



Legacy Ridge Stage III Outline Plan and Land Use Redesignation

Melcor Developments Ltd.
May 2009

Approved by the Municipal Planning Commission
September 15, 2009

Amended by the Municipal Planning Commission April 22, 2014
Adjusted by Development Review Committee February 17, 2015

MELCOR
DEVELOPMENTS LTD.

 **Stantec**



Stantec Consulting Ltd.
290 - 220 4th Street S, Lethbridge AB T1J 4J7

November 14, 2014
File: 112938630

Attention: Maureen Gaehring, Community Planning Manager

City of Lethbridge
910-4th Avenue South
Lethbridge, Alberta T1J 0P6

Dear Maureen,

Reference: Legacy Ridge Stage 3 Land Use Amendment

On behalf of our client, Melcor Developments Ltd., we are submitting the attached land use amendment for Legacy Ridge Stage 3 as identified on Figure 1.0. The amendment is required due to changing residential market conditions in Lethbridge.

For your information, we have provided an assessment of the net change in unit density for the balance of Legacy Ridge Stage 3. Our calculations indicate that there will be a slight decrease in both the number of units and ultimate population. As such, there are no negative impacts to planned infrastructure and downstream capacities.

As requested, Stantec has provided revised master servicing concepts for Sanitary Sewer, Water Distribution and Storm Water Management based on the new roadway layout. We trust that our application meets with your approval and look forward to attending the *First Reading* on December 8, 2014.

Regards,

STANTEC CONSULTING LTD.

A handwritten signature in blue ink, appearing to read 'Brad Schmidtke'.

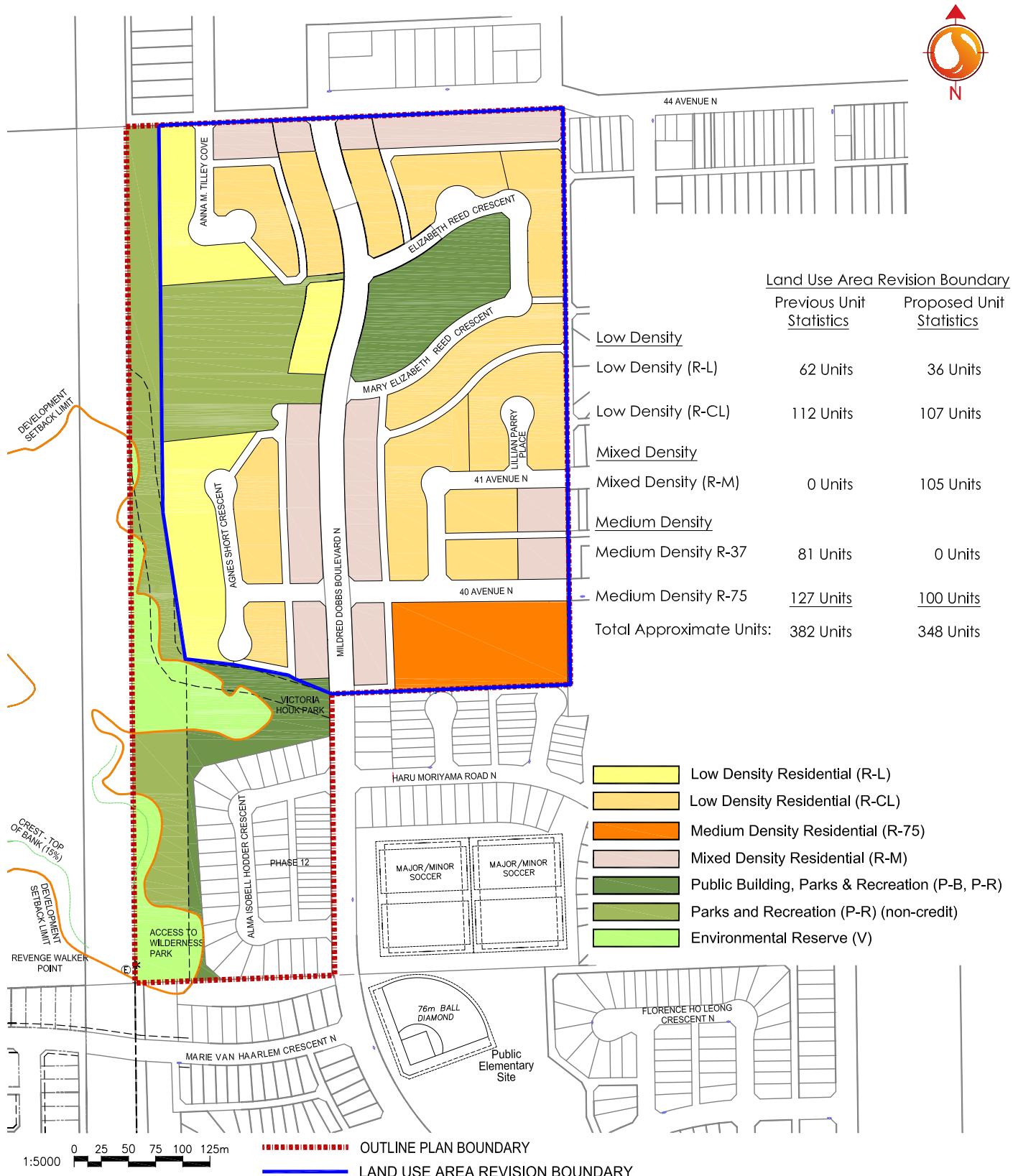
Brad Schmidtke, P.Tech.(Eng.)
Associate
Phone: (403) 329-3344 Ext. 242
Fax:
Brad.Schmidtke@stantec.com

Attachment: Figure 1.0 Proposed Land Use Designation and Master Servicing Figures

c. Tyson Boylan, Neil Johnson, Perry Neufeld, Sheri Bourgoin

sb \\cd1207-f05\work_group\1129\active\112938630\correspondence\letters\let_gaehring_luamendment_20141114.docx

Design with community in mind





LEGACY RIDGE STAGE III - Master Servicing | FIGURE 1.0

Sanitary Sewer Collection

MELCOR
DEVELOPMENTS LTD.

PREPARED FOR:

CONCEPT ONLY: THIS DRAWING IS AN ARTISTIC REPRESENTATION OF DESIGNS PREPARED BY STANTEC CONSULTING LTD. IT IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE. COPYRIGHT RESERVED.



LEGACY RIDGE STAGE III - Master Servicing | FIGURE 2.0

Storm Water Management

MELCOR
DEVELOPMENTS LTD.

PREPARED FOR:

CONCEPT ONLY: THIS DRAWING IS AN ARTISTIC REPRESENTATION OF DESIGNS PREPARED BY STANTEC CONSULTING LTD. IT IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE. COPYRIGHT RESERVED.



LEGACY RIDGE STAGE III - Master Servicing | FIGURE 3.0

Water Distribution Network

MELCOR
DEVELOPMENTS LTD.

PREPARED FOR:

CONCEPT ONLY: THIS DRAWING IS AN ARTISTIC REPRESENTATION OF DESIGNS PREPARED BY STANTEC CONSULTING LTD. IT IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE. COPYRIGHT RESERVED.



Legacy Ridge Stage III
Outline Plan and Land Use Redesignation
Melcor Developments Ltd.

LEGACY RIDGE STAGE III OUTLINE PLAN AND LAND USE REDSIGNATION

May, 2009

Prepared for
MELCOR DEVELOPMENTS LTD.
Lethbridge, Alberta

Prepared by
STANTEC CONSULTING LTD.
Lethbridge, Alberta

Project No. 112938611



Table of Contents

TABLE OF CONTENTS	1
1 INTRODUCTION.....	1
2 PURPOSE	2
2.1 OVERVIEW OF LAND USES.....	3
3 LOCATION AND AREA.....	4
3.1 LOCATION.....	4
3.2 TOPOGRAPHY	4
3.3 EXISTING LAND USE	4
4 LAND OWNERSHIP.....	5
5 PLANNING CONTEXT.....	6
5.1 HARDIEVILLE/LEGACY RIDGE/UPLANDS AREA STRUCTURE PLAN.....	6
6 OVERVIEW OF PROPOSED LAND USES.....	7
6.1 RESIDENTIAL	7
6.1.1 Low Density Residential District (R-L).....	7
6.1.2 Comprehensively Planned Low Density Residential District (R-CL) .	7
6.1.3 Medium Density Residential (R-37).....	7
6.1.4 Medium Density Residential (R-75).....	7
6.1.5 Anticipated Density	8
6.2 OPEN SPACE	8
6.2.1 Reserve Dedication.....	8
6.2.2 Valley District (V)	8
6.2.3 Park and Recreation (P-R)	8



7	MUNICIPAL RESERVE	9
7.1	GALT MINE NO. 6 INTERPRETIVE PARK.....	9
8	ARCHITECTURAL STANDARDS.....	10
9	LANDSCAPING	11
9.1	ENTRANCE FEATURES.....	11
9.2	ENTRY DRIVE	11
9.3	OPEN SPACE GUIDELINES	11
10	GEOTECHNICAL EVALUATION.....	12
10.1	RIVER VALLEY SETBACK.....	14
11	ENVIRONMENTAL SITE ASSESSMENT	15
12	HISTORICAL RESOURCES	17
12.1	HISTORICAL RESOURCES OVERVIEW	17
12.2	HISTORICAL RESOURCE IMPACT ASSESSMENT	17
12.3	FURTHER SITE INVESTIGATION.....	18
12.4	ALBERTA CULTURE & COMMUNITY SPIRIT CLEARANCE.....	18
13	TRANSPORTATION	19
13.1	TRANSPORTATION IMPACT ASSESSMENT.....	19
14	TRANSIT AND MAILBOX SERVICES	20
14.1	TRANSIT.....	20
14.2	COMMUNITY MAILBOX LOCATIONS	20
15	SITE SERVICING.....	21
15.1	SANITARY SERVICING.....	21
15.2	STORMWATER SERVICING	21
15.3	WATER SERVICING	21
16	PHASING POTENTIAL	22



17	FIRE PROTECTION	23
18	ENVIRONMENTAL SUSTAINABILITY	24
19	CONCLUSION.....	25
APPENDIX A	Certificate of Title	
APPENDIX B	Galt Mine No. 6 Historical Background	
APPENDIX C	Geotechnical Evaluations	
APPENDIX D	Environmental Site Assessment	
APPENDIX E	Risk Management Plan	
APPENDIX F	Historical Resources Impact Assessment	
APPENDIX G	Transportation Impact Assessment	
APPENDIX H	Outline Plan Servicing Design Brief	



1

INTRODUCTION

The City of Lethbridge is experiencing significant growth in its northern sector, a trend that is expected to continue in the foreseeable future. In response to the lifestyle opportunities this area of the city offers, Melcor Developments Ltd. ("Melcor") has provided a comprehensively designed plan for the third and final stage in Legacy Ridge.

