed in Cell F north of 80 Avenue NE before a storm drainage system for the area south of 80 Avenue NE is in place and can be extended to service lands north of 80 Avenue.*
- g) Where feasible, the owners of currently-developed industrial parcels in Cell F shall be required to construct on-site stormwater retention ponds designed to the satisfaction of the City Engineer.*

- h) The Engineering & Environmental Services Department shall ensure that the on-site stormwater retention ponds required for future industrial development in Cell F are actually constructed when the development occurs.*
- i) If necessary and where possible, the Engineering & Environmental Services Department will improve the roadside ditches in Cell F to accommodate stormwater runoff from the streets to avoid street flooding.*
- j) Landowners/developers wishing to utilize the current servicing capacity available in The City's storm and sanitary sewer mains located with the proposed 36 Street NE Expressway right-of-way should be encouraged to do so through a Local Improvement Bylaw, particularly for future 1-2 General Light Industrial uses.*
- k) The Engineering & Environmental Services Department will continue discussions with the landowners concerning local improvements in Cell F.*
- l) In addition to the above policies, the DC Direct Control District development guidelines contained in Bylaw 16Z84, adopted by City Council on 1984 May 14, shall apply.*

15P85, 36P97

4.5.2 deleted

29P2013, 17P2014

4.6 Open Space, Parks and Recreational Facilities

The open space system in Saddle Ridge will include the various joint-use sites, parks/significant natural areas, dry ponds for stormwater storage, a regional park in Cell F and a network of pedestrian/bicycle pathways linking the above facilities.

The reserve land for open space must first and foremost be located, designed and built to meet the communities' needs for open space or other reserve purposes. The exact boundaries of such open spaces will be determined at the outline plan stage. Dry ponds for stormwater storage may only be included in reserve land in accordance with the current policy regarding the Design Guidelines for MR and MSR Sites Containing Dry Ponds. The allocation of Municipal Reserve for the area bounded by 80 Avenue NE to the south, 52 Street NE to the east, 88 Avenue NE to the north and Métis Trail to the west has been generally shown as Park on Map 6. The exact boundaries for the Municipal Reserve areas should be determined at the Outline Plan/Land Use Amendment application stage. **7P93, 20P2011**

Tot lots shall be incorporated into all residential subdivisions in accordance with City policy.

Major regional playfields of approximately 8 ha (20 ac) will be located immediately southwest of the Town Centre and adjacent to the High School. In view of this, all or a major portion of the existing Saddle Ridge community association site in Cell F, originally

considered for the playing field use, is proposed for disposal for industrial development once alternate community facilities to meet the needs of Saddle Ridge residents are provided.

The community facility site in the Town Centre will be designed to serve the needs of the residential areas in Cells B, C, D and possibly A and E, should it develop residentially. Additional community park space in the order of 8 ha (20 ac) will be located in each residential cell in conjunction with a school site. **15P97**

4.7 Pedestrian/Bicycle Pathways

The proposed regional pedestrian/bicycle pathway alignment is illustrated on Map 6. The regional pathway will interconnect the four planning cells with each other and help connect the open space system with the Town Centre. **15P97**

The specific locations of pedestrian and bicycle pathways shall be determined at the outline plan stage.

The portion of Cell E immediately east of 44 Street NE currently contains a number of small wooded areas in low lying locations. The regional pathway system, when developed, should attempt to protect these areas by either incorporating them into a linear park system or retaining them within individual developments through development control guidelines. It is expected that the lands will be acquired through the normal subdivision dedication procedures. **15P97**

4.8 Neighbourhood Activity Centre (NAC)

17P21014

4.8.1 Purpose

The purpose of the Neighbourhood Activity Centre is to provide a transit focus and meeting place for the surrounding residential area. Two Neighbourhood Activity Centres are identified on the Land Use Concept map (Map 6) and will contain transit stops, a concentration of higher density housing as well as other suitable transit-supportive uses such as local commercial uses or childcare facilities. The transit stops shall include transit shelters and amenities designed to provide a comfortable waiting environment.

17P2014

Connectivity of the Neighbourhood Activity Centre to the surrounding neighbourhood(s) will be achieved through the convergence of roads and/or pathways at or near the centre of the Neighbourhood Activity Centre. The design of the Neighbourhood Activity Centre will ensure a strong pedestrian orientation and emphasize the street as the focus of neighbourhood activity. Transit Design Guidelines will be used when reviewing the Neighbourhood Activity Centre.

4.8.2 Policies

(1) Composition of the Neighbourhood Activity Centre

- (a) *Subject to the policies of the Plan, the Neighbourhood Activity Centre shall contain*
- 17P2014**
- (i) *one or more transit stops,*
 - (ii) *a variety of multi family residential developments including street townhouses, stacked townhouses, apartments, mixed-use commercial /residential units, and/or live work units,*
 - (iii) *neighbourhood commercial uses due to its distance from the Town Centre, and*
 - (iv) *a park and / or public open space.*
- (b) *In addition to subsection (1)(a) above*
- (i) *neighbourhood scale recreational, institutional or commercial uses that are determined to be complementary and compatible may form part of the Neighbourhood Activity Centre, and*
 - (ii) *a local commercial centre shall be located within the Neighbourhood Activity Centre where determined appropriate.*

(c) *To facilitate adaptive change in the community over time, the land use designations within the Neighbourhood Activity Centre should also contain the following discretionary land uses*

(i) *community-oriented institutional, recreational, local commercial, or other uses determined to be transit-supportive (e.g. live-work uses, corner stores, drycleaners, day-care centres, restaurants, senior centres, local small offices, personal service businesses), and*

(ii) *two to six storey mixed-use development with retail at grade.*

**(2) Intensity of Neighbourhood Activity Centre
29P2013**

(a) *The Neighbourhood Activity Centre shall be comprised of a mix of land uses that reach a minimum intensity of 100 people and jobs per gross developable hectare.*

29P2013

(b) *At the Outline Plan/Land Use Amendment stage, detailed information shall be submitted addressing the boundaries, composition and density of residential development within the Neighbourhood Activity Centre.*

(3) Design of the Neighbourhood Activity Centre

(a) *The Neighbourhood Activity Centre shall be designed*

(i) *to complement the surrounding neighbourhood(s) while maintaining a distinct and identifiable character, and*
(ii) *with a strong relationship between the built form, streets and other public spaces to ensure a positive public realm.*

(b) *Any surface parking that is created should only be provided at the rear of the buildings.*

(c) *Development in the NAC shall be oriented to the street and have direct pedestrian connections from the public sidewalk to building entrances;* **17P2014**

(4) Sidewalks and Street Trees within the Neighbourhood Activity Centre

(a) *Road standards that incorporate*

(i) *sidewalks, and*

(ii) *boulevard trees*

on both sides of the road should be provided on roads located within the Neighbourhood Activity Centre.

(5) Connections to the Neighbourhood Activity Centre

(a) *The road pattern and pedestrian and bicycle routes from the surrounding neighbourhood shall converge at, or near the centre of the Neighbourhood Activity Centre providing multiple and convenient connections to the Neighbourhood Activity Centre from the surrounding neighbourhood areas.*

(b) *While allowed on a limited and select basis only, the use of cul-de-sac, p-loops and similar self-contained road patterns should be avoided in the Neighbourhood Activity Centre. 28P2007, 20P2011*

(6) The central amenity space in the NAC

- (a) *shall be designed as a multi-functional space, such as a plaza or park;*
- (b) *shall comprise a land area of 0.2 to 1.0 hectares (0.5 to 2.47 acres);*
- (c) *should be bound by streets and/or active street frontages;*
- (d) *should be located on a prominent site;*
- (e) *should be located near one or more transit stops; and*
- (f) *should have no more than 25 per cent of dwelling units adjacent to the central amenity space in the form of single detached houses. 17P2014*

4.9 Community Activity Centre (CAC)

4.9.1 Policies

(1) Location of Community Activity Centre

(a) *The CAC is located in the eastern portion of Cell E.*

(2) Size and Intensity of Community Activity Centre

(a) *The CAC should be a minimum of 4 hectares (10 acres) in size.*

(b) *No more than 70 per cent of the land use intensity in a CAC should be achieved with any one general land use type (residential, Employment, Retail, Institutional, etc.) in order to ensure an appropriate mix of uses.*

(3) Composition of the Community Activity Centre

(a) *To create a cohesive urban environment, the CAC shall include an integrated mix of residential and commercial uses along with an appropriate amount of amenity space.*

(b) Commercial development in the CAC:

(i) *should consist of Small and Medium Format Retail Uses totalling between 2,800m² (30,139 ft²) and 19,000m² (±5%) (204,514 ft²);*

(ii) *shall be integrated horizontally within the CAC and/or vertically within buildings with other uses; and*

- (iii) *should include a site for a supermarket.*
- (c) *Residential development in the CAC*
 - (i) *should include a broad range of ground-oriented and Medium- to High-Density Multi-Residential Development;*
 - (ii) *shall be integrated horizontally within the CAC and/or vertically within buildings with other uses;*
 - (iii) *should comprise no less than 30 per cent of the land use Intensity of the CAC; and*
 - (iv) *should be distributed throughout the CAC on multiple small- and medium-scale sites.*
- (d) *Amenity space(s) in the CAC:*
 - (i) *shall be designed to accommodate active and / or passive recreation;*
 - (ii) *shall comprise no less than 5 per cent of the total land area of the CAC; and*
 - (iii) *should include a defined transit area where people can conveniently transfer between bus and LRT transit routes and be located in proximity to the LRT station.*
- (e) *Other uses are also encouraged in the CAC and may include the following:*
 - (i) *Cultural, Recreational and Institutional Uses; and*
 - (ii) *Child Care Facilities and Care Facilities and other compatible uses that support age-friendly neighbourhoods, as deemed appropriate by the Approving Authority.*
- (f) *Uses including commercial, office, employment, and complementary services (e.g. child care services) within the CAC should:*
 - (i) *achieve a minimum FAR of 0.3;*
 - (ii) *be arranged in a development pattern that ensures streets and utilities are designed with the capacity for additional intensity;*
 - (iii) *be arranged in a development pattern that ensures sites and buildings are designed to enable and facilitate infilling as plan area renewal and intensification occurs. Appendix 3 provides an illustrative example that demonstrates the principle of this policy.*
- (g) *Notwithstanding the conditions of section 4.9.1 Section 3(b) (i) Small and Medium format Retail uses may exceed 19,000m² (±5%) (204,514 ft²) if the following planning and design conditions are met to the satisfaction of the Approving Authority:*

- (i) *If it can demonstrate at the outline plan stage that the scale and intensity of the CAC integrates appropriately with the scale and intensity of the adjacent uses;*
- (ii) *Employment development demonstrates significant contribution to the Plan Area as a catalyst for future residential and economic development;*
- (iii) *Employment uses consider the interface with adjacent development and ensure appropriate integration and transitions are provided; and*
- (iv) *That a Transportation Impact Assessment can demonstrate that the transportation infrastructure has the capacity to support the increased intensity of use.*

(4) Mobility Within the Community Activity Centre

- (a) *In order to provide a high degree of connectivity for pedestrians, cyclists and drivers, the design of the transportation network in and around the CAC:*
 - (i) *shall be composed of a block-based network of interconnected streets, walkways and pathways. Appendix 3 provides an illustrative example that demonstrates the principle of this policy;*

- (ii) *shall provide safe and convenient walkway and pathway access between different uses and sites throughout the CAC including clearly marked or distinguishable connections through larger surface parking lots;*
- (iii) *should restrict culs-de-sac, P-loops and other single-access street patterns from the network in and around the CAC;*
- (iv) *shall provide conveniently located, safe and accessible pedestrian and bicycle linkages that connect the LRT station with the east-west and north-south corridors, street networks, and open space areas surrounding the CAC; and*
- (v) *should provide a complete street grid network that provides both west-east and north-south pedestrian and cyclist linkages from the surrounding residential areas to the future LRT station. Design characteristics of this street should include separation of pedestrian, cyclist, and vehicle traffic, enhanced sidewalk widths, street furniture, intersection treatment, surface materials, and appropriately scaled buildings.*

- (b) *The CAC shall be served by the Primary Transit Network, with a stop located at*

a defined transit area where people can conveniently transfer between various modes of transportation. Transit facilities should be a focal point within the CAC.