The Legacy Ridge Stage III Outline Plan provides a logical extension of development from the approved Legacy Ridge Stage I and II Outline Plans, while providing an appropriate interface with the existing community of Hardievile. The design of the Outline Plan conforms to the policies and intent of the Hardievile/Legacy Ridge/Uplands Area Structure Plan.

To accommodate a variety of market sectors and lifestyles, a mixture of housing alternatives is offered within the Outline Plan area. The community is primarily low-density single-detached housing, and includes one medium-density multi-family site.

A multi-functional open space system exists within the surrounding community and has been incorporated into the design of Legacy Ridge. Linkages and pathways orient activities towards the natural amenities of the Oldman River Valley Escarpment. An interpretive park has also been integrated into the Outline Plan design to showcase remaining portions of mine site remnants. The Galt Mine No. 6 Interpretive Park will be the cornerstone of Legacy Ridge Stage III.



2 PURPOSE

The subject applications, on behalf of Melcor Developments Ltd., are for Outline Plan and Land Use Redesignation approval by the Municipal Planning Commission and Lethbridge City Council.

The Legacy Ridge Stage III Outline Plan and Land Use Redesignation applications encompass 26.1 ha \pm (64.6 ac \pm) and provide a logical extension of residential development in the northern sector of the City of Lethbridge. The design is in accordance with the policies and intent of the Hardievile/Legacy Ridge/Uplands Area Structure Plan.

The City of Lethbridge and Melcor Developments Ltd. in conjunction with the local residents have worked together to create the community of Legacy Ridge. A primary goal while designing Legacy Ridge was to acknowledge, respect, and commemorate the positive contributions prominent women in Lethbridge have made to the City's quality of life. The streets and parks in the Legacy Ridge Community are named after women who played a significant role in the City's history.

The proposed Outline Plan and Land Use Redesignation applications respond to both the current and future requirements for the housing sector of the City by:

- Accelerating urban development in North Lethbridge to meet the current demand for residential housing;
- Creating a seamless transition between Hardievile and Legacy Ridge;
- Continuing a logical extension of the transportation network to facilitate efficient internal traffic movements;
- Providing convenient access to transit routes;
- Providing a wide range of housing opportunities to meet the needs of multiple market sectors that are compatible with existing residential development;
- Providing a strategically located multi-family residential development;
- Commemorating and recognizing the significant contributions of women to the history of Lethbridge through the naming of streets and parks;
- Integrating and continuing the park and open space system, taking advantage of the natural amenities within and surrounding the Outline Plan area, creating passive and active recreational opportunities; and
- Utilizing and preserving the coal mining heritage of Lethbridge by creating an interactive interpretive park.



2.1 OVERVIEW OF LAND USES

The Legacy Ridge Stage III Outline Plan and Land Use Redesignation boundary encompasses a total of 26.1 ha± (64.6 ac±) to accommodate the following Land Uses:

Low Density Residential (R-L)	4.1 ha± (10.0 ac±)
Comprehensively Planned Low Density Residential (R-CL)	5.6 ha± (13.8 ac±)
Medium Density Residential (R-37)	2.2 ha± (5.4 ac±)
Medium Density Residential (R-75)	1.7 ha± (4.3 ac±)
Parks and Recreation (P-R)	2.2 ha± (5.4 ac±)
Parks and Recreation (P-R) – (non-credit)	3.5 ha± (8.7 ac±)
Environmental Reserve (V)	1.5 ha± (3.8 ac±)
Total Area	20.8ha± (51.5ac±)

<u>Land Use</u>	<u>Total Area</u>	<u>Estimated Units</u>	<u>Estimated Household Size</u>	<u>Projected Pop.</u>
Residential				
Low Density (R-L)	4.05 ha (10.0 ac)	79	2.9	229
Low Density (R-CL)	5.59 ha (13.81 ac)	136	2.9	394
Medium Density R-37	2.20 ha (5.43 ac)	80	1.9	152
Medium Density R-75	<u>1.73 ha (4.29 ac)</u>	130	1.9	247
Total	13.57 ha (33.53 ac)	425		1022
Open Space Areas				
Public, Parks & Rec. (P-B, P-R)	2.19 ha (5.42 ac)			
Parks & Rec. (P-R) non-credit	3.54 ha (8.75 ac)			
Environmental Reserve (V)	<u>1.53 ha (3.79 ac)</u>			
Total	7.26 ha (17.96 ac)			



3

LOCATION AND AREA

3.1 LOCATION

The Legacy Ridge Stage III Outline Plan area falls within the Hardievile/Legacy Ridge/Uplands Area Structure Plan boundary, which was approved by Lethbridge City Council in 2002.

The subject lands are bound to the north by 44th Avenue, to the east by the community of Hardievile and Legacy Ridge Stage II Outline Plan, to the south by the Legacy Ridge Stage I Outline Plan, and to the west by the Oldman River Valley escarpment.

3.2 TOPOGRAPHY

The topography of the lands is predominantly gently undulating prairie typical of the Lethbridge region. The lands are adjacent to the Oldman River Valley escarpment providing natural amenities and scenic vistas.

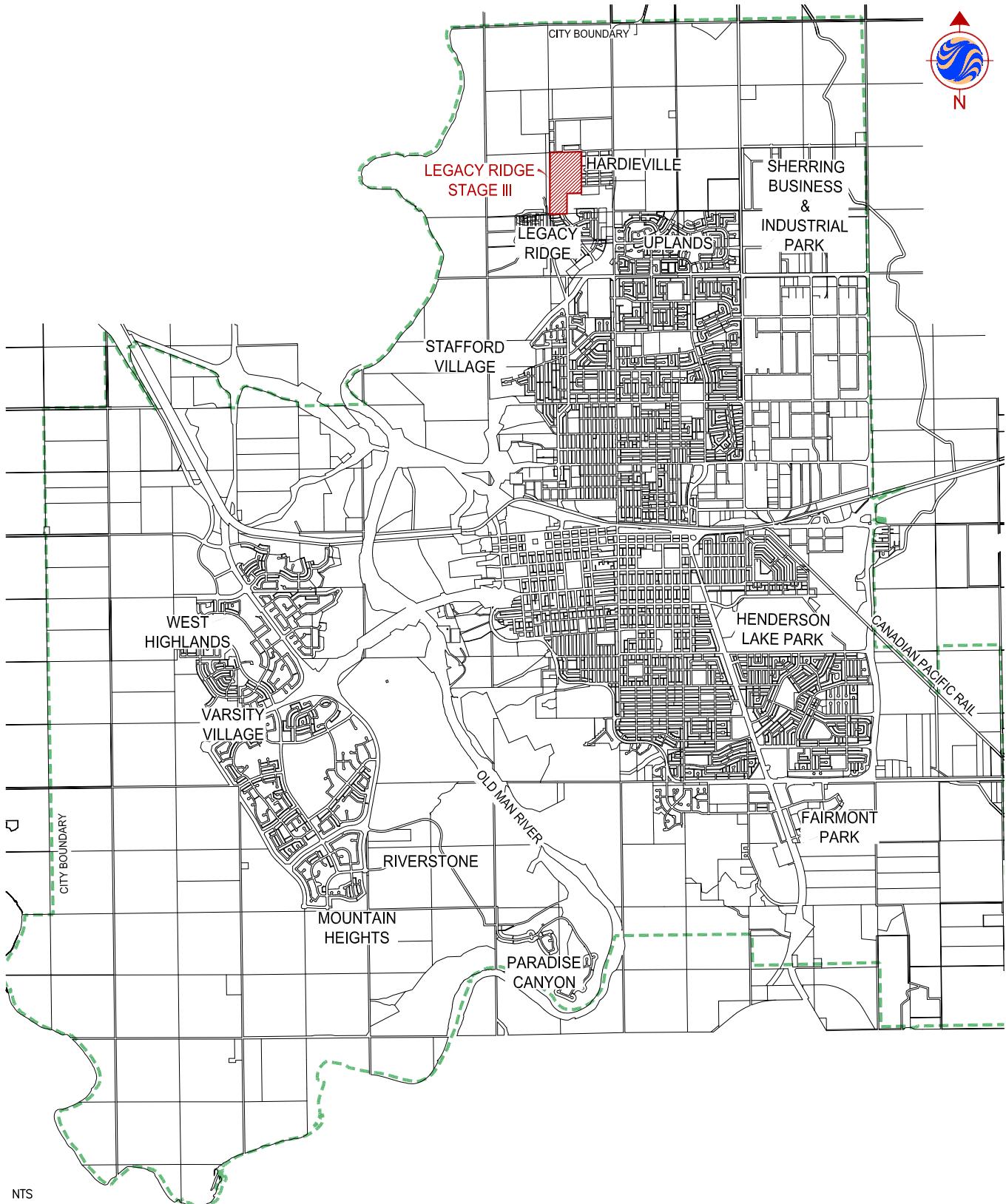
3.3 EXISTING LAND USE

The lands are primarily designated Urban Reserve (UR), with two Valley (V) designations located in the southern portion of the plan area. The lands are bounded to the north by Urban Reserve (UR), Medium Density Residential (R-37), and Low Density Residential (R-L); to the east by Comprehensively Planned Low Density Residential (R-CL), Medium Density (R-37, R-75) and a Public Building District (P-B), to the south by Park and Recreation (P-R) and Low Density Residential (R-L); and to the west by Valley (V) and Urban Reserve (UR) districts.

Figure 3.1, Location Plan, illustrates the location of Legacy Ridge Stage III in a citywide context.

Figure 3.2, Aerial Photo, indicates the subject lands in relation to existing and future development in the north sector of the City of Lethbridge.

Figure 3.3, Existing Land Use, illustrates the current Land Use within the surrounding the plan area.



Legend

- CITY OF LETHBRIDGE LIMITS
- LEGACY RIDGE STAGE III

Client/Project
**MELCOR DEVELOPMENTS LTD.
 LEGACY RIDGE STAGE III
 OUTLINE PLAN**

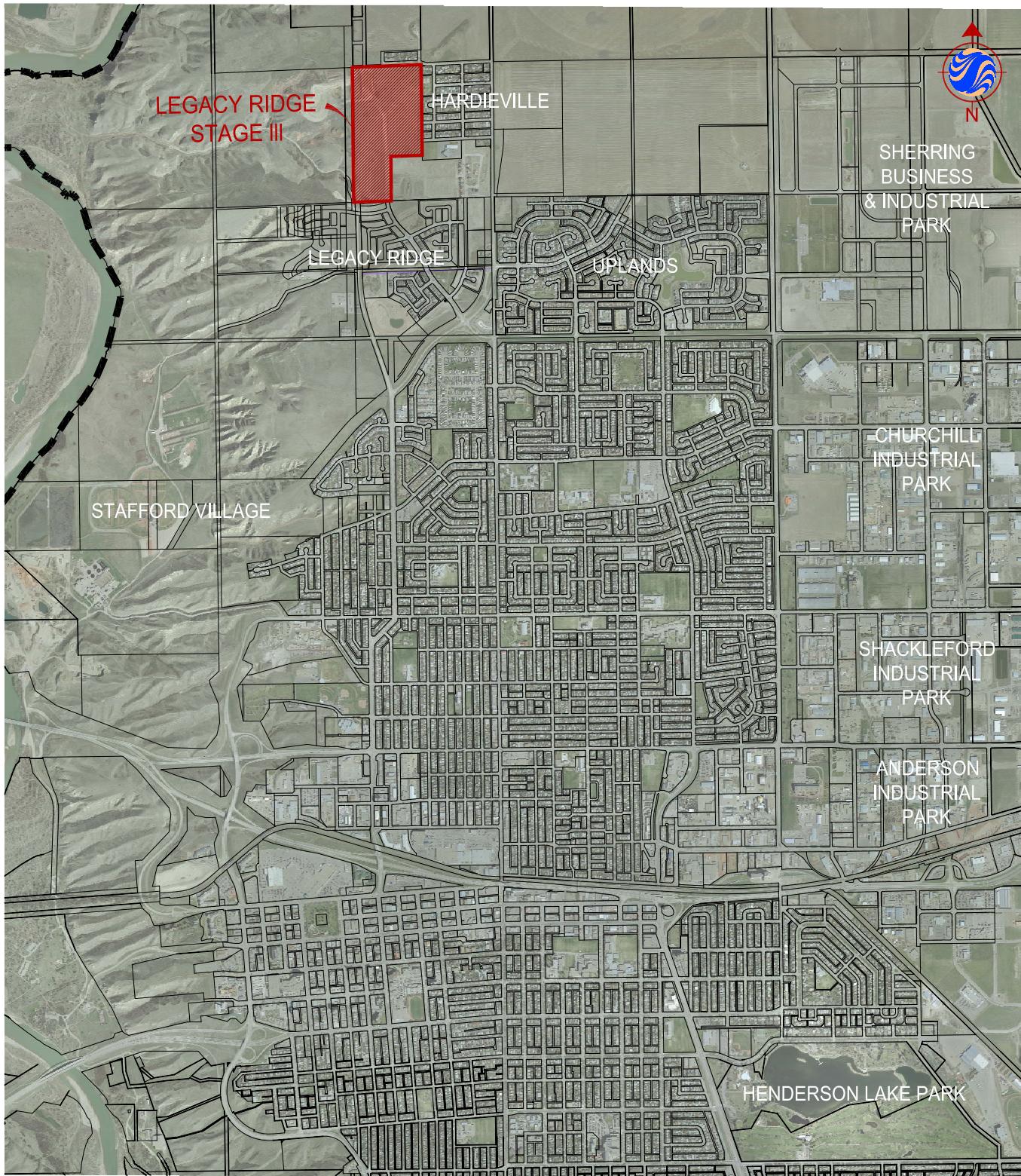
Figure No.
3.1

Title
Location Plan



MELCOR
DEVELOPMENTS LTD.

Stantec



NTS

Legend

- CITY OF LETHBRIDGE LIMITS
- LEGACY RIDGE STAGE III

Client/Project

MELCOR DEVELOPMENTS LTD.
LEGACY RIDGE STAGE III
OUTLINE PLAN

Figure No.

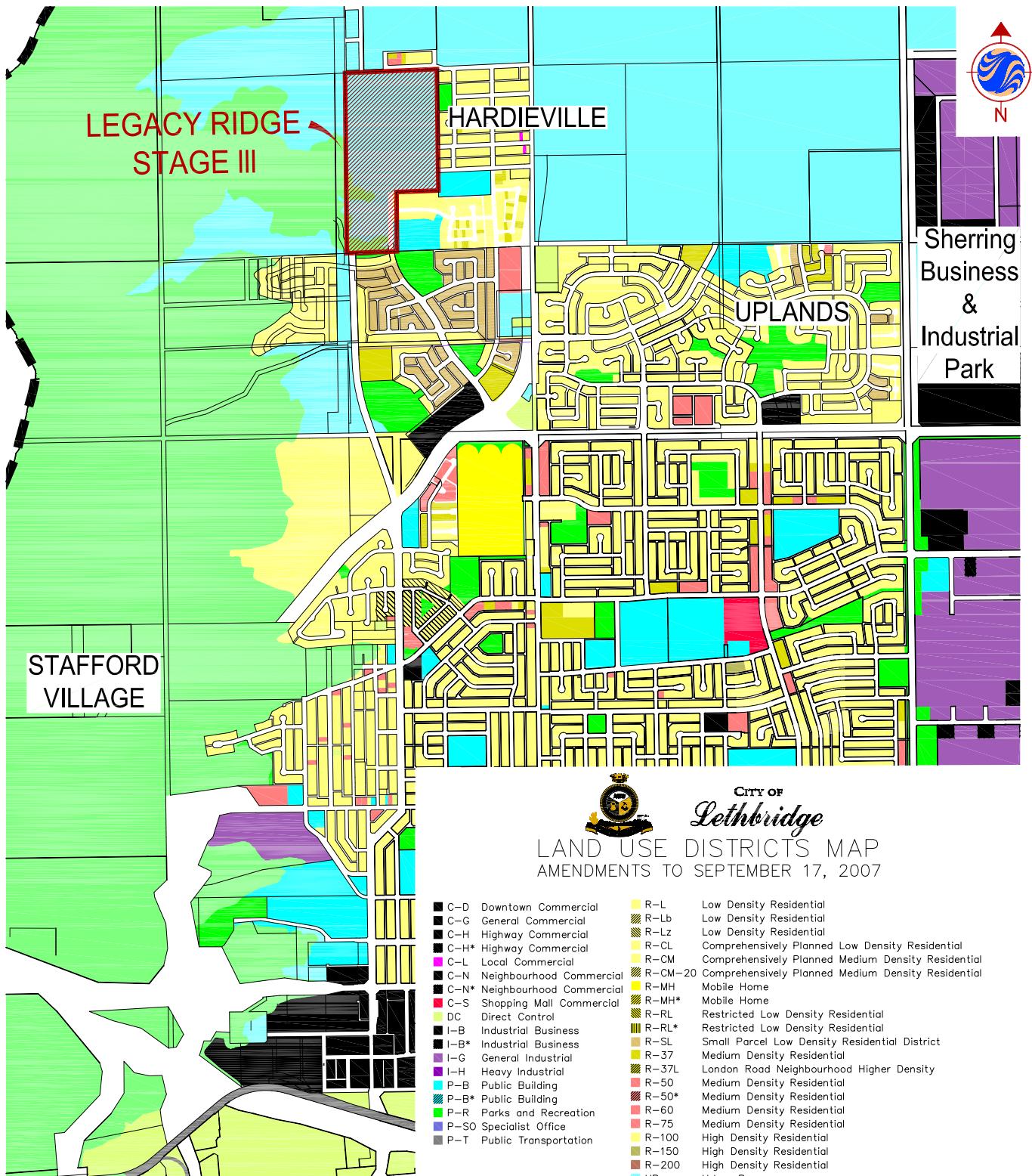
3.2

Title

Aerial Photo



MELCOR
DEVELOPMENTS LTD.



NTS

Legend

- CITY OF LETHBRIDGE LIMITS**
- LEGACY RIDGE STAGE III**

Client/Project

MELCOR DEVELOPMENTS LTD.
LEGACY RIDGE STAGE III
OUTLINE PLAN

Figure No.