- (c) *The precise locations of roads within the CAC will be determined by City Administration at the time of Outline Plan / Land Use Amendment application. Future applications may not require an amendment to the Saddle Ridge Area Structure Plan.*

(5) Transitions and Design within the Community Activity Centre

- (a) *The scale, form and character of buildings along the west edge of the CAC should be compatible with the development directly to the west of the CAC to provide an appropriate interface.*
- (b) *The public realm (including streets, parks and pathways) adjacent to and / or connecting with the CAC, including the roadway and roadside, shall be designed to accommodate the safe and convenient movement of pedestrians and cyclists.*
- (c) *Development within the CAC adjacent to the LRT station should contribute to a pedestrian-friendly public realm by situating buildings close to the station so that they frame the station and contribute to ground-level pedestrian activity.*

- (d) *Development in the CAC should contribute to a pedestrian-friendly public realm by:*

- (i) *orienting primary entrance points and street level uses to support higher levels of activity along complete streets and key pedestrian routes; and*
- (ii) *designing building façades to actively address streets and open spaces through the use of transparent glazing, windows, doors and other architectural treatments.*

(6) Applications Containing a Community Activity Centre

- (a) *An application for Outline Plan and/or Land Use Amendment that contains a CAC should include all lands contained within the CAC.*
- (b) *Alternately, a detailed Concept Plan shall be submitted for all lands within the CAC, following a process of consultation with adjacent landowners.*
- (c) *All landowners deemed by the Approving Authority to be located within the CAC are strongly encouraged to reach agreement on the overall Concept Plan prior to approval of the first Outline Plan/Land Use Amendment application within the CAC.*

4.10 Transit Station Planning Area (TSPA)

4.10.1 Polices

- (1) A TSPA includes land within 600m of any Light Rail Transit (LRT) or Bus Rapid Transit (BRT) station.**
- (2) Development within the TSPA should be in accordance with The City's Transit Oriented Development Policy Guidelines.**
- (3) A TSPA should apply to an approximate 600 metre radius and should include:**
 - (a) an LRT or BRT station;*
 - (b) a park and ride facility;*
 - (c) multi- residential development;*
 - (d) retail;*
 - (e) office uses;*
 - (f) child care facilities; and*
 - (g) transit supportive employment uses.*
- (4) Development in each TSPA shall provide:**
 - (a) a general transition of land use intensities with the highest in proximity to the transit station and lowest further from the station. Appendix 3 provides an illustrative example that demonstrates the principle of this policy; and*

- (b) streets, walkways and pathways that converge on the transit station and establish safe, direct and convenient pedestrian and cyclist connections to the wider area.*
- (5) Higher quality transit stops should be provided within the TSPA that have an attractive shelter/seating, convenient passenger drop-offs, and bicycle racks/ lockers.**

17P2014

5.0 TRANSPORTATION

5.1 Major Roadway Network

The City of Calgary is presently undertaking an update of the Northeast Transportation Study (N.E.T.S.) approved in 1976, the recommendations of which were incorporated into the Transportation System Bylaw 3M82 as well as into the Airport Phase 3 Design Brief.

The major road system as shown in Maps 6 and 7 incorporates preliminary recommendations of the N.E.T.S. update, and accommodates access requirements of the airport as put forward in the *Calgary Area Aviation Master Plan*. **18P90**

During the early stages of development, roadway access to Saddle Ridge will be provided primarily by 60 Street NE (a northerly extension of Falconridge Boulevard), as well as by the existing 36 Street and 80 Avenue. The *Métis Trail NE* will eventually become the main access route to Saddle Ridge, with 60 Street reverting to a supporting role. Present plans call for grade-separated interchanges on this roadway at McKnight Boulevard, 64 Avenue and the 96 Avenue Expressway, with at-grade intersections at 80 Avenue and 88 Avenue. **29P2013**

The 96 Avenue Expressway will interconnect the East Freeway and Deerfoot Trail, providing access to both the Saddle Ridge and Northridge areas and to the Airport. The preferred alignment will run along the north side of the Airport, as shown in Map 7. Grade-separated interchanges will be located at 60 Street and the *Métis Trail NE* as well as at a location close to the Airport terminal to be determined in conjunction with Transport Canada. **29P2013**

The East Freeway is part of the ring road proposed within the T.U.C., of which Stoney Trail to the north is another component. Ultimately this ring road will interconnect Highway No. 1 (Trans-Canada Highway) to the east and west of Calgary and with Highway No. 2 to the north and south. The East Freeway will connect with Stoney Trail approximately 3.2 kilometres (2 miles) north of Saddle Ridge.

A major road, approximately along the 88 Avenue alignment, will provide access to Cell E. The intersections at the *Métis Trail NE* and at 60 Street will be signalized. **29P2013, 17P2014**

deleted

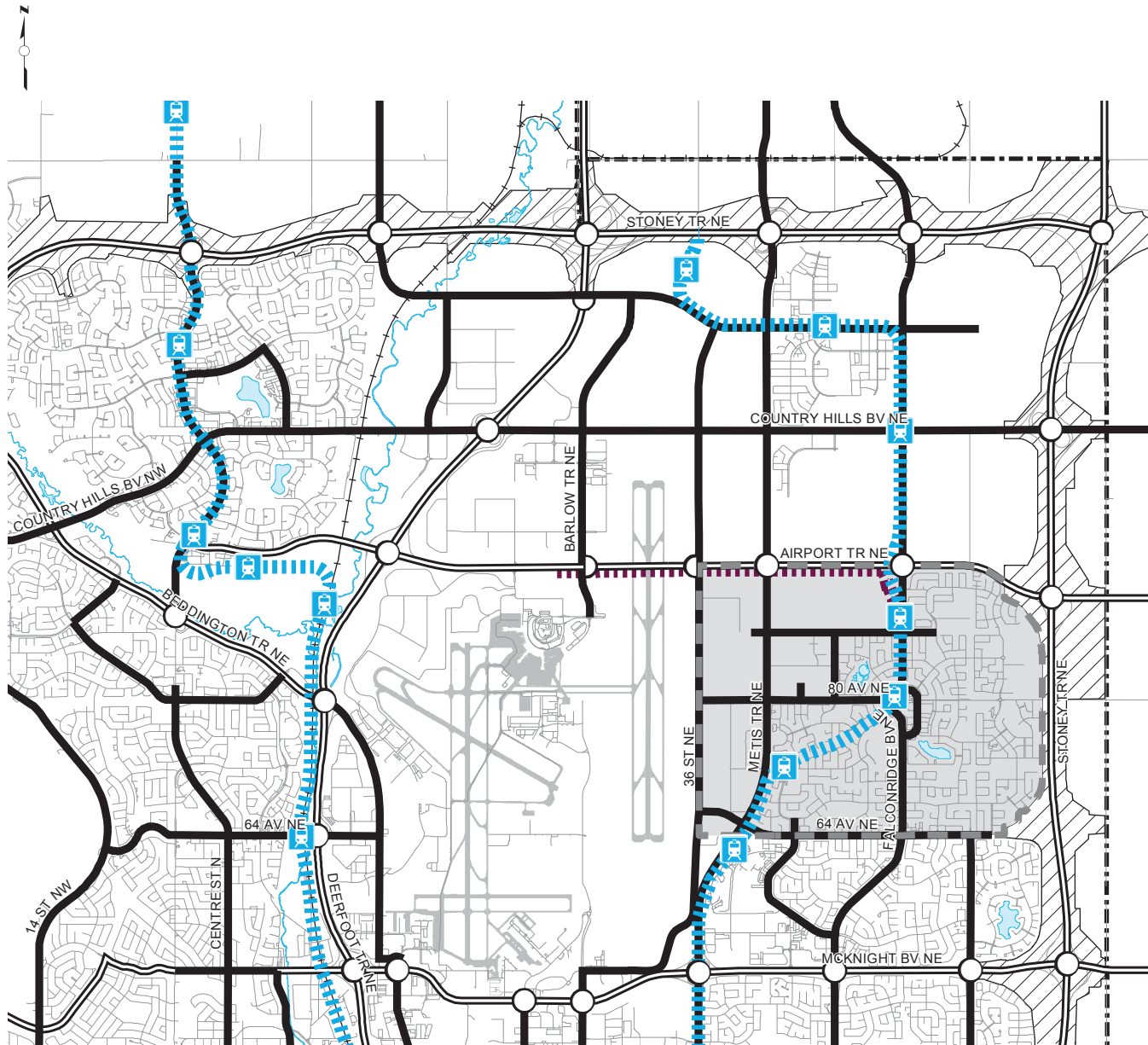
29P2013, 17P2014

Noise attenuation along major roads and expressways shall be provided in accordance with the Surface Transportation Noise Policy for the City of Calgary, as adopted by City Council in April, 1983.

Saddle Ridge Area Structure Plan

Map 7

Proposed Northeast Transportation Network

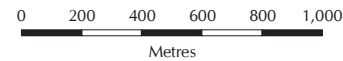


Legend

- City Limits
- Study Area
- Transportation/ Utility Corridor
- Expressway (Skeletal Road)
- Major Road (Arterial Street)
- Full Interchange
- Partial Interchange
- LRT Alignment
- LRT Station
- Airport Transit Connection (Technology TBD)

Approved: 3P84
Amended: 17P2014

This map is conceptual only. No measurements of distances or areas should be taken from this map.



5.2 Internal Circulation

Access to the local streets within the residential cells will be provided by collector roads from the major streets, Falconridge Boulevard NE (60 Street) and 80 Avenue NE as shown in Map 6. **15P97**

Paragraph deleted. **15P97**

In Cell F, the industrial area, the road alignments south of 80 Avenue will likely remain substantially the same as at present, with 40 Street being the principal access route off 80 Avenue and tying back to 36 Street to the south. Considerable upgrading (widening, paving, etc.) will be required as new development occurs. North of 80 Avenue the internal road system will be established through outline plans. Subsequent to construction of the Métis Trail NE the existing 36 Street will remain as a major road, distributing traffic to and from the industrial area, as well as serving possible future development on the Airport lands to the west.

The future road network, particularly the *Métis Trail NE* will remove or restrict local access to a number of parcels in Cell F. Applicants for outline plan or development permit approval will be advised that an alternative local road pattern will be established in the area through the 36 Street Functional Study. **29P2013**

Paragraph deleted. **18P90, 15P97**

5.3 Light Rail Transit

The Northeast Light Rail Transit (LRT) line, currently under construction to Whitefield Drive NE, is proposed ultimately to be extended further north into Saddle Ridge. The alignment for this extension is shown in Map 6.

The portion of the LRT line within Saddle Ridge, south of 80 Avenue NE represents an innovative approach as the LRT line will be located within the residential community rather than following either a major roadway or a railway alignment.

There will be three stations within Saddle Ridge. The first station which will be in the area west of Martindale will be low scale and served by feeder bus and walk-on passengers. The second station will be in the Town Centre and will have some commuter parking as well as bus and car passenger drop off areas. The third station will be located on the west side of 60 Street, north of 88 Avenue and within the Community Activity Centre. An LRT park and ride parking lot will be provided for at the station. **15P97, 18P90, 17P2014**

It is important that the Town Centre develop as an intensive mixed use community core generating and supporting transit ridership. Medium density residential development within walking distance to the LRT is basic to achieving the City's goals of increased transit use.

*The Cell E LRT station area will also provide opportunities for the creation of a higher density Community Activity Centre incorporating commercial and residential development. **15P97, 17P2014***

In order to minimize the potential barrier effect of the LRT line through the residential community, alternatives to extensive chain-link fencing of the right-of-way will be investigated. The line could also be screened visually by trees and shrubs. Pedestrian/bicycle pathways should be aligned along the LRT right-of-way wherever possible, with at-grade crossings at controlled points, including the collector road crossings.

It is unlikely that the LRT line will be built until such time as development of Saddle Ridge is well under way. Portions of the right-of-way for the LRT may be used as a bus route prior to LRT construction for interim use.

5.4 Bus Service

Local feeder bus service in Saddle Ridge will be oriented toward providing access to the LRT stations via the collector roads. A crosstown bus route will also be extended along 60 Street from the Falconridge/Castleridge and Properties communities to the south.

In Cell F, a north/south spine road of an Industrial Collector Standard along the 40 Street NE alignment is required between 64 Avenue and approximately 92 Avenue NE. Connectors running east from the spine road to the proposed 36 Street NE Expressway alignment will be required at 88 Avenue and 92 Avenue NE. Interim routing will be along 80 Avenue NE.

An industrial feeder route from one of the proposed LRT stations will provide bus service to Cell F at such time as employment in the industrial area generates sufficient demand.

*Roadways having transit service operating on them must be designed to include sidewalks along both sides. Roadways feeding the bus route must be designed with sidewalks along one side. **36P97***

Prior to extension of the LRT line into Saddle Ridge the area will likely be served by feeder buses from the LRT station south of McKnight Boulevard, as well as by the 60 Street crosstown service. The feeder services may utilize portions of the LRT right-of-way within Saddle Ridge wherever possible.

6.0 MUNICIPAL SERVICES AND UTILITIES

6.0.1 Utility Alignments

Utility rights-of-way and easements and public utility lots may be required to accommodate development or the extension of municipal utilities necessary for development.

Prior to Outline Plan/Land Use approval, a developer may be required to submit studies and information necessary to identify the location and alignment requirements for utilities within the development.

A developer may be required to provide, or enter into an agreement to provide, the utility rights-of-way or easements necessary to accommodate the extension of municipal utilities through or adjacent to a site in advance of or concurrent with development in order to allow for the servicing of a site.

A developer may be required to finance, or enter into an agreement to finance, the costs associated with the extension of municipal utilities through or adjacent to a site in advance of development in order to allow for the servicing of a site.
20P2011

6.1 Water Supply

The Saddle Ridge area lies within the North Hill pressure zone and development can be accommodated by connections to the existing distribution system followed by feedermain reinforcements as

required to minimize disturbance in built-up areas and to maintain acceptable levels of service.

A 900 mm feedermain extension north of Falconridge Boulevard NE from Taradale Drive to 80 Avenue (budgeted for the 1998) will allow for development, as far north as 96 Avenue NE. As the ASP area approaches full development, a further reinforcement feedermain may be required from McKnight Boulevard to 80 Avenue on 36 Street, heading east on 80 Avenue and tying into the proposed 900 mm on Falconridge Boulevard.

The ultimate water supply plan for northeast Calgary requires further extensions of the feedermain north on Falconridge Boulevard to 112 Avenue NE and west on 112 Avenue NE connecting to the existing Beddington Reservoir just west of 4 Street NW.
15P97

A 900mm feedermain on Falconridge Boulevard NE has been built up to 92 Avenue NE and provides the main water supply for the area. Cell D is within North Hill pressure zone and will be serviced by various extensions of the existing distribution mains along 52 Street NE and 80 Avenue NE.
20P2011

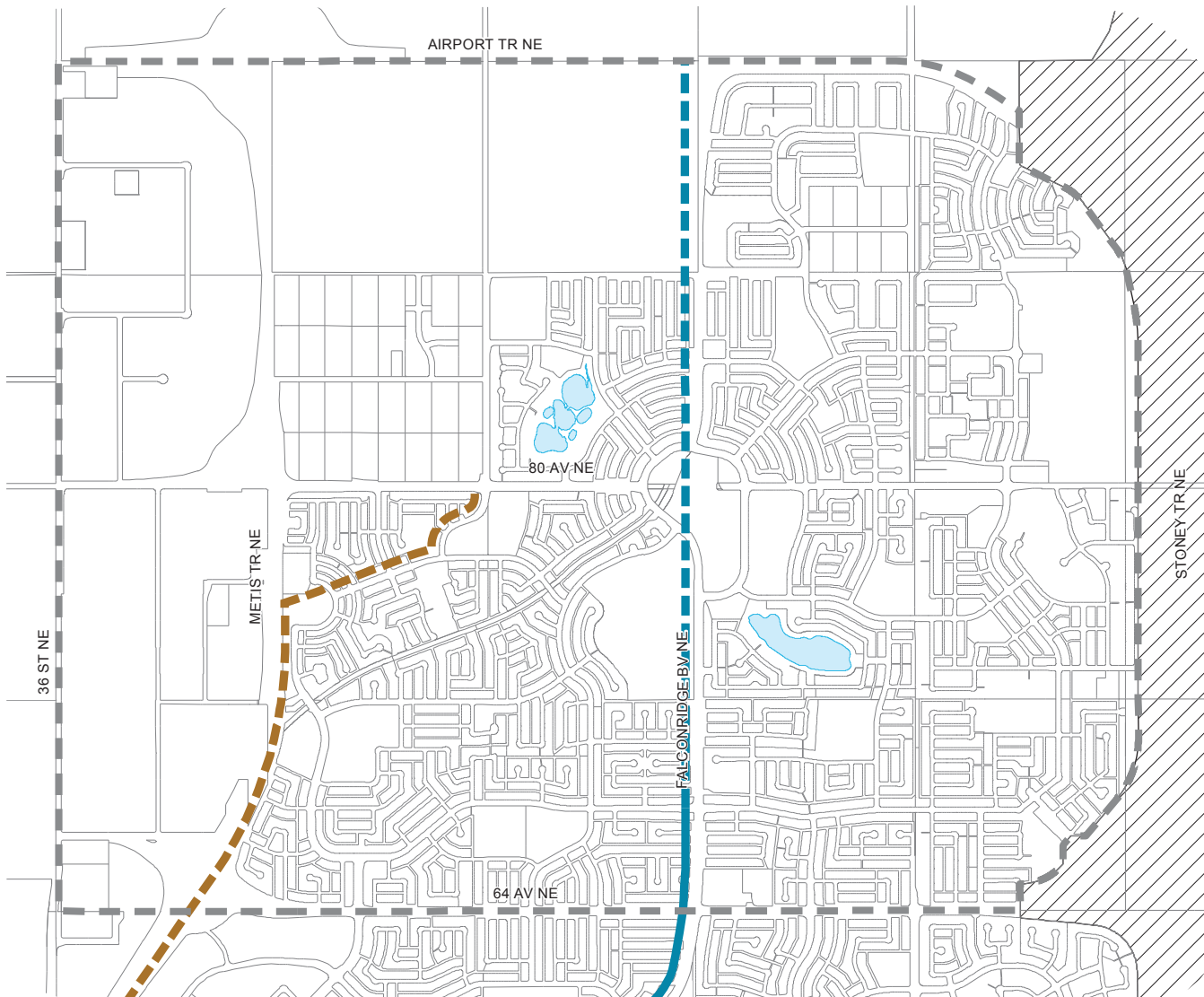
6.1.1 Design and Review of Water Distribution System

The water distribution system for the plan area shall be designed to adequately and efficiently serve the ultimate development of the area. The proposed distribution system for the Outline Plan area shall be reviewed and may be modeled by The City as part of an Outline Plan/Land Use Amendment application.
20P2011

Saddle Ridge Area Structure Plan

Map 8

Water Supply and Sanitary Sewers

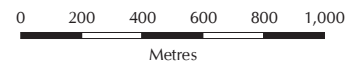


Legend

- City Limits
- Study Area Boundary
- Transportation/ Utility Corridor
- Water Supply**
- Existing Feedermain
- Proposed Feedermain
- Sanitary Sewers**
- Proposed Trunk

Approved: 3P84
Amended: 29P2013

This map is conceptual only. No measurements of distances or areas should be taken from this map.



6.2 Sanitary Sewers

Map 8 shows the sanitary sewer trunk alignments to serve the Saddle Ridge area. Future adjustments to these alignments will not require amendments to this plan. **7P93**

Sanitary sewer service will not be required immediately in Cell F, since the limited-serviced industrial activities can be serviced with holding tanks. However, applicants for development in this area shall be required to enter into deferred servicing agreements which will stipulate that they be assessed their fair portion of the costs at such time as sanitary sewer services are extended into the area.

Cell D will be serviced by connections to the existing Saddle Ridge sanitary trunk. Any future development in the plan area will trigger upgrades to the existing sanitary system. The extent of upgrades is identified in the Saddle Ridge Sanitary Study (to be completed by 2011 June). **20P2011**

South catchment of Cell E will be serviced by extensions to the existing Saddle Ridge sanitary trunk to the south. Ultimate development will trigger trunk upgrades in the future. Based on the recent (2013) sanitary analysis only limited development can proceed utilizing the capacity of existing sanitary trunk. **17P2014**

6.2.1 Design and Analysis of Sanitary Sewer System

The sanitary sewer system for the plan area shall be designed to adequately and efficiently serve the ultimate development of the area. As part of an Outline Plan/Land Use Amendment application, a developer shall submit a Sanitary Sewer Servicing Study to demonstrate that the subject land can be serviced in accordance with the overall design of the sanitary sewer system for the area. **20P2011**

6.3 Stormwater Management

Stormwater from the Saddle Ridge development area will be drained to the McKnight Boulevard storm sewer trunk system. This drainage scheme will obviate the need for construction of a new storm sewer trunk to Nose Creek at a major cost.