3.3

Title

Existing Land Use



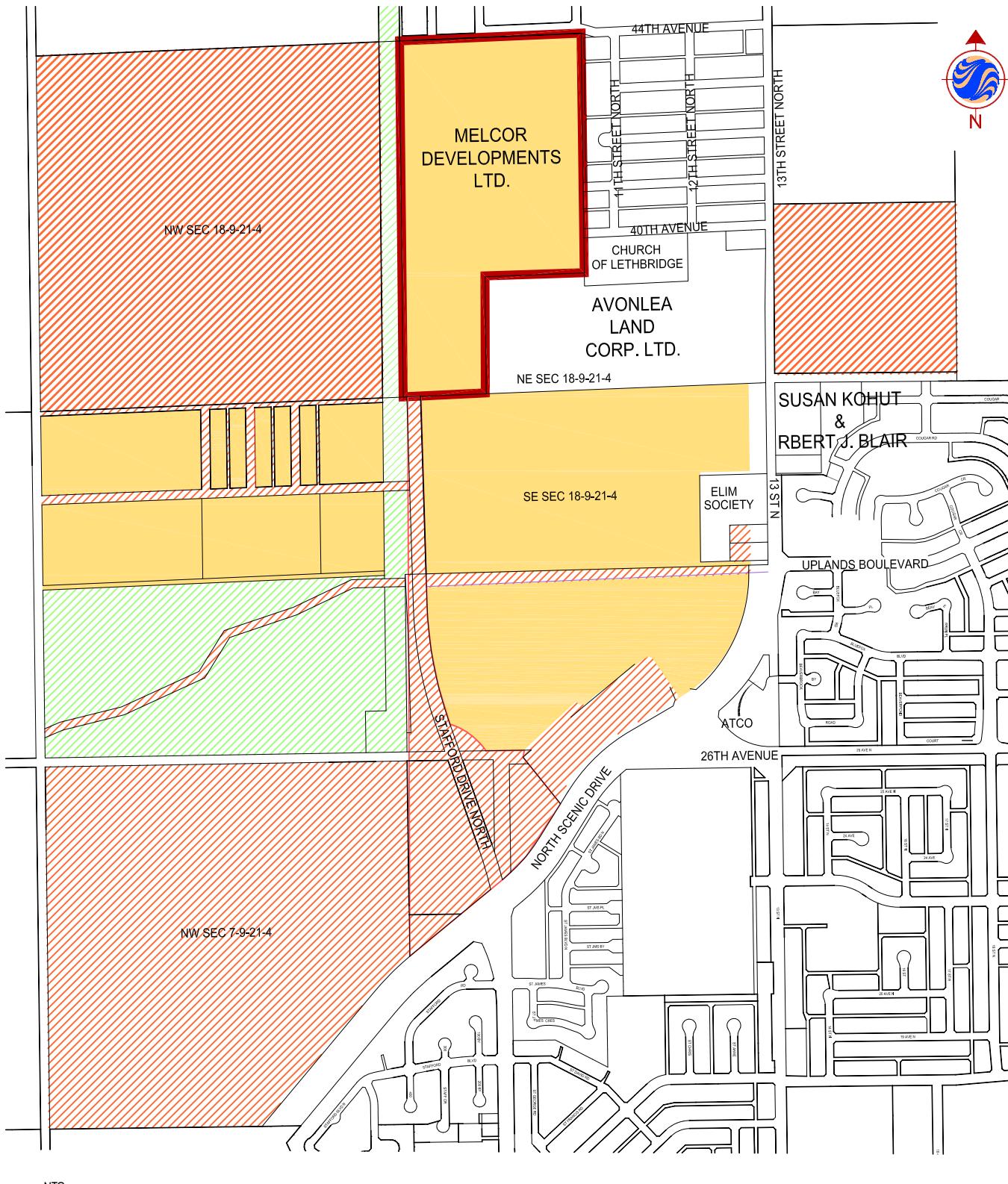


4

LAND OWNERSHIP

Melcor Development Ltd. is the registered owner for all lands within the plan area. The Certificate of Title has been provided in **Appendix A, Certificate of Title**.

Figure 4.1, Land Ownership, exhibits the registered ownership of the subject lands and surrounding areas.



NTS

Legend

- LEGACY RIDGE STAGE III BOUNDARY
- MELCOR DEVELOPMENTS LTD.
98.4HA ± (243.3AC ±)
- CITY OF LETHBRIDGE
149.5HA ± (369.5AC ±)
- ALTALINK MANAGEMENT LTD.
36.4HA ± (90.0AC ±)

Client/Project

MELCOR DEVELOPMENTS LTD.
LEGACY RIDGE STAGE III
OUTLINE PLAN

Figure No.

4.1

Title

Land Ownership

May 2009
112938611



MELCOR
DEVELOPMENTS LTD.



5

PLANNING CONTEXT

All lands included in the Legacy Ridge Stage III Outline Plan are located within the limits of Hardievile/Legacy Ridge/Uplands Area Structure Plan (ASP), which was approved by Lethbridge City Council in 2002. The Area Structure Plan provides an overview of major land uses, transportation networks, scheduled servicing, community facilities and amenities, and the sequence of development for the ASP area.

5.1 HARDIEVILLE/LEGACY RIDGE/UPLANDS AREA STRUCTURE PLAN

The Legacy Ridge Stage III Outline Plan has been prepared in accordance with the policies and objectives outlined in the Hardievile/Legacy Ridge/Uplands Area Structure Plan including:

- Accelerating urban development in North Lethbridge to meet the current demand for residential housing;
- Creating a seamless transition between Hardievile and Legacy Ridge;
- Continuing a logical extension of the transportation network to facilitate efficient internal traffic movements;
- Providing convenient access to transit routes;
- Providing a wide range of housing opportunities to meet the needs of multiple market sectors that are compatible with existing residential development;
- Providing a strategically located multi-family residential development;
- Commemorating and recognizing the significant contributions of women to the history of Lethbridge through the naming of streets and parks;
- Integrating and continuing the park and open space system, taking advantage of the natural amenities within and surrounding the Outline Plan area, creating passive and active recreational opportunities; and
- Utilizing and preserving the coal mining heritage of Lethbridge by creating an interactive interpretive park.



6

OVERVIEW OF PROPOSED LAND USES

The Legacy Ridge Stage III Outline Plan incorporates a variety of Residential Land Uses to provide a wide range of housing opportunities interspersed with open space districts to create an attractive and vibrant community.

6.1 RESIDENTIAL

Four Residential Land Use Districts are proposed within the Legacy Ridge Stage III Outline Plan area which accommodate low-density residential units with and without lanes and medium-density multi-family units.

The Land Use Districts located adjacent to Hardieville are consistent with existing districts in order to create a seamless transition between future residential development and existing residential units.

6.1.1 Low Density Residential District (R-L)

In order to facilitate walkout basements for lots backing directly onto natural open space amenities, 4.1 ha \pm (10.0 ac \pm) has been dedicated as Low Density Residential (R-L) along the valley escarpment. It is anticipated that that 79 units with a projected lot width of 13.0 metres will be accommodated within the Outline Plan area.

6.1.2 Comprehensively Planned Low Density Residential District (R-CL)

The Legacy Ridge Stage III Outline Plan contains 5.6 ha \pm (13.8 ac \pm) of Comprehensively Planned Low Density Residential (R-CL) land, located throughout the plan. It is anticipated that 136 units with an average lot width of 11 metres will be accommodated within the Outline Plan area.

6.1.3 Medium Density Residential (R-37)

Medium Density Residential (R-37) land encompasses 2.2 ha \pm (5.4 ac \pm) in the Outline Plan area. Based on 37 dwelling units per hectare, these 5 sites are anticipated to accommodate 80 units \pm .

6.1.4 Medium Density Residential (R-75)

One multi-family site has been incorporated into the Outline Plan area. 1.7 ha \pm (4.3 ac \pm) of land has been designated Medium Density Residential (R-75). The site is anticipated to accommodate 130 units \pm based on 75 dwelling units per hectare.



6.1.5 Anticipated Density

Based on the net developable area of 24.6ha, the anticipated density for the Legacy Ridge Stage III Outline Plan area is calculated below:

$$\begin{aligned} & \underline{79+136+80+130=425} \\ & 24.6 \text{ ha} \pm (60.8 \text{ ac} \pm) \\ & = 17.3 \text{ upha} \pm (7.0 \text{ upac} \pm) \end{aligned}$$

The calculable density for Legacy Ridge Stage III is $17.3 \text{ upha} \pm (7.0 \text{ upac} \pm)$. This is consistent with policy objectives to encourage densification in urban areas and provide a range of innovative housing to meet market demands.

Figure 6.1, Proposed Land Use Designations, provides proposed land uses within the Legacy Ridge Stage III Outline Plan boundary.

6.2 OPEN SPACE

6.2.1 Reserve Dedication

The provision of public parks and open space within the Legacy Ridge Stage III Outline Plan represents 8.9% of the net developable land. However, in combination with Stage I areas, MR respects 10.6%, therefore, the reserve dedicated in the Outline Plan conforms with the 10% reserve requirement stipulated by the *Municipal Government Act*.

Legacy Ridge Stage III will be the final stage of Legacy Ridge. A summary of the total reserve dedication for all of Legacy Ridge is as follows:

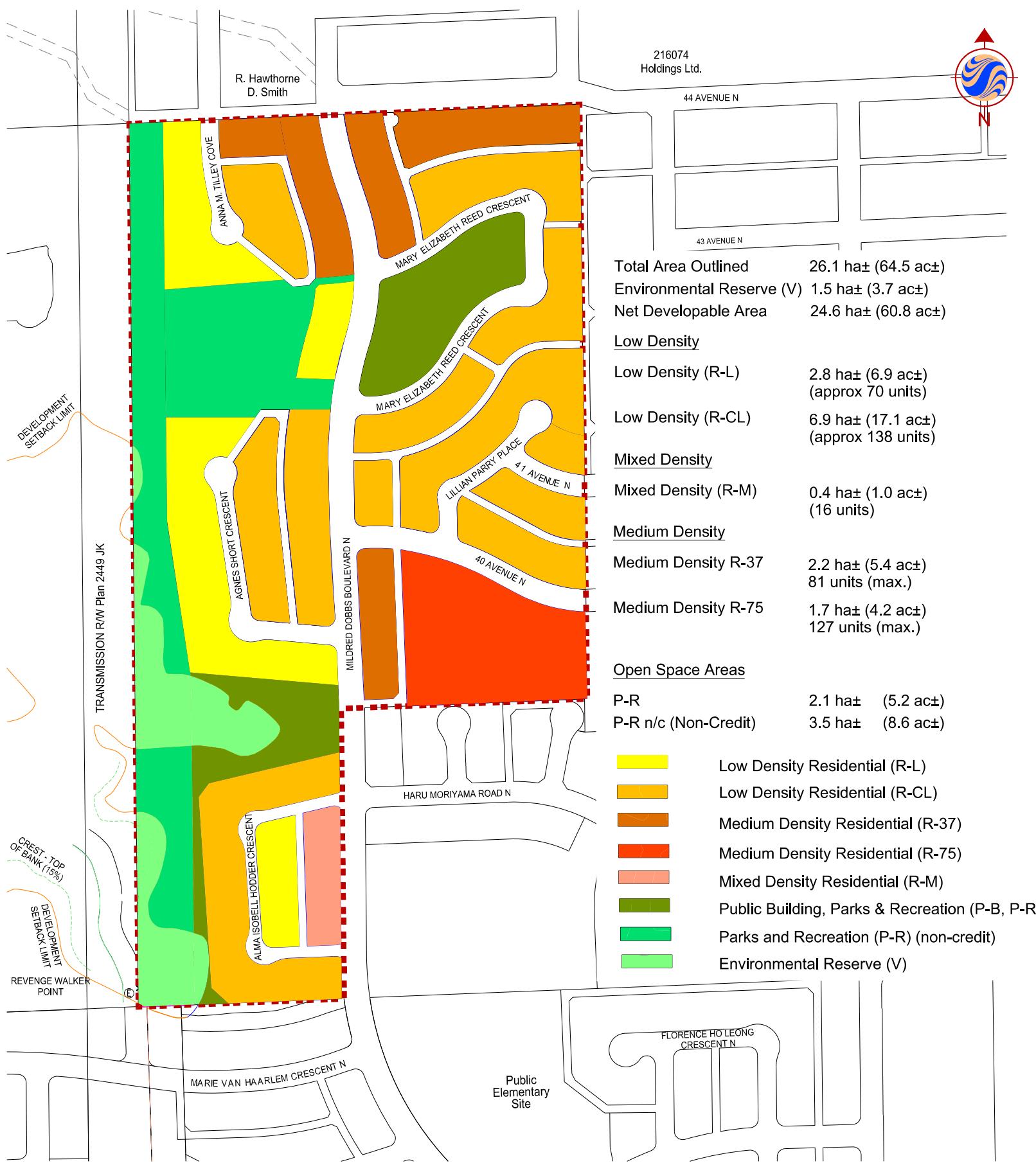
Stage	Net Developable Area	Reserve	Percent of Net Developable Area
Legacy Ridge Stage I	63.9ha \pm (157.8ac \pm)	7.18ha \pm (17.7ac \pm)	11.2%
Legacy Ridge Stage III	24.6ha \pm (60.8ac \pm)	2.19ha \pm (5.4ac \pm)	8.9%
Total	88.50ha\pm (218.7ac\pm)	9.37ha\pm (23.2ac\pm)	10.6%

6.2.2 Valley District (V)

The Legacy Ridge Stage III Outline Plan is located adjacent to the Oldman River Valley Escarpment. The lands along the western boundary of the plan area are currently dedicated as Valley (V) to protect the natural environment and amenities provided by the escarpment.

6.2.3 Park and Recreation (P-R)

An area of $2.2 \text{ ha} \pm (5.4 \text{ ac} \pm)$ has been provided for Park and Recreation District (P-R) in the form of an interpretive park dedicated to mining history within Lethbridge and an entrance way for the regional pathway system along the Oldman River Valley Escarpment. The parks have been strategically located to maximize the active and passive recreational opportunities of city and surrounding area residents.



*Amended by MPC April 22, 2014



7

MUNICIPAL RESERVE

A strong and vibrant open space system already exists within the previous stages of Legacy Ridge. The third stage of Legacy Ridge will integrate the existing system into the Outline Plan design, connecting future residents to the larger regional network.

Residents of Legacy Ridge Stage III will enjoy a variety of built and natural open spaces that are located, sized and configured as a highly accessible and functional linked system to meet the active and passive recreational needs of community residents of all ages, interests and abilities.

In keeping with the theme of Legacy Ridge, interpretive nodes will be strategically placed throughout the open space network to commemorate prominent women throughout the City's history. A cornerstone of the Legacy Ridge Stage III Outline Plan will be the integration of mine site remnants into the community design as an interpretive park.

7.1 GALT MINE NO. 6 INTERPRETIVE PARK

Coal mining has played a prominent role in the growth and development of Lethbridge. Legacy Ridge Stage III is the home of Galt Mine No. 6, a coal mine that was active between November, 1908 and March 14th, 1935. Although the mine was closed over 70 years ago, some structures remain, while the foundations of other structures are clearly visible. Melcor acknowledges the historical significance of this site and affirms the opportunity to contribute to the preservation of Lethbridge history.

Melcor will utilize the opportunity this site provides by creating an interpretive park that commemorates the Galt Mine No. 6 site. The park will be designed around the three most prominent structures left on the site, the Boiler Hoist base, the Tipple foundation, and the Drift Tunnel. Information highlighting the contribution of each building to various stages of mining will be provided throughout the park.

The Galt Mine No. 6 Interpretive Park will be the cornerstone of Legacy Ridge Stage III, encouraging passive recreational opportunities for Lethbridge residents. The site will become a valuable educational tool by showcasing a visual perspective of the importance of mining to the history of Lethbridge.

An advisory panel will provide resource assistance for referral and review of the park design to verify historical context integrity.

Figure 7.1, Open Space Network, illustrates the prominent neighbourhood and natural parks that connect to the city's bikeway and pathway network.

Appendix B, Galt Mine No. 6 Historical Background, contains the meeting minutes from a question and answer session with two former employees of the Galt Mine No. 6 and corresponding figures.



Legend



MAJOR COMMEMORATIVE NODE
 *Recognizes Groups or Categories of Women Contributing to Lethbridge's Community Development.



COULEE VIEW POINTS

LOCAL PATHWAY

LEGACY RIDGE STAGE III BOUNDARY

PROPOSED CONTOURS

Client/Project

MELCOR DEVELOPMENTS LTD.
LEGACY RIDGE STAGE III
OUTLINE PLAN

Figure No.

7.1

Title

Open Space Network
 May 2009
 112938611



MELCOR
 DEVELOPMENTS LTD.



8

ARCHITECTURAL STANDARDS

The built form of the development will be subject to design guidelines. These guidelines will be initiated and implemented by Melcor Developments Ltd. and will include design guidelines such as:

- Minimum/Maximum building footprints;
- Requirements for attached/detached garages;
- Fencing design and materials;
- Roofing materials;
- Diversity of building design;
- Exterior finish; and
- Landscaping requirements.

The detailed design guidelines will be developed and enforced at the subdivision stage of development.



9

LANDSCAPING

9.1 ENTRANCE FEATURES

Entrance features were incorporated into the first three phases of Legacy Ridge. Landscaped community signage is located at the intersection of North Scenic Drive and Mildred Dobbs Boulevard.

9.2 ENTRY DRIVE

As the main entrance into Legacy Ridge, Mildred Dobbs Boulevard will be continuous throughout all three stages with tree-lined boulevards and medians. The landscaped medians will be irrigated and designed according to the current City of Lethbridge standards. The residents adjacent to Mildred Dobbs Boulevard will be encouraged to irrigate and maintain their own boulevard.

9.3 OPEN SPACE GUIDELINES

In keeping with the City's design standards, the open space will practice principles of sustainability while providing a functional, safe open space that is accessible by all residents of the community.

Victoria Houk Park will be a natural park designed with non-irrigated, dryland natural areas that provide a smooth transition from the urban community to the Oldman River Valley Escarpment. This park will feature an interpretive node to commemorate prominent women in Lethbridge's history.

Jane Stafford Park is a non-credit lineal park complete with a regional multi-use pathway connecting all stages of Legacy Ridge with the other communities of north Lethbridge.

The Galt Mine No. 6 is a neighbourhood park that provides a venue for an interpretive outdoor classroom. This interpretive park will be a fully irrigated and maintained facility.



10 GEOTECHNICAL EVALUATION

The following geotechnical evaluations have been prepared as a part of the outline plan process:

- Geotechnical Evaluation, L12101020, by EBA, dated April, 2007
- Supplemental Geotechnical Evaluation of Mine Waste, by EBA, dated May 18, 2007
- Supplementary Geotechnical Commentary, Development Setback Limits and Drainage Channel Infilling, by EBA, dated December 7, 2007

Key findings from the geotechnical analyses have been respected in the development plan for this plan area are summarized below:

■ **Geotechnical Evaluation, L12101020, by EBA, dated April, 2007**

The object of this evaluation was to determine general subsurface conditions of the proposed development area and associated recommendations for residential design and construction in Legacy Ridge Stage III.

This property is known to have at least two underground mining shafts from the workings of Galt Mine No. 6 located within the northeast area of the property. The exact location of these shafts has been determined and an appropriate setback distance calculated. A Risk Management Plan has been completed and can be reviewed in Appendix E. Implementation of this Plan will ensure the removal of mine waste from ground surface and encapsulating of the waste within a containment area.

A review of historic and aerial photos show no signs of instability. With the exception of localized subsidence around the two mine shafts, no significant evidence of subsidence within the project limits has been recorded.

Much of the site's topsoil has been partially stripped historically and therefore geotechnical monitoring is recommended to reduce over stripping volumes during the disposal of mine waste materials.

Significant groundwater concerns are not expected for this development and it is understood that any seepage encountered could be easily handled by sump pumps.



It is not anticipated that the proposed development area would be adversely affected by the presence of underground mine workings. However, due to the possibility of tension cracking of footings, a caveat registered on individual properties within a 50m radius of the mine shafts is recommended, in order to ensure a qualified geotechnical engineer performs an evaluation of the building subgrade prior to construction.

Subdivision and development particulars should be designed and carried out to current City of Lethbridge Infrastructure Services Engineering Standards. Design and construction guidelines were provided for Shallow Foundations; Floor Slabs-on-Grade; Construction Excavations; Backfill Materials and Compaction; Proof-Rolling.

EBA Figure 1.0, Site Plan and Borehole Locations, indicates the mine shaft locations as per the EBA evaluation January, 2001 and provides restricted development zone setbacks for each shaft site.

- **Supplemental Geotechnical Evaluation of Mine Waste, by EBA, dated May 18, 2007**

The intent of this geotechnical supplement, is to better quantify the area of mine waste materials identified during the initial evaluation of this development. To define the outer limits of the waste area, probeholes were drilled around its outer edge. Findings indicated mine waste, comprising predominantly of coal with varying amount of coal ash and red shale extended 0.8m to 6.2m below ground surface. This updated geotechnical report information will be utilized to estimate an approximate total volume of coal waste within the project site limits.

- **Supplementary Geotechnical Commentary, Development Setback Limits and Drainage Channel Infilling, by EBA, dated December 7, 2007**

A review of setback limits at the southwest corner of the Legacy Ridge Stage III subdivision provided recommendations to infill the relatively shallow east end of a tributary drainage channel. The development setback line at this location which has been moved 125m to the west is to be respected.

Overflow water discharging into the drainage canal will be redirected, thus allowing the feasibility of infilling the canal to the development setback line. Adherence to this setback requirement will allow consideration of the residential development and proposed street alignment.