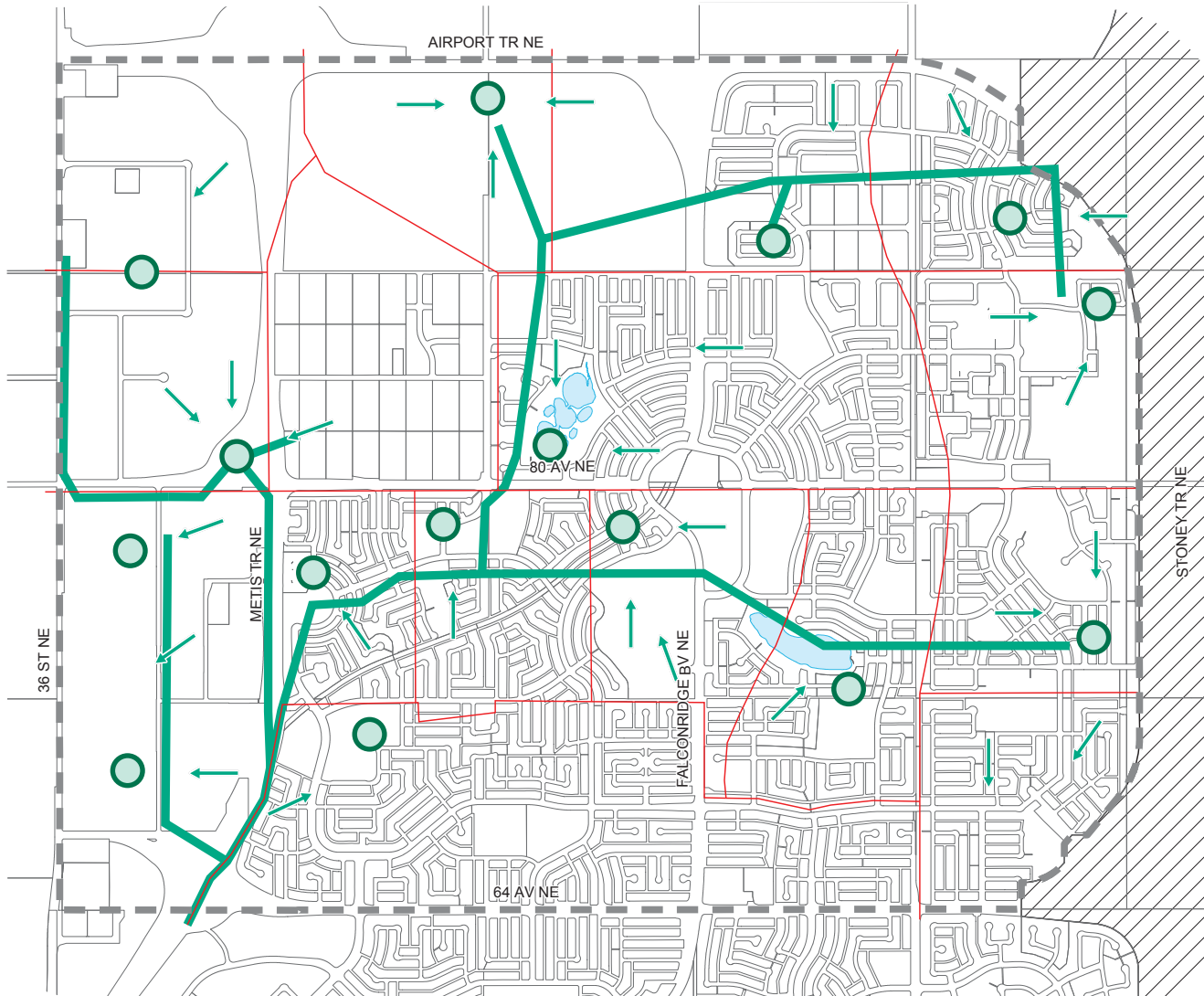
*There is inadequate capacity in the McKnight Boulevard storm sewer for direct discharge from the Saddle Ridge area. Therefore, peak storm discharge from the development area will be restricted to 1.71 litre/second/hectare. **15P97** The excess water will be stored in stormwater management ponds. At present, dry ponds are recommended for the development area. However, stormwater quality improvement may be required by Alberta Environment in the future and wet ponds or other water quality improvement may also be required.*



Saddle Ridge Area Structure Plan

Map 9

Stormwater Management

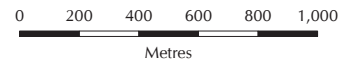


Legend

- City Limits
- Study Area Boundary
- ▨ Transportation/ Utility Corridor
- Storm Trunk
- Stormwater Pond
- ↑ Direction Of Flow
- Catchment Area Boundary

Approved: 3P84
Amended: 3P2016

This map is conceptual only. No measurements of distances or areas should be taken from this map.



All stormwater management ponds and major overland drainage routes are to be designed to accommodate a 100 year flood event.

The locations of dry storage ponds, primary and secondary storm sewer trunks and the subcatchment boundaries shown on Map 9 are conceptual only. Therefore, future adjustments to the dry pond storage concept will not require amendments to the Saddle Ridge Area Structure Plan. The developers shall be required to prepare, to the satisfaction of the City Engineer, detailed stormwater management plans for the subcatchment areas prior to development.

7P93

The Cell D area is within the Nose Creek watershed and all future development within the plan area should adhere to the Nose Creek Watershed Water Management Plan and a Master Drainage Plan for SE ¼ 15-25-29-W4M (7S Signature Inc., August 2009). This Master Drainage Plan will be revised based on the modifications to the stormwater management system (to be completed by June 2011). **20P2011**

Land that had been protected for a potential future interchange at 80 Avenue and Métis Trail NE may be used to accommodate stormwater ponds and future upgrades if required by the City. **29P2013**

6.3.1 Design of Stormwater Management System

The stormwater management system for the plan area shall be designed to adequately and efficiently serve the ultimate development of the area. As part of an Outline Plan/Land Use Amendment application, a developer shall submit a Staged Master Drainage Plan consistent with the Master Drainage Plan as approved by The City and the Province to demonstrate that the site can be serviced in accordance with the overall design of the stormwater management system for the area. The Staged Master Drainage Plan shall also comply with all approved stormwater management policies.

One stormwater management pond should service the land within Cell D. The Land Use Map (Map 6) identifies a potential location for the storm pond.

A surplus portion of the Metis Trail NE right-of-way will be legally closed and retained by The City as a Public Utility Lot (PUL). Additional land will be dedicated as PUL by the industrial developer within the Cell F lands. This PUL will be for a shared stormpond that benefits both Cell D (residential) and the southern portion of Cell F (industrial). The first developer needing stormwater services will be required to construct the full pond and downstream trunk infrastructure. This developer will be entitled to recover stormwater infrastructure costs from the other benefitting landowners. Those benefitting landowners will pay their proportionate share of those costs at the first subdivision or development permit following approval of this ASP amendment.

The routing of the internal stormwater network for Cell D will be accommodated within collector roads shown in Map 6 and through the local roads, utility easements and Public Utility Lots. This stormwater network should be finalized through an Outline Plan for a logical and comprehensive planning area within Cell D. Design details should demonstrate how the system will accommodate stormwater services for all landowners within Cell D. The funding and timing associated with locating the storm pond and its construction should be reviewed prior to approval of future Outline Plan/Land Use amendment applications.

20P2011
3P2016

6.3.2 Best Management Practices for Staged Master Drainage Plans

As part of the preparation of Staged Master Drainage Plans, best management practices, and alternatives for stormwater quality and quantity enhancement should be assessed with regard to introducing:

- i. stormwater facilities with a preference for source controls as opposed to end-of-pipe solutions;
- ii. naturalized methods, such as wetlands, to mitigate the effects of stormwater run-off into watercourses as opposed to hard engineering measures; and
- iii. stormwater measures that reduce impermeable surface runoff and correspondingly increase the permeable area such as permeable pavement, rain gardens, etc. An effective imperviousness between 10% and 20% should be achieved within the Plan area.

Where appropriate, the stormwater management system should be designed to:

- i. operate on a gravity basis and utilize the existing wetlands in an environmentally compatible manner; and
- ii. introduce mitigation measures to address the potential impact of water quality on existing wetlands and waterways including the Nose Creek and the Bow River”

20P2011

6.4 Electrical

The location of the 138 kV transmission line which will supply electrical service to Saddle Ridge is shown in Map 10. This 138 kV line will be on wooden poles within an 18 metre (60 foot) right-of-way immediately west of the present city limits, and will supply substation #48, which is to be constructed in the southeast corner of Section 23 immediately north of Saddle Ridge. Local service will utilize overhead 25 kV feeder lines.

6.5 Natural Gas

The proposed natural gas servicing system is illustrated in Map 10. The area will be fed by a north-south intermediate pressure main within the 60 Street right-of-way. The existing high pressure pipeline along *68 Street NE, 18P90*, is located within a 15-metre (50 foot) easement. A 15-metre setback is required between this pipeline and any habitable building. This line will feed a proposed regulator station to be located north of Saddle Ridge, from which the intermediate pressure main on 60 Street will supply Saddle Ridge. No problems are anticipated regarding the provision of natural gas servicing provided that the sequence of development is generally from south to north.

6.6 Telephone

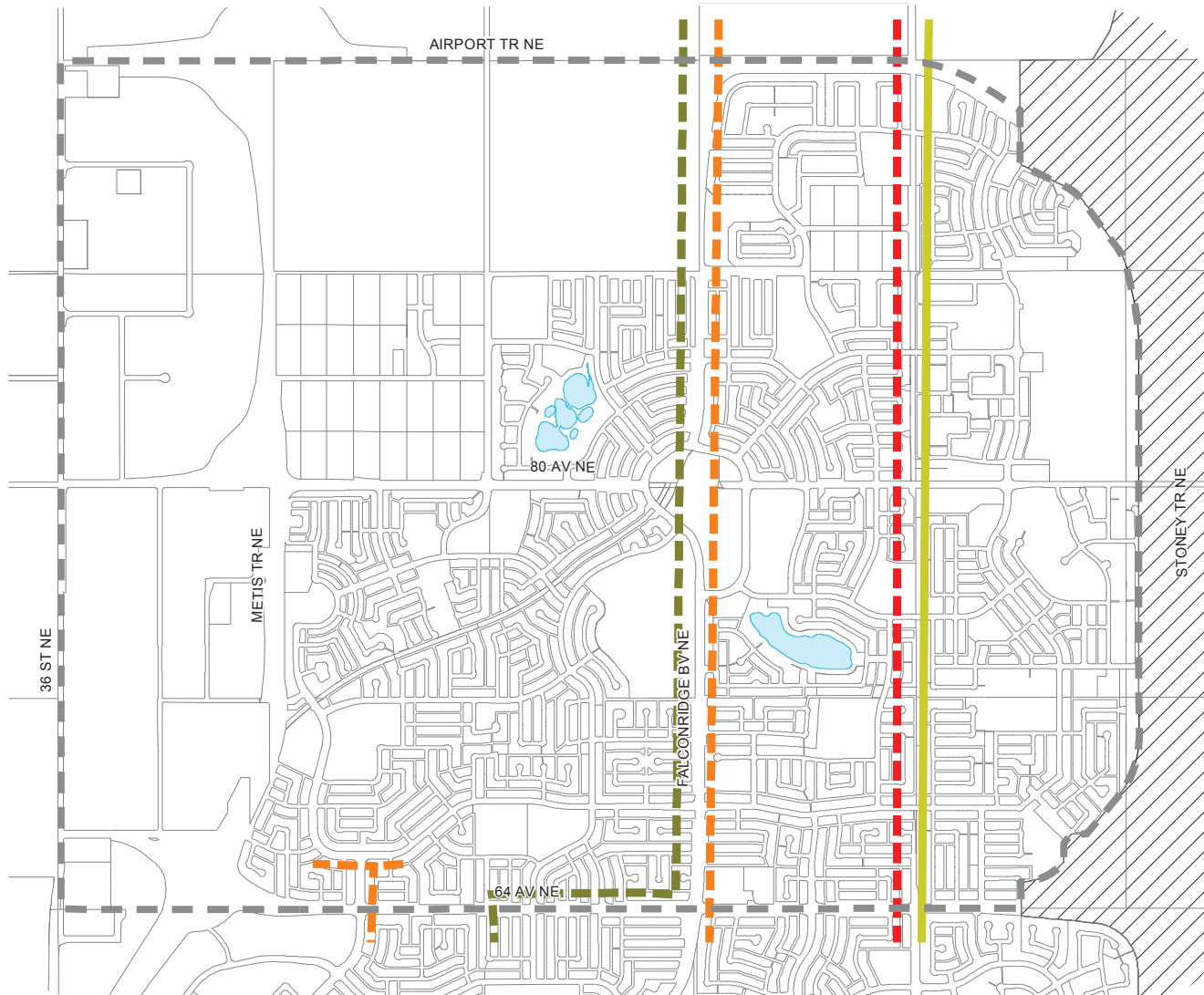
The proposed main telephone conduit to service Saddle Ridge will be located within the 60 Street right-of-way, as illustrated in Map 10. The area will be serviced from the Temple Exchange in the Properties, and local service lines will follow collector roads and local streets. No problems are anticipated regarding the provision of telephone servicing, provided that the sequence of development is generally from south to north.



Saddle Ridge Area Structure Plan

Map 10

Utilities

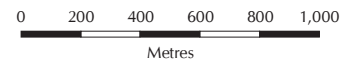


Legend

- City Limits
- Study Area Boundary
- Transportation/ Utility Corridor
- Electric Servicing**
 - Proposed 138 kV Overhead Line
- Natural Gas Servicing**
 - Existing High Pressure Line
 - Proposed Feeder Line
- Telephone Servicing**
 - Proposed Main Conduit

Approved: 3P84
Amended: 29P2013

This map is conceptual only. No measurements of distances or areas should be taken from this map.



7.0 COMMUNITY SERVICES

7.1 Public Health

The *Alberta Health Services* operates offices serving northeast Calgary in both Forest Lawn and the Properties. These facilities will provide the necessary services for the Saddle Ridge community.

17P2014

The nearest hospital will be located on 36 Street NE immediately north of 16 Avenue.

7.2 Social Services

The City of Calgary Social Services Department either provides, or coordinates the provision of, a wide range of social services. These include juvenile probation, community outreach, day care and family education programs.

A small Social Services office has recently been opened in Village Square Leisure Centre in the Properties, and will service the northeast sector for several years. Ultimately, however, a new office will be required further north to serve Saddle Ridge. A location and timing for this new office has yet to be established.

7.3 Library

A public library branch requiring a site of approximately 0.8 ha (2 ac) will be required at a central location within Saddle Ridge as the area approaches full development. In the meantime the Village Square Library will serve the area adequately.

7.4 Police

The Calgary Police Department will continue to service all of northeast Calgary from the existing District Office at 3207 - 12 Avenue NE. No additional stations will be required in Saddle Ridge, even with full development.

7.5 Fire and Ambulance

A new fire station will eventually be required in Saddle Ridge, although the location has not yet been established. Prior to construction of this station, fire protection will be provided from Station #22 at 7199 Temple Drive NE.

Presently, ambulance service is provided from Fire Station #22. A separate ambulance station will be established in the northeast in the near future and in conjunction with a "floating" city-wide ambulance service will serve the Saddle Ridge area.

8.0 THRESHOLDS AND SEQUENCE OF DEVELOPMENT

Inasmuch as roads, municipal services and utilities will generally be extended into Saddle Ridge from the south, development of the area will preferably proceed from the south to north. It is likely that Cell B will develop prior to Cell A due to the anticipated staging of sewer extensions. At the time this Area Structure Plan was adopted the City of Calgary had made no commitments to extend either water feeder mains or sewer trunks north of their existing limits at 67 Avenue and 60 Street NE, and at McKnight Boulevard and 36 Street NE, respectively.

Roughly half of the ultimate population capacity of 58,000 can be accommodated by waterworks improvements already committed for the Falconridge and Castleridge communities to the south. However, sanitary and storm sewer capacity is presently available only for development of the Martindale and Taradale subdivisions. The City has made no commitment to construct any of the trunk sewers or stormwater retention lakes required for development beyond those presently approved for Martindale and Taradale.

17P2014

The maximum population which can be accommodated in Saddle Ridge without overloading the capacity of the transportation system downstream (i.e., towards the downtown area) is in the order of 16,500. Therefore, in considering whether or not to approve

land use redesignations within Saddle Ridge which might result in this threshold being exceeded, City Council will have three options from which to choose:

1. Approve the application and, concurrently, approve improvements to the transportation system as recommended by the Transportation Department;
2. Refuse approval of the application, thereby forestalling the need for transportation improvements; or
3. Approve the application, but defer approval of the recommended transportation improvements, recognizing that this decision could result in heavy traffic congestion on particular roadways.

Cell F is suitable for limited-serviced industrial development immediately, in accordance with the conditions outlined in Section 4.5.1 with regard to protection of the existing residences in the area.

The thresholds established above are based upon the best information available at the present time, and may be subject to revision. Development will be monitored through the outline plan process, and the Approving Authority will be informed as the population thresholds are being approached.

8.1 Deleted

11P85, 17P2014

Deleted Map 11

17P2014

Saddle Ridge ASP Supporting Information

Appendix 1

ENGINEERING DEPARTMENT REPORT

SERVICING COST IMPLICATIONS FOR SADDLE RIDGE

1984 JANUARY 03

This Engineering report prepared by the Engineering Department is being forwarded to C.P.C. and Council as an information document in conjunction with the Saddle Ridge Area Structure Plan, in an effort to give the approving authorities a full understanding of the servicing implications associated with development of the Saddle Ridge area.

SERVICING COST IMPLICATIONS

The servicing of Saddle Ridge will generally be accomplished by the creation of new infrastructure systems as opposed to extensions of existing facilities. This is particularly true for the storm and sanitary sewer systems in that new acreage assessment catchment areas will have to be established. The waterworks and road networks tend to serve the north east in general; to the extent that the infrastructure in place to date is capable of handling the existing and/or approved for development demands. If Saddle Ridge is prematurely brought on stream, then the ultimate

effect is demand thresholds are crossed and the City is forced to front-end major upgradings to improve these two systems.

The net effect on the costs to the City of creating these new sewer systems or crossing thresholds for the others is to create both a high front end development cost coupled with obligations that could approach \$48,427,000 (1983) at the time the City commits to servicing the first phase of Saddle Ridge. Granted, the obligations will occur over time; however, the City will still be obligated to an initial cost in the order of \$19,155,000 (1983) to complete the developer's proposed Stage 1 (generally considered Cells A and B). Some of the City's costs, particularly the road network, obviously don't provide benefit to just Saddle Ridge; but also to areas such as Northridge; however, as long as Saddle Ridge does not develop, the front-end cost can be deferred.

A breakdown of the infrastructure costs is attached as Appendix 1 as well as maps indicating the facilities, (Appendix 2).

ANALYSIS

A number of factors should be considered when reviewing the City's cost implications for initiating development in the Saddle Ridge area. These include:

1. Historically, the development of Saddle Ridge was constrained by the presence of sour gas, which caused the long range servicing planning for the area to establish a number of boundaries and thresholds that generally coincide with the southern boundary of Saddle Ridge. Having all these boundaries coincide for the subject area means that, unlike a number of other areas within the City where development causes a City commitment on only portions of the infrastructure system at any given time, the Saddle Ridge area has all the City commitments aligned at the same place for the servicing of the first phase of Saddle Ridge.
2. The present location of the storm and sanitary sewer for Saddle Ridge is at the intersection of 36 Street and McKnight Boulevard. To serve the proposed first phases of Saddle Ridge requires the extensions of these systems past the Westwinds Industrial Area, a distance of between one and two miles. The residential market in the north east is developing faster than the industrial market and, as such, the first phases of Saddle Ridge are in essence leap frog development, heavily increasing the City's initial costs.
3. Traditionally, the north east sector of the City has been known for its affordable housing and to a certain extent this has been based on the low infrastructure costs required to accommodate existing development. This is no longer the case for Saddle Ridge. The systems costs for Saddle Ridge, particularly the storm sewer (with its associated retention lake facilities), will mean

that with all other things being equal, the Saddle Ridge area will become less affordable given these higher servicing costs.

The City, based on the balanced growth strategy policy of the last few years, has constructed a number of major servicing systems in other parts of the City which are largely under utilized at the present time. The Engineering Department believes that it is only prudent, based on the current economic times, that new development within the City be concentrated in those areas already serviced, to enable the City to recover more of their front-end costs without incurring additional liabilities. The construction of new development servicing systems has a major impact on the City's financial position and the reduction or deferral of these costs to a more economically justifiable time will greatly improve the City's overall position.

The Planning & Building Department as part of the present annexation studies, has been instructed to undertake the first phase of a three part Growth Management Study. This study is aimed at providing answers to how Calgary will best expand in the future. The Planning Department has confirmed that included in its study is a review of density variations and infrastructure economics (considering both the facilities in place to date and new systems required for future corridor growth, etc.) to better enable the Administration to assess the timing requirements for developing new sectors of the City such as Saddle Ridge, based on optimizing the City's overall objectives.

CONCLUSIONS

The Engineering Department has studied the servicing cost implications for the Saddle Ridge area and has concluded that based on today's economics and the City's major front-end commitments for the initiation of development, that development not proceed in Saddle Ridge at this time. The Department has no objections to the planning process being completed, as this process will be of benefit to the City and the landowners affected; however, the landowners should clearly realize that development in Saddle Ridge is contingent upon a heavy financial input from the City and such will not be forthcoming until appropriate budgets can be justified and are approved some time in the future.

APPENDIX I

CITY SERVICING COST ESTIMATES

	PHASE 1	LATER PHASES
Waterworks		
Booster Station	\$ 800,000	
Nose Creek Line		\$12,075,000
Sanitary Sewer		
36 Street (to 70 Avenue)	1,874,000	
36 Street and 80 Avenue		750,000
Storm Sewer		
36 Street and 70 Avenue	4,331,000	
36 Street and 80 Avenue		1,847,000
Storm Lakes		
Lake 1	1,950,000	
Lake 2		3,100,000
Lake 4	4,800,000	
Roadways		
McKnight Boulevard (36 Street/52 Street)	2,100,000	
36 Street (McKnight/64 Avenue)	3,300,000	
36 Street (64 Avenue/80 Avenue)		2,600,000
Interchange (Barlow Trail/ 36 Street)		8,000,000
McKnight Boulevard - 6 lanes (Barlow Tr./36 Street)		900,000
TOTAL	<u>\$19,155,000</u>	<u>\$29,272,000</u>
GRAND TOTAL		<u>\$48,427,000</u>

Appendix 2

ENERGY RESOURCES CONSERVATION BOARD Calgary, Alberta

PUBLIC MEETING TO CONSIDER CONCERNS REGARDING THE DEVELOPMENT OF THE DECISION D83-6

PROPOSED SADDLE RIDGE AREA PROCEEDING 821207

1. INTRODUCTION

The Energy Resources Conservation Board (the Board) received a request from the City of Calgary on 14 June 1982, to provide recommendations respecting the development of the Saddle Ridge area in northeast Calgary where there are a number of sour gas wells and pipelines. The Board considered the matter and subsequently met with City representatives on its position in a letter of 17 September to the City. The areas where the Board recommended that development not occur are shown in Figure 1 and generally reflect a separation distance of 0.5 kilometres (km) between residential development and existing sour gas wells and pipelines. The Board's letter also set out alternatives to illustrate setback distances between possible relocated sour gas facilities and proposed residential development.