In order to reduce foundation performance issues, it is recommended to allow the fill to consolidate for a minimum of one year prior to residential foundation construction. It is also recommended that risk notification be registered by caveat on affected lot titles, requiring an evaluation of subgrades prior to house construction by a qualified geotechnical engineer.

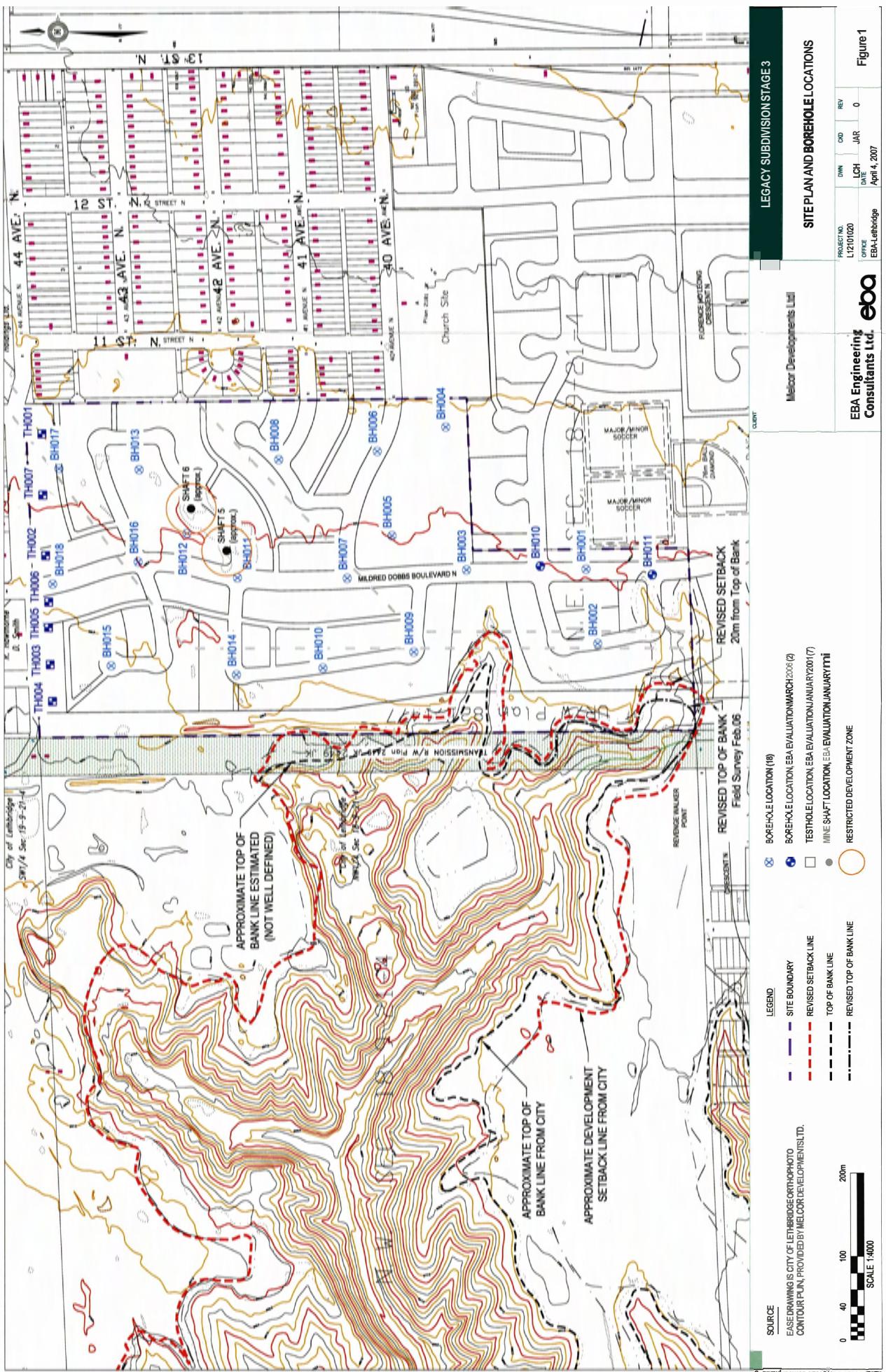
Appendix C, Geotechnical Evaluations, contains the three above mentioned documents in their entirety.



Legacy Ridge Stage III
Outline Plan and Land Use Redesignation
Melcor Developments Ltd.

10.1 RIVER VALLEY SETBACK

The Legacy Ridge Stage III Outline Plan and westerly development boundary respects the 15% Crest Line (top of bank), the Development Setback line and Altered Crest line reestablished by AMEC Consulting with their setback policy review of the City River Valley escarpment.





1 1

ENVIRONMENTAL SITE ASSESSMENT

The following environmental site assessment has been prepared as a part of the outline plan process:

- Phase II Environmental Site Assessment, NE1/4-18-9-21-W4M, LS22101045, by EBA, dated July, 2007

At the initial commencement of the environmental review, it became apparent that a Phase II Environmental Site Assessment was required and as a result the Phase I Assessment was cancelled.

Key findings from this Environmental Site Assessment (ESA) that have been respected in the development plan are summarized below:

- This study assessed soil and groundwater conditions to address on-site concerns identified during the first phase of the ESA.
- Target and non-target sampling in the vicinity of the former coal mine identified soil quality as a result of historic site operations and other areas of concern not readily evident through historical records or previous investigations.
- Based on residential guidelines used in the reference criteria selection, the former historic underground Galt Mine No. 6 operations and associated fill material present on the site demonstrated potential concerns of BTEX and PAH exceedances in soil and groundwater samples. The geotechnical investigations indicate a potential exists for more significant impacts. In order to eliminate this risk, a Risk Management Plan has been prepared to define a plan for removing these materials from house construction zones prior to subdivision development.
- Therefore, in addition to geotechnical recommendations provided by EBA, it is recommended additional remediation and/or source control would be necessary in the pregrading of the site in order to accommodate residential land at this site. These requirements are defined in the Risk Management Plan.

Appendix D, **Environmental Site Assessment**, contains the above noted document in its entirety.



- Risk Management Plan

As follow-up to the Phase II Environmental Site Assessment, a Risk Management Plan (RMP) has been prepared to address all concerns raised in the previous study during the construction of the community. This identifies all measures and requirements to ensure that the site is developed in a way that addresses all identified risks.

A recommendation of the Phase II ESA was to conduct a Risk Management Plan to protect the public from the potential hazards of coal, coal ash and shale. A Risk Management Plan completed by EBA was accepted by the City of Lethbridge in February, 2009. Since this mining "waste" is a potential issue for mainly direct contact, the RMP includes disposal at an approved landfill or encapsulation. Alberta Environment approved these methods for other former mine sites in the Lethbridge area.

The RMP for this site also addresses the potential receptors, pathways and contaminants of concern, provides a method (like encapsulation) to minimize concerns, and develops a mitigation and monitoring strategy that suits both the client and the development.

The RMP further outlines management strategies addressing mine shafts characteristics; development setbacks; building heights, and deep fills. Its approach explores the following monitoring and mitigation specifics:

- Coal mining waste management
- Environmental monitoring requirements
- Environmental remedial action
- Berm development
- Materials management
- Mine shaft containment
- Mine shaft development setback
- Deep fills

It has also been established that a Phase III Environmental Audit and Management Plan is not necessary at this Outline Plan stage.

Appendix E, Risk Management Plan, contains the Risk Management Plan dated April, 2009.



12 HISTORICAL RESOURCES

12.1 HISTORICAL RESOURCES OVERVIEW

In 2004, Stantec Consulting Ltd. was retained by Melcor Developments Ltd. to conduct a Historical Resources Overview (HRO) on the lands within Legacy Ridge. The site of Legacy Ridge Stage III was found to have moderate to high historical resources potential, due mainly to the existence of remains of the Galt Mine No. 6 and associated cottage remains. The Historical Resource Overview recommended that further analysis be conducted on the lands in the form of a Historical Resource Impact Assessment (HRIA), focused primarily on the Galt Mine No. 6 site and associated cottages. An HRIA was also recommended for the southwest portion of the Legacy Ridge Stage III area adjacent to the coulees, where undisturbed ground was anticipated, suggesting potential for intact archaeological sites.

12.2 HISTORICAL RESOURCE IMPACT ASSESSMENT

In 2007, Stantec Consulting Ltd. completed the HRIA for the Legacy Ridge Stage III development in portions of NE-18-9-21 W4M. The HRIA consisted of a review of known historical resources and a field assessment of the lands identified during the HRO as having moderate to high historical resources potential. This involved a pedestrian survey of the subject property, including subsurface shovel testing in the southwest portion of the subject property. No evidence of Precontact archaeological sites was encountered during this survey and testing program.

The HRIA included the detailed recording, photo-documentation and mapping of each of the visible remains of the Galt Mine No. 6 (previously identified Historic Site NL15) and of the depression features and foundation remains associated with six cottages on the mine property south of the mine workings (previously identified Historic Site NL16). These remains were collectively designated archaeological site DkPe-61. Historic maps, photographs and documents from the Galt Archives and Glenbow Archives were studied for information regarding the mine history and remains. Data from Stantec interviews with local informants on the mine was also considered. This review showed that the Galt Mine No. 6 and associated mining camp have high historical significance to both the City of Lethbridge and to the Province of Alberta.

Following the initial survey and testing of the development, interim Historical Resources Act Clearance was applied for to allow environmental Phase II testing to be carried out within site DkPe-61. This interim clearance was granted by Alberta Culture and Community Spirits (ACCS) in October, 2008, conditional upon there being an archaeologist on site to monitor the drilling and backhoe testing (ACCS file no. 4835-04-038).



The monitoring and additional archaeological testing by backhoe did not result in the discovery of additional intact structural remains. Numerous Historic Period artifacts were recovered from some of these tests. Most of these artifacts were recovered from the depressions associated with the cottage remains (cellars and suspected privy pits). The artifacts reflect household activities and most date to the early 1900's.

12.3 FURTHER SITE INVESTIGATION

Based on the results of the HRIA, some monitoring is recommended for site DkPe-61 (Galt Mine No. 6 and the associated cottage remains).

The most prominent of the mine remains – the concrete features associated with the shaft tunnel, a portion of the tipple and the boiler hoist – are planned for inclusion in an Interpretive Park. The remaining mine structures are only fairly to poorly preserved and offer little for public appreciation or interpretation, as they lack above-ground structures and are less visible. These remains will be removed prior to development.

Stantec recommends that pre-impact historical resources mitigative excavations be conducted, and that archaeologists intermittently monitor or inspect the Environmental Phase III clean-up and structure removal. This study will collect, record and mitigate deeply buried historical resources at the mine site. More detailed information regarding the house structures and occupants will also be obtained. This may be supplemented by additional archival study and interviews with the descendants of the miners, if available. Results of this mitigative study may provide historical resources clearances or determine whether additional study is warranted.

12.4 ALBERTA CULTURE & COMMUNITY SPIRIT CLEARANCE

The final report for the 2007 HRIA was submitted to ACCS the end of February, 2008. ACCS reviewed the report and its recommendations and provided a letter outlining Historical Resources Act clearances for of the development, dated October 1, 2008. The clearance requirements included:

- Archaeological Monitoring Program at DkPe-61: As the basement contents of Feature 10 (Warehouse) has not been fully explored and sufficient information exists to suggest the potential identification of large equipment from the early 20th century; an archaeological monitoring program is required during the initial removal of the warehouse remains to ascertain the contents of the basements. Should deposits/materials of interest be identified, further studies will be required in consultations with the Historical Resources Management Branch.
- Reporting is required for the discovery of any additional archaeological resources, palaeontological resources, or historic sites which may be encountered during the conduct of subdivision and development activities.
- Submission of the Final Resources Impact Assessment/Mitigation/Monitoring report to the Land Use Planning Section, Historic Resources Management Branch.

Appendix F, **Historical Resources Impact Assessment**, contains the Historical Resources Impact Assessment of the Legacy Ridge Neighbourhood Stage 3 in portions of NE-18-9-21-W4M, Lethbridge, (Permit 07-113), Final Report, dated July, 2008.



13 TRANSPORTATION

Access into Legacy Ridge Stage III will ultimately be provided at seven locations off Mildred Dobbs Boulevard, 44th Avenue and adjacent roadways entering Hardievile.

In Stages II and III, Mildred Dobbs Boulevard is an Undivided Major Collector Roadway. It should be noted that in Stage I sections of Mildred Dobbs Boulevard were a Divided Major Collector Roadway. The future extension of Mildred Dobbs Boulevard through Legacy Ridge Stage III will complete collector road linkage from Scenic Drive to 44th Avenue North.

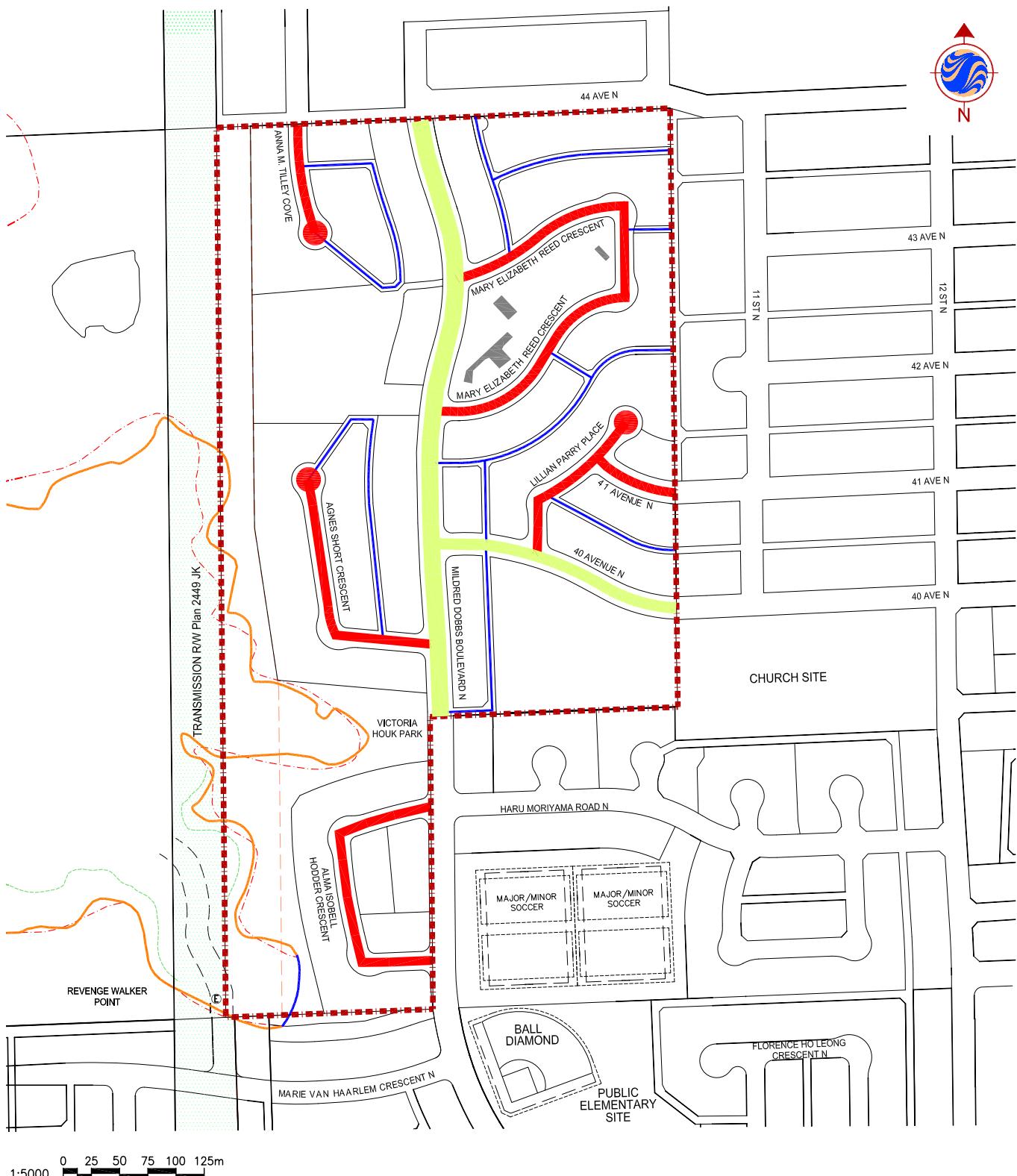
The transportation network in the Legacy Ridge Stage III Outline Plan provides vehicular circulation consistent in design with the Hardievile/Legacy Ridge/Uplands Area Structure Plan.

13.1 TRANSPORTATION IMPACT ASSESSMENT

A detailed assessment of the impact that this development will have on the adjacent existing roadway network has been completed as a part of the planning process. A report entitled "Legacy Ridge Stage 3 Traffic Impact Assessment" has been prepared to document the analysis and findings of the Transportation Impact Assessment. The analysis concludes that all intersections analyzed under the 2037 full development scenario operated at a high level of service, above City of Lethbridge minimum requirements.

Figure 13.1, Transportation Network, outlines the transportation network within and surrounding The Legacy Ridge Stage III Outline Plan area.

Appendix G, Transportation Impact Assessment, contains in its entirety the Legacy Ridge Stage III Traffic Impact Assessment dated March, 2008.



Legend

- LEGACY RIDGE STAGE III BOUNDARY
- COLLECTOR ROADWAY
20M / 23M RIGHT OF WAY
- LOCAL ROADWAY 16.5M RIGHT OF WAY
- PAVED LANE 7.0M
- EMERGENCY EQUIPMENT
ACCESS TO RIVER VALLEY



MELCOR
DEVELOPMENTS LTD.

Client/Project
MELCOR DEVELOPMENTS LTD.
LEGACY RIDGE STAGE III
OUTLINE PLAN

Figure No.
13.1

Title

Transportation
Network

May 2009
112938611



14 TRANSIT AND MAILBOX SERVICES

14.1 TRANSIT

Legacy Ridge Stage III will have bus service by extending LA Transit routing from existing adjacent communities. Construction of the appropriate public transit facilities will be designed to meet the current September 1999 requirements of the LA Transit Planning and Building "Transit Friendly Residential Subdivision" Guidelines.

The Legacy Ridge transit routing will follow proposed collector roadways to meet City of Lethbridge pavement design and roadway geometry standards. All transit stops will be designed to meet the 250 metre stop spacing standards and 90% of the development population will be within a 450 metre walking distance. This is subject to current practices and policies in place with LA Transit at the time of development.

Temporary transit turnaround facilities may be required until such time as the Mildred Dobbs Boulevard completes a 'transit loop'.

Ultimate transit routing will be determined by LA Transit.

14.2 COMMUNITY MAILBOX LOCATIONS

The final location of community mailboxes will be decided in conjunction with Canada Post at the time of detailed design.



15 SITE SERVICING

A major water feeder main and sanitary sewer trunk main run along the perimeter of the plan area along 44th Avenue, with the sewer trunk main running south along the west boundary of the site. Service will be incorporated from existing trunk mains to the south on Mildred Dobbs Boulevard and to these existing trunk and feeder mains. A stormwater management facility exists to the west of the lands to accommodate stormwater quantity and quality control from these lands.

15.1 SANITARY SERVICING

Figure 15.1, Sanitary Sewer Collection, provides the sanitary sewer collection network for the lands and the connection points to existing sewer mains. The service population into the Hardievile sewage trunk main will increase by up to 460 people. The total peak wastewater generation from the study area is 26.9 L/s. The estimated average dry weather flow is 4.8 L/s (415m³/d).

15.2 STORMWATER SERVICING

Figure 15.2, Stormwater Management, provides the minor stormwater collection network and the preliminary major stormwater flow paths. The Legacy Ridge/Hardievile Stormwater Management Facility has been developed to the immediate west of the subject lands. This facility has been designed to accept the 1:100 year post development runoff from Hardievile and Legacy Ridge and discharge at a predevelopment rate. This facility is also designed to achieve treatment objectives for stormwater run-off. All drainage from Legacy Ridge Stage III will be directed to this facility.

15.3 WATER SERVICING

Figure 15.3, Water Distribution Network, provides the water main and feeder main layout and the proposed connection points to existing water mains. The water distribution network consists of a 300mn feeder main along Mildred Dobbs Boulevard supported by a network of local mains connected to the existing water mains in Hardievile and Legacy Ridge Stage II. The anticipated and planned increase average day demand based on 1148 population is 476m³/day.