As a result of the September 17 letter, the Board received a letter from Mr. A. Froese of Kentron Development Corporation Ltd., which requested that a meeting be arranged to discuss the proposed setback distances. A meeting was then held to review the matter with representatives of the land developers, gas operators, City of Calgary and the Board attending.

At that meeting, it was decided to defer consideration of the setback distances and schedule a public meeting where all interested parties could present their views to the Board. The public meeting took place in Calgary on 25-26 January and 14-15 March 1983 with V. Millard, G.J. DeSorcy, P.Eng. and V.E. Bohme, P.Eng. sitting. Appendix A is a list of those who appeared at the meeting.

2. LEGISLATION

Requirements governing separation distances between sour gas facilities and land development are enacted by both the ERCB and the Alberta Planning Board.

The current minimum distance requirements for separating new sour gas facilities from existing residential and other land development are set out in the ERCB's Interim Directive ID 81-3. The separation distance is a function of the volume or rate of hydrogen sulphide (H₂S) that could be released in case of a malfunction of the facility.

The Subdivision Regulations made pursuant to the Planning Act, 1977, set separation distances for new residential or urban developments from existing sour gas facilities identical to those in ID 81-3. It also grants the ERCB the authority to designate the levels of sour gas facilities for separation purposes.

For subdivision applications, the Board furnishes the Subdivision Approving Authority with the classification of the sour gas facility and if necessary, associated recommendations. The Subdivision Approving Authority considers the recommendations of the Board as well as other referral authorities, but is not bound by them.

3. BACKGROUND ON SADDLE RIDGE

The Saddle Ridge area, shown on Figure 1, encompasses approximately 1130 hectares in the northeast corner of the city. The present land use is generally agricultural with limited residential acreages. There is some light industrial usage in the western portion of the Saddle Ridge area.

3.1 Sour Gas Facilities and Remaining Reserves

There are five producing sour gas wells within the boundaries of the proposed Saddle Ridge area development, four wells within the city and a fifth well outside the present city boundaries. The wells are producing from the Rundle B and Basal Quartz pools and one is injecting water into the Wabamun A Pool. The hydrogen sulphide content of the pools is very low, ranging from 0.4 per cent to 1 per cent, and the sour gas is transported by pipelines through the proposed Saddle Ridge area to the Petrogas processing plant located 5.5 km north of the area. The wells and pipelines are shown on Figure 1.

Production of gas from the area commenced in 1963 and the time of abandonment of the area is expected to be between 15 and 20 years hence. The following table details the producing pools for each well and their estimated life expectancy as calculated by Petrogas, Cathton and the Board. It also shows the remaining marketable reserves as estimated by the Board, assuming that production would continue until the time of normal economic abandonment.

TABLE 1 SADDLE RIDGE WELLS

Estimated Life Expectancy and Remaining Marketable Reserves

Well Remaining (Abbreviation) Marketable	Producing	Life Expectancy Pool		
		Reserves	Years	
Petrogas ^a 106 m ³	Cathton ERCB ^b			
01-09-25-29 W4 (1-9)	Rundle B Bsl Quartz B	3-5 10-15	4 65 ^c	30
10-10-25-29 W4 (10-10)	Bsl Quartz B	1-2	3	3
11-11-25-29 W4 (11-11)	Rundle B	5-10	12-15	157
04-15-25-29 W4 (4-15)	Rundle B	10-15	15-19	456
11-13-25-29 W4 (11-13)	Rundle B Wabamum A	3-5	15 11-13	64
	TOTAL			775

- a. The higher number assumes that wells are shut-in for part of the year while the lower number assumes continuous production.
- b. Assumes continuous production throughout the year. The higher number assumes reduced proportion rates due to possible water problems late in the life of the well.
- c. Recompletion required.
- d. The 11-13 well is also used for Crossfield sour water injection into the Wabamum A Pool. This is one of two disposal wells that is critical to the operation of the plant and therefore the life of the well will be that of the plant.

The table indicates the relative importance of the 4-15 well from which it is estimated that approximately 60 per cent of the remaining reserves in the Saddle Ridge area may be recovered and the 11-11 well where approximately 20 per cent of the reserves may be recovered.

3.2 Saddle Ridge Development Proposal

Carma and Kentron indicated that the Saddle Ridge area should be developed commencing in 1984 or 1985 to fill a need for affordable housing in the northeast corner of the city. Although the two firms have interest in only some 450 hectares of the area, they have designed a development plan (Figure 2) which encompasses all land within the Saddle Ridge area, including the land owned by Cathon which is presently outside the city limits. The plan calls for construction of about 2500 residential units per year with an ultimate population for the Saddle Ridge area of some 60,000 people.

The City of Calgary agreed with the developers that the northeast is an economical area for expansion of the city because for the most part, it is readily serviceable. The City indicated that while the land is not urgently needed for development given the present market conditions, the need for a decision on setback distances is urgent because the planning process is lengthy.

3.3 Responses to Recommended Setback Distances

In the Board's letter of 17 September 1982 to the City of Calgary, a setback from the sour gas pipelines of 350 to 500 metres was proposed. The Board considered it appropriate to recommend larger separation distances than specified in ID 81-3 because it was concerned that high density urban development should not be located adjacent to and surrounded on most sides by sour gas wells and pipelines. The separation distances recommended by the Board were generally the next higher sour gas level than required by ID 81-3. For example, where the potential sour gas release volume was such that the facility qualified as a Level 1 facility, the Board used the separation distance for a Level 2 facility.

The developers indicated that the increase in setback distances required in the Board's 17 September letter sterilized in the order of 300 hectares from development, thereby rendering the entire Saddle Ridge area economically undevelopable. In addition, the developers suggested that the large separation distances could affect the Martindale subdivision located directly south of Saddle Ridge because servicing of the northern portions of that area might not be possible.

Certain landowners in the area expressed concern over the large setbacks and indicated that the wells should be abandoned or relocated. They stated that if they are denied their right to develop their land, due to the existence of sour gas facilities, the economic penalty should be assessed against the sour gas operator. They suggested that a cost/benefit analysis should be made to determine priorities by assessing the economic benefit accruing from the gas production compared to the economic cost suffered by the landowner.

Petrogas contended that the setbacks should be at least the 500 metres recommended by the Board to protect the public. It argued that the effect of reduced setbacks may be the early shutdown of sour gas facilities and the loss of reserves.

The City of Calgary indicated that it would rely on the Board's recommendation for the determination of the appropriate setback distance.

4. ISSUES

The Board considers the major issues to be:

- The appropriate separation distances from the existing sour gas facilities in Saddle Ridge.
- The need for special provisions within the setback area.
- The need for restrictions on the sour gas operations in the area having regard for competing land use.
- The need for phasing residential development with the depletion of the gas reserves.

4.1 Separation Distances

Participants' Views

All participants indicated that residential development in Saddle Ridge should be separated from sour gas facilities. However, there was disagreement with respect to the appropriate setback distance with suggestions ranging from 20 metres to 500 metres or greater.

Dr. Leahey, on behalf of Carma and Kentron, suggested that the worst case scenario, as proposed by Petrogas, should not be used. Rather, he argued that the setback distance should be established by assessing personal risk and overall consequences of a sour gas release. He contended that a study of these matters indicates no serious risk or consequence to the public beyond some 20 metres from the pipelines.

The developers in general suggested the setback distance for Saddle Ridge should recognize that the sour gas content is barely one per cent and the H₂S release volumes for the wells and pipelines are low in comparison to the lowest category release (Level 1) specified in the Board's ID 81-3. The developers therefore proposed a 20 metre setback from the pipelines and a 100 metre setback from the wells.

The landowners generally supported Carma and Kentron while Mr. Longpre, representing the Saddle Ridge Business Association, suggested that if light industrial use, primarily outside storage, was not permitted within the setback area, the separation distance should be limited to the pipeline right of way.

Petrogas suggested that the Board recommend setbacks which correspond to the 100 parts per million (ppm) H₂S isopleth utilizing a worst case scenario. It stated that the primary use is safety and due consideration must be given to the number of people exposed to sour gas from a well or pipeline failure. It was also concerned with the compatibility of sour gas producing operations with urban development in terms of noise, odours and general activity. Petrogas therefore favoured a setback of at least 500 metres from the pipeline.

The City indicated that it would rely on the advice of the Board. It asked the Board to include recommendations

respecting the Level 3 and Level 4 facilities outside the corporate City limits to the east and north of Saddle Ridge, as well as for the facilities within Saddle Ridge.

Board's Views

The Board does not believe that separation distances should be based on the calculated 100 ppm isopleth. One reason for this is the wide range in estimates for the 100 ppm isopleth depending upon the assumptions used in its derivation. Petrogas suggested that a worst case analysis be used to calculate the isopleth, but in the Board's view, this is an unnecessarily restrictive method of determining potential impact in that it assumes every possible factor would be at its worst at the same time. Such an approach reduces the risk of being in an area near sour gas facilities to much less than is faced from even the most remote hazards in modern society. Indeed this was the reason the Board discontinued the use of the isopleth distance when it issued ID 79-2 in 1979 (ID 79-2 was superseded by ID 81-3 in 1981).

As a result of the concerns expressed and information supplied at the meeting, the Board has reviewed the separation distances outlined in its September, 1982 recommendation to the City. Having regard for the H₂S release volumes and the risks and consequences, the Board concludes that the recommended setback distances were unnecessarily large.

The most significant factors which led the Board to this conclusion relate to the H₂S content of the gas and to the possible H₂S release volumes for the facilities in the area. The H₂S content and release volumes associated with the wells and pipelines are at the lower end of the Level 1 classification set out in ID 81-3. This would suggest that the separation distances for Level 1 facilities, 100 metres for wells and the right of way width for pipelines, would be adequate.

With respect to wells and having regard for their capability to produce and the H₂S content of the gas, the Board is satisfied that the 100 metre setback for urban development would not jeopardize public safety.

In this area, the pipeline right of way is generally 13.7 metres wide so the ID 81-3 setback distance from a pipeline in the middle of the right of way would likely be less than 7 metres. The Board does not consider this would be adequate, not so much because of possible danger to the public due to H₂S if a release occurred, but primarily because the setback distance is not adequate in terms of reducing the chances of third-party damage to the pipelines during the heavy development period. Section 28.1 of the Pipeline Regulations establishes a controlled area of 30 metres to minimize chances of third-party damage. The Board believes this is the separation distance that should be maintained from the sour gas pipelines in Saddle Ridge.

The above conclusions that 100 metre and 30 metre separation distances respectively, are, adequate for the existing wells and pipelines, are based on concerns for an acceptable level of safety for the public. The Board does recognize that such separation distances would likely result in nuisance type impacts, such as odours, and noise, on nearby residents. To minimize these impacts and also to further reduce the risk to public safety, the Board believes that the chances of an uncontrolled release should be reduced by requiring special precautions to protect the sour gas facilities from third-party damage. The consequences of a release, in the unlikely event that one did occur, could also be reduced by ensuring that all safety features to limit release volumes are installed and properly operating. These special precautions are discussed further in Section 5.

The City asked the Board to comment respecting separation distances for the Level 3 and 4 facilities east and north of the Saddle Ridge area and in particular, as to whether these would impact on the area. The Board continues to be of the view that the minimum separation distances prescribed in ID 81-3 are appropriate for the sour gas facilities outside the corporate City limits of Calgary. Since the Level 3 facilities in question are more than 1.5 km removed to the east and the Level 4 facilities are approximately 5 km to the north of the Saddle Ridge area, the Board sees no need for special restrictions for Saddle Ridge beyond those set out in the ID. Additionally, the major concern related to increased ground disturbance during construction would not be a problem with respect to the sour gas pipeline outside of the City.

4.2 Land Use within the Restricted Area

The Board notes the uncertainty of the developers, landowners and planners over permitted land use within the setback areas.

Participants' Views

The developers in their preliminary plans, proposed roads, underground services, parks and school grounds within the proposed 20-metre setback. Mr. Longpre suggested that outside storage should be permitted within the setback area up to the pipeline right-of-way.

Board's Views

In view of the reduced setback distance, the Board is of the opinion that public and industry use of the land within the restricted area should be limited as much as possible. The Board believes that it is not appropriate for any buildings to be located in the setback area, nor is it appropriate to have roads or major utilities paralleling the pipeline within the setback. These measures would reduce the possibility of third-party damage to the pipelines during the construction or post-construction phases.

The Board believes the setback area could be used as green areas, but centres for public gatherings such as parks and playgrounds should be avoided. Where public facilities, such as playgrounds and parks

about the setback area, they should be separated by permanent fencing. Limited industrial outside storage could be permitted up to the pipeline right-of-way provided no ground disturbance would be associated with the industrial activity.

4.3 Restrictions on Sour Gas Operations

As indicated in Section 4.1, the Board is satisfied that existing sour gas operations and urban development could co-exist without serious risk to public safety. There would, however, be nuisance impacts of the sour gas operations on residents of the area. For this reason, and because certain surface owners suggested that wells could be abandoned to avoid land use conflicts, the Board is dealing with this matter.

Participants' Views

Petrogas argued that there was a significant amount of gas to be recovered and it was not prepared to abandon the wells without suitable compensation.

All participants agreed that it was in the interests of everyone to deplete the reserves as soon as possible, thereby allowing the reserves to be recovered and not creating undue hardship on the landowners. Petrogas indicated that it was actively pursuing the possibility of accelerated depletion for the wells in the Saddle Ridge area.

Boards' Views

The Board considers the remaining marketable reserves under the Saddle Ridge area to be significant, almost $800 \times 10^6 \text{ m}^3$ of gas worth in excess of \$80 million at current prices, and therefore concludes that abandonment of the wells at this time would not be appropriate. The Board has also made an assessment of the degree to which reserves would be lost if abandonment were to take place prematurely but at future dates as urban development proceeded. The analysis assumed that gas production would be feasible on a continuous basis and indicated that if abandonment occurred in 1986, some 300 to $500 \times 10^6 \text{ m}^3$ of gas worth about \$40 million would be ultimately lost. If abandonment occurred in 1990, some 200 to $300 \times 10^6 \text{ m}^3$ of gas worth some \$25 million would be lost. The lower limit of these calculations assumed that some drainage from beneath the Saddle Ridge area would occur towards an existing northern well.

Given the economic loss from early abandonment of wells in the area and that urban development could proceed economically with separation distances which would not jeopardize public safety, the Board concludes that premature abandonment of wells in the area would not be in the public interest.

Bearing in mind the nuisance impacts that would result from co-existence of gas operations and urban developments, the Board agrees with the participants that rapid depletion of sour gas reserves in or near urban areas is desirable and believes that Petrogas

should continue to actively pursue measures towards this end. The Board notes that Petrogas estimate of a one-third reduction in life if the wells are produced year round. It expects that a further reduction in life may be possible if the production rates can be increased.

The Board recognizes the difficulty described by Petrogas of producing the subject wells at full capacity given the existing marketing problems respecting Alberta gas and the substantial shut-in reserves. If voluntary arrangements cannot be made that would allow rapid production of the reserves in question, it may be necessary for the Board to seek an amendment to legislation that would allow it, with the approval of the Lieutenant Governor in Council, to direct the rates at which gas must be purchased from areas such as Saddle Ridge.

4.4

Phasing Urban Development

The possibility of phased urban development has the potential to reduce the time span over which co-existence and the related nuisance problems would be necessary.

Participants' Views

The developers, landowners and the City indicated that it was not appropriate, as Petrogas suggested, to delay urban development until the reserves are depleted. Carma and Kentron submitted that there was a need for inexpensive housing in northeast Calgary that could not be provided elsewhere in the City.

As an alternative to restricting urban development for the entire Saddle Ridge area, Carma/Kentron suggested a phased development where urban expansion would take place as the wells are abandoned. Utilizing the Petrogas abandonment estimates, Carma/Kentron submitted a phased-development plan whereby areas not affected by large setbacks and areas freed up by well abandonments would be developed first. The plan is summarized in Figure 2, and suggests that development could take place in areas 1 and 2 during the 1980s, but by 1989/90, the original ERCB recommended setback from the 11-11 well would place restrictions on future construction possibilities.

Board's Views

The Board believes that a phased development plan to minimize co-existence is not required for public safety but would be desirable to avoid nuisance impacts on residents from the sour gas facilities. Phased development would lower the impact of the noise and odours created by well workovers, flaring and day-to-day sour gas operations.

The Board notes from a comparison of Table 1 and Figure 2 that there is considerable scope to phase developments and minimize impacts during the 1980s. Thereafter the importance of the 4-15 and 11-11 wells, in terms of gas recovery, would mean that co-existence will be necessary if residential developments proceed as planned. The Board does not consider this a serious problem but believes that developers, city planners and Petrogas should cooperate to minimize potential conflicts through a coordinated development approach.

5. SPECIAL MEASURES TO MINIMIZE THE IMPACT OF SOUR GAS OPERATIONS AND THE CHANCES OF A RELEASE

In addition to the subject of separation distances, measures such as notification and safety procedures were discussed at the meeting. The Board considers these to be an inherent part of its recommended reduction in separation distances and, consequently is dealing with them in this report. Where the Board has jurisdiction, it intends to impose the special safety measures and, for those controlled by the City, it recommends adoption by that jurisdiction.

5.1 Notification

Participants' Views

Petrogas suggested that the public should know that sour gas wells and pipelines are in the vicinity of their dwellings so as to improve their awareness with respect to odour, noise, flaring and response to an emergency. Mr. Froese suggested a caveat could be placed on the land title informing the potential buyer.

Board's Views

The Board supports the concept of informing prospective purchasers and residents regarding the present sour gas facilities in the area but it questions the applicability of such a caveat on land titles. An alternative action which the Board believes the City should consider is an information package that would

be developed jointly by a committee that includes the sour gas operator, the City, the developers and the Board. The information package would be made available to prospective purchasers and distributed to residences on a regular basis. The package should clearly set out the existence of the sour gas facilities and should describe expectations and procedures regarding nuisance problems such as odours, noise and flaring.

In the Board's view, the information package should be funded by the developers.

5.2 Safety Procedures

Participants' Views

The developers outlined a number of measures that could be taken to protect the sour gas facilities during the construction and post-construction periods. These include:

- Fencing the pipeline right-of-way until the housing in the area is completed.
- Making vehicle access to the right-of-way impossible except in a controlled manner.
- Utilizing ramps where equipment must cross the pipeline right-of-way.
- Requiring excavations at pipeline crossings to take place prior to the construction of housing near the area.

- Utilizing an absolute minimum number of crossings.
- Utilizing full time inspectors for major excavations near pipelines.
- Imposing strict control measures to protect the pipelines at all times during construction.
- After construction, placing signs in the vicinity of the pipelines and installing underground tapes to mark their locations.

If further precautions are required, the developers suggested that they should be recommended by a utility coordinating committee made up of representatives of all involved parties.

Petrogas briefly outlined some of its crossing procedures including the accurate location and staking of pipelines, fencing of pipeline right-of-way, liaison on a daily basis, establishment of a surveillance system and the possible depressuring of pipelines when crossings are to be installed.

Petrogas indicated that it has a good safety record and must maintain it long after the developer has concluded operations, suggesting that it would be responsible for surveillance and responses to complaints after the construction period. In addition, Petrogas indicated that only the 4-15 well in the Saddle Ridge area has an emergency downhole safety valve and agreed that it may be a good idea to install downhole valves in the other wells if the population increases.

Board's Views

The Board notes that many of the construction precautions that were mentioned at the meeting are required by the Pipeline Regulations and are current practice. However, the Board agrees that for the sour gas facilities under discussion, the additional measures suggested by the developers and operators are appropriate and should be implemented. Details should be submitted to the City, the gas operator and the Board prior to construction and should include all of those suggested earlier by the developers. The Board believes that the cost of these measures, taken to protect the sour gas facilities from ground disturbance, should be borne by the person responsible for the ground disturbance.

The Board considers it appropriate for the operator to install downhole safety valves for the wells in Saddle Ridge at the time of the next workover and no later than the residential development stage in the immediate area. The Board will impose this requirement on the gas producers.

If residential development goes ahead in the subject area prior to the abandonment of the gas wells, the Board suggests that a special liaison committee be established by the City of Calgary. It should be made up of representatives of the gas producers, land developers, residents and landowners in the area, the

City and the Board. In addition to coordinating the preparation of the previously mentioned brochure and special measures during construction, it would deal with ongoing complaints or procedures for notifying the public of flaring operations and other relevant matters, and where necessary, would recommend further actions to those having jurisdiction.

The Board would not expect the costs associated with the committee to be significant and would expect them to be generally covered by the participants in the committee. The Board considers it important that the developers' involvement with the committee be maintained after the lands have been developed and disposed of to contractors or individual residents.

6. RECOMMENDATIONS

The Board recommends that the City adopt, for the Saddle Ridge area, separation distances between residential development and sour gas facilities of 100 metres for the wells and 30 metres for pipelines.

The Board further recommended that the City consider for adoption the suggestions set out in this report regarding land use within the restricted area, notification of prospective purchasers and residents, safety procedures during construction and formation of a liaison committee.

ISSUED at Calgary, Alberta, on 8 June 1983.

ENERGY RESOURCES CONSERVATION BOARD

V. Millard
Chairman

G. J. DeSorcy, P.Eng.
Vice Chairman

V. E. Bohme, P.Eng.
Board Member

APPENDIX A

THOSE WHO APPEARED AT THE MEETING

Principal and Representatives Witnesses
(Abbreviations used in Report)

City of Calgary Planning
Department (City)

T. Brown, M.C.I.P.
B. Simpkins, M.C.I.P.
P. Dack, M.C.I.P.
Captain M. MacKenzie of
the City of Calgary
Fire Department

Carma Developers Ltd. and
Kentron Development
Corporation Ltd.

A. Froese of Kentron
E. Ayerst, M.C.I.P. of
Carma

(Carma and Kentron)

M. Saville
Dr. D. Leahey of
Western Research
R. Neufeld
G. Brown of Stanley and
Associates
F. Grigel, P.Eng., M.C.I.P.
of Stanley and Associates
C. Van Bussel of Stanley
and Associates
Dr. C. Swoveland of
Quantalytics Inc.

Cathton Holdings (Cathton) R.A. Manning
D.G. Ingram
J.K. Farries, P.Eng.
of Farries
Engineering Ltd.
P. English, M.C.I.P.
of Plan West

Qualico Developments W. Richter

Oscar Fech Construction Ltd. O. Fech

Longpre Associates J.C. Longpre, M.C.I.P.

A.E. Manz A.E. Manz
R.L. Manz, P.Geol.

219575 Alberta Ltd. M. Sardachuk of
Meteor Developments Ltd.

Saddle Ridge Community Association C. Jacobsen

Petrogas Processing Ltd. R.H. Orthlieb, P.Eng.
D. Parsons
G. Simpson, P.Eng.
W. Van der Linden
Dr. E.K. Enns of the
University of Calgary
Dr. E. Leavitt of Interra
Environmental
Consultants Ltd.

Board Staff L. Holizki, P.Eng.
M. Bruni
W.G. Remmer, P.Eng.
Dr. R. Purvis, P.Eng.
C. McKay
W.E. Roberts

Mr. Allen filed an intervention but did not appear at the meeting.

Sour Gas Constraint Areas

The Energy Resources Conservation Board Decision Report of 1983 June 18 respecting development in Saddle Ridge included the following statement:

"The Board believes that a phased development plan to minimize coexistence is not required for public safety but would be desirable to avoid nuisance impacts on residents from the sour gas facilities. Phased development would lower the impact of the noise and odours created by well workovers, flaring and day-to-day sour gas operations."

In this regard, a development constraint area of 300 metres from wells and 30 metres from pipelines has been established and is shown on Map 11. Residential development or other urban density uses within this constraint area will not be permitted until such time as the sour gas wells and pipelines associated with the area are abandoned. The portion of Cell F within the constraint area may be developed for limited-services industrial uses as outlined in Section 4.5.1. In addition, major services (including storm retention ponds) and roads may be located within the constraint areas around the wells when required to serve adjacent developable areas. There is no sour gas constraint on development outside the constraint areas as identified on Map 11.

The precise limits of each constraint area will be determined at the outline plan stage. In this regard, outline plan proposals shall be referred for comment to the Saddle Ridge Development Liaison Committee, whose comments shall be forwarded to the appropriate Approving Authority for consideration prior to any approvals being granted. In the case of abandoned sour

gas wells or pipelines, the affected landowners/developers wishing to develop their respective lands, shall consult with the Energy Resources Conservation Board (E.R.C.B) and the operator of the abandoned well/pipeline concerning their development proposals. No buildings or other structures shall be constructed over abandoned sour gas wells or pipelines without the written consent of the E.R.C.B. **18P90** In addition, any applications for land use amendments or development permits within the constraint areas shall be referred to the Liaison Committee for comment and the comments received referred to the appropriate Approving Authority. **11P85**

Risk Assessment

Purpose

While the Energy Resources Conservation Board (ERCB) outlines basic setbacks and guidelines for oil and gas facilities, further investigation, such as a Risk Assessment, is necessary to determine appropriate land uses adjacent to specific facilities. The purpose of a Risk Assessment is to evaluate the potential long- and short-term risks associated with urban development in proximity to existing oil and gas infrastructure such as sour gas infrastructure, oil wells, abandoned wells, pipelines, and other oil and gas facilities. The Risk Assessment will identify and document actual and perceived risks to human health or the environment, their likelihood, their consequences and any required mitigation. The Approving Authority will consider the Risk Assessment and any associated mitigation strategies prior to approval of an Outline Plan/Land Use Amendment application.

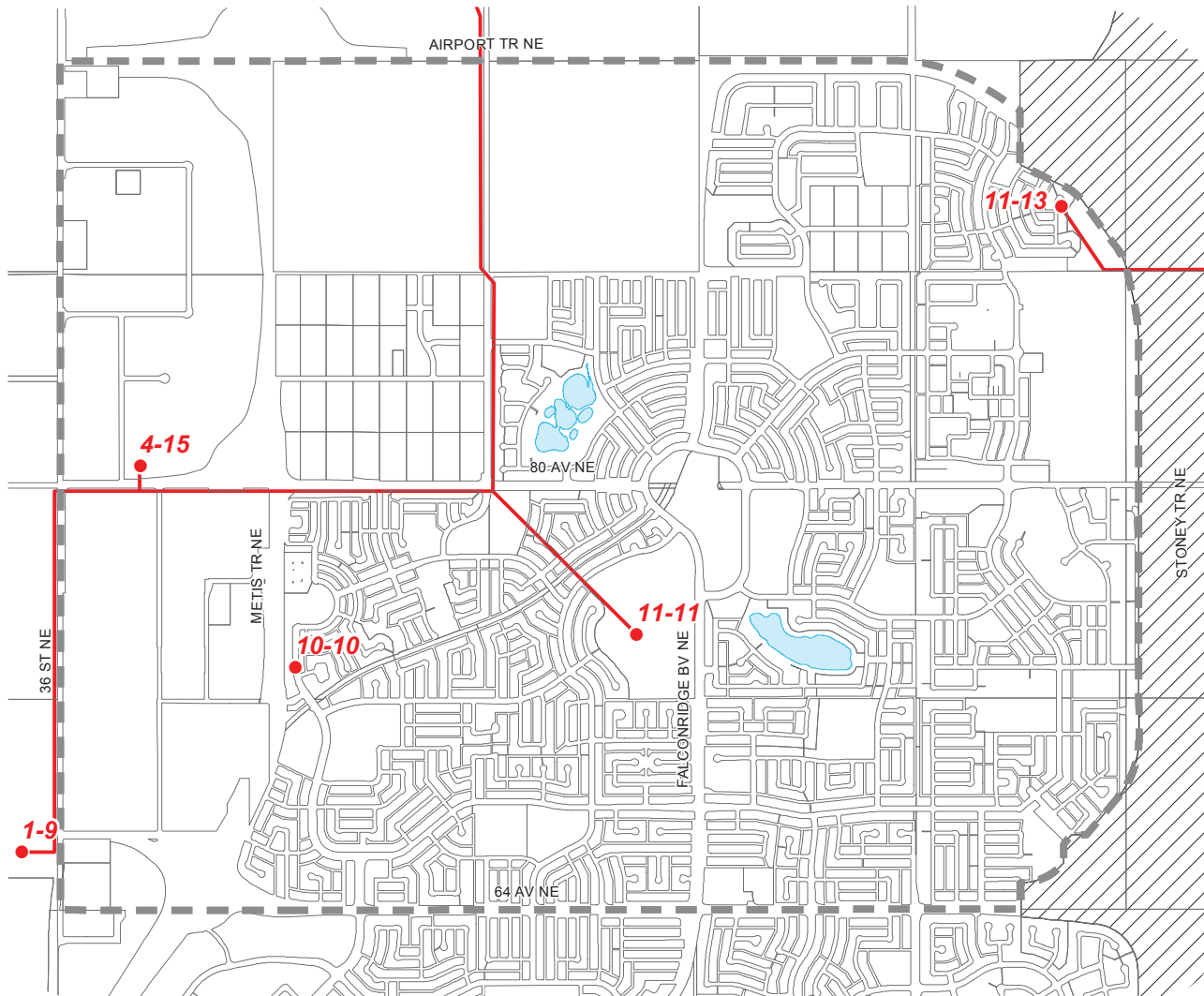
Guidelines

1. Risk Assessment Requirements:
 - a. The Risk Assessment should include, as applicable,
 - i. brief project description,
 - ii. source of risk,
 - iii. existing ERCB setbacks,
 - iv. likelihood of an incident occurring,
 - v. analysis of the consequences of an incident,
 - vi. Emergency Planning Zone area and specific response provisions,
 - vii. proposed risk mitigation measures,
 - viii a risk communication plan,
 - ix. potential nuisance effects, such as odour, lighting, noise, flaring, etc., and
 - x. analysis regarding how the facility will integrate with existing and future developments.

Saddle Ridge Area Structure Plan

Map 11

Sour Gas Constraint Area

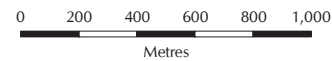


Legend

- City Limits
- Study Area Boundary
- ▨ Transportation/ Utility Corridor
- Sour Gas Well Abandoned
- Abandoned Sour Gas Pipelines

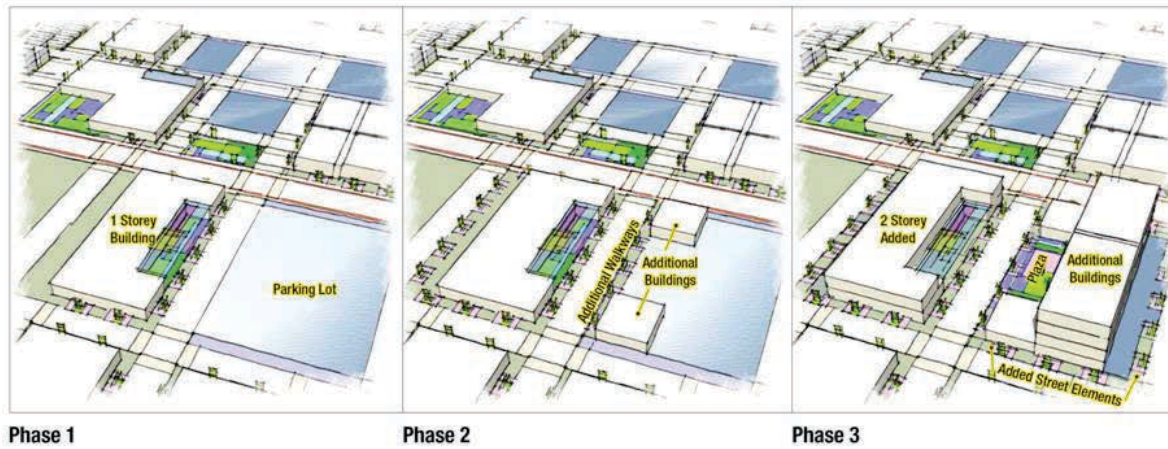
Approved: 3P84
Amended:

This map is conceptual only. No measurements of
distances or areas should be taken from this map.



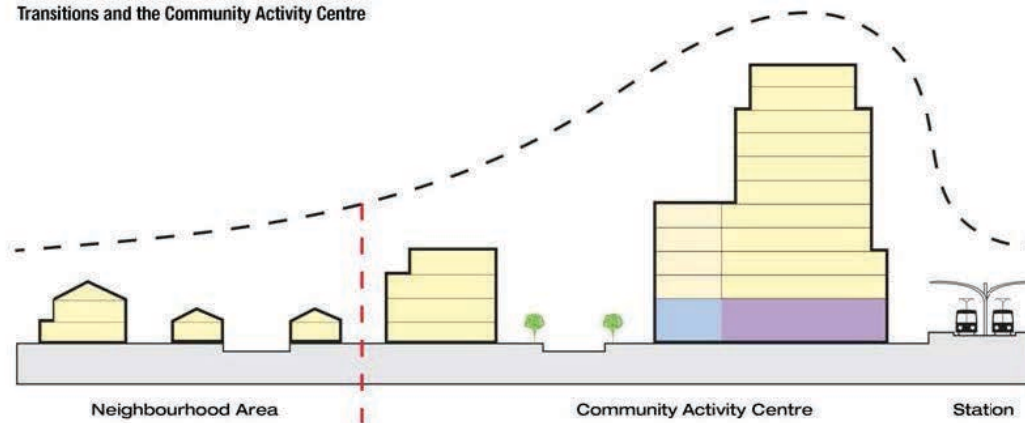
Appendix 3

Infilling Over Time



This figure shows a conceptual infilling pattern over three phases. The three phases conceptually display how development can be designed to enable infilling and intensification over time.

Transitions and the Community Activity Centre



This image shows the transition of use, intensity and scale from the Community Activity Centre and transit station to the adjacent neighbourhoods.

Block-based Network of Interconnected Streets, Walkways and Pathways



This image shows a conceptual layout of a block-based street network. It displays the focus on the eas-west primary retail street with buildings fronting onto it. The secondary retail streets run north-south to support the primary retail street. Walkways and pathways run along streets and through sites in a convenient and legible pattern to encourage pedestrian movement.