Appendix H, **Outline Plan Servicing Design Brief** contains the Brief in its entirety dated July 7, 2008.



Legend

- LEGACY RIDGE STAGE III BOUNDARY
- EXISTING SANITARY SEWER LOCATION
- NEW SANITARY SEWER LOCATION
- ★ CONNECT TO EXISTING (OR PLANNED) SANITARY LINE

Client/Project
MELCOR DEVELOPMENTS LTD.
LEGACY RIDGE STAGE III
OUTLINE PLAN

Figure No.
15.1

Title

Sanitary Sewer
Collection

May 2009
112938611



MELCOR
DEVELOPMENTS LTD.



MELCOR
DEVELOPMENTS LTD.

Stantec

Legend

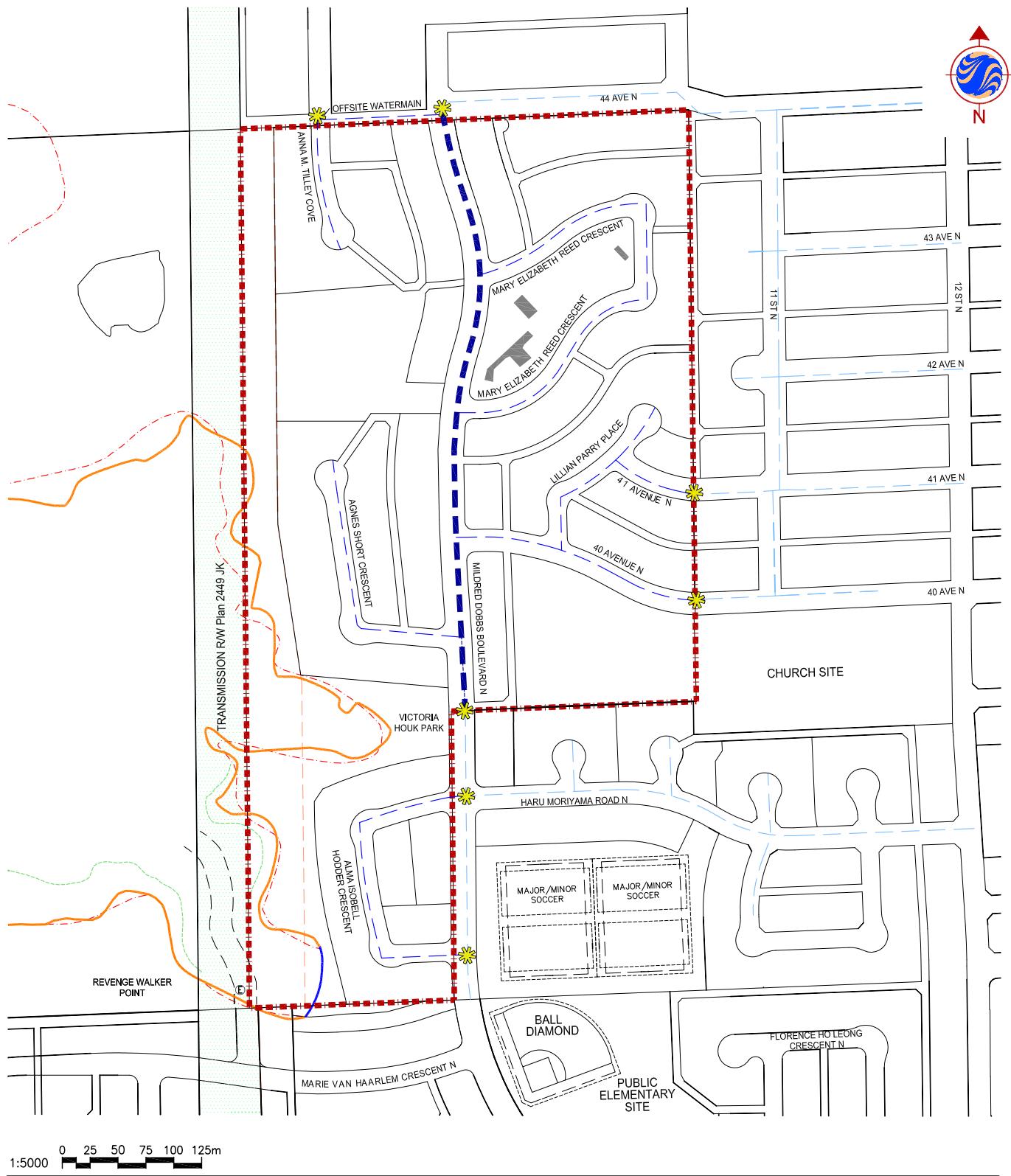
Client/Project
MELCOR DEVELOPMENTS LTD.
LEGACY RIDGE STAGE III
OUTLINE PLAN

Figure No.
15.2

Title

Stormwater Management

May 2009
112938611



Client/Project
MELCOR DEVELOPMENTS LTD.
LEGACY RIDGE STAGE III
OUTLINE PLAN

Figure No.
15.3

Title
Water Distribution
Network

May 2009
112938611



MELCOR
DEVELOPMENTS LTD.

Stantec



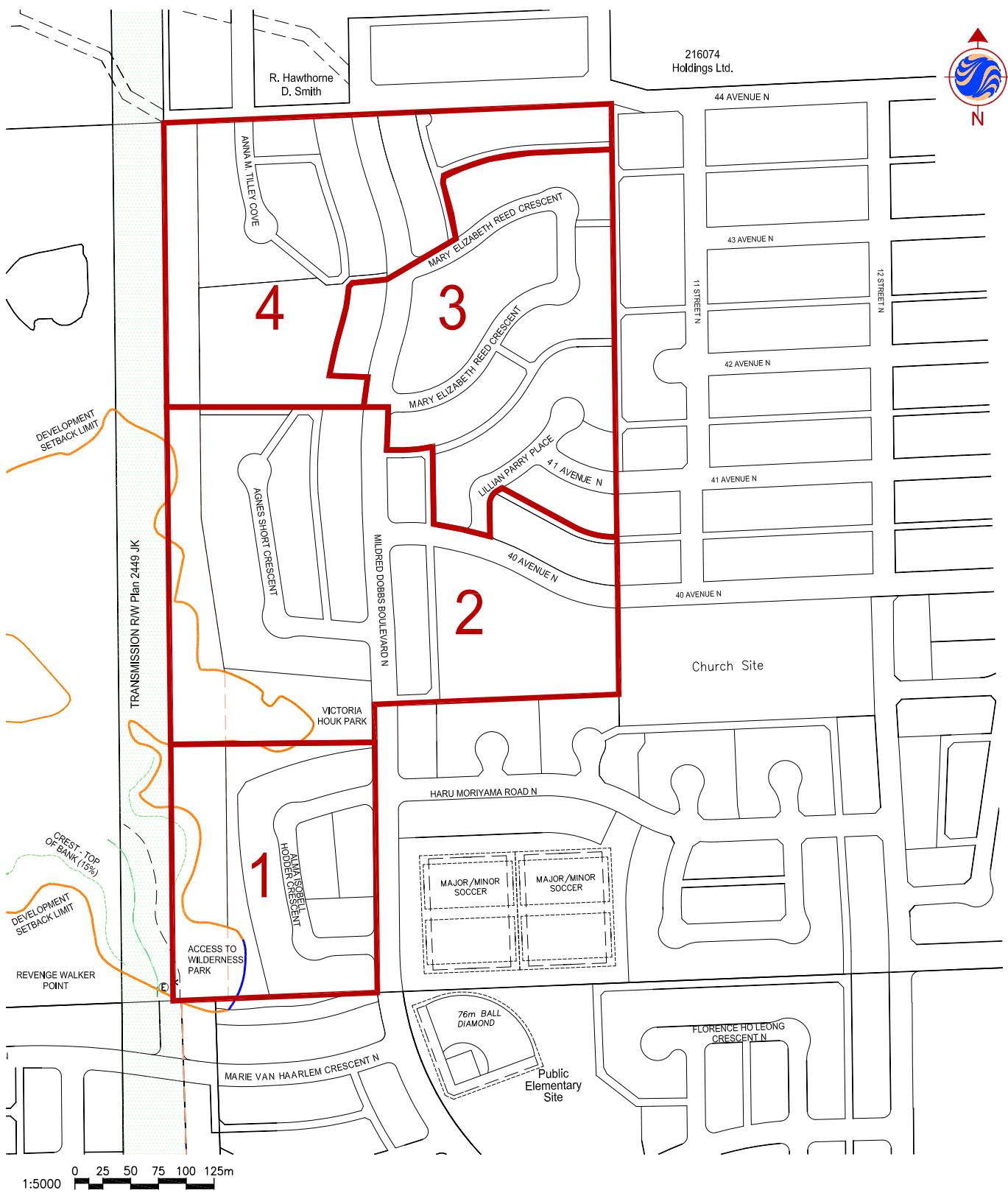
16

PHASING POTENTIAL

The phasing for Legacy Ridge Stage III will proceed as a natural extension of the existing community. Phasing will extend northward on Mildred Dobbs Boulevard preventing fragmented development in the area.

Melcor Developments Ltd. will cost-share the extension of 44th Avenue North prior to development of the cul-de-sac named Anna M. Tilley Cove and the adjacent lots fronting 44th Avenue.

Figure 16.1, Proposed Site Phasing, illustrates the proposed phasing for Stage III.



MELCOR
DEVELOPMENTS LTD.

Stantec

Legend

PHASE OUTLINE BOUNDARY

Client/Project
MELCOR DEVELOPMENTS LTD.
LEGACY RIDGE STAGE III
OUTLINE PLAN

Figure No.
16.1

Title

Proposed Site Phasing

May 2009
112938611



17

FIRE PROTECTION

Construction of the entire divided collector entrance roadway adjacent to the initial development stages will provide two alternate points of access for emergency vehicles and equipment. Public roadways will be designed to meet the current City of Lethbridge Design Standards to ensure safe emergency vehicle passage.

Water modeling of the development has confirmed that fire flow requirements of 75 L/s under maximum day demand conditions with a minimum pressure of 150 kPa (21.7 psi) will be exceeded in all low density residential areas.



18 ENVIRONMENTAL SUSTAINABILITY

Development setbacks have been established along the Oldman River Valley Escarpment and the top of bank development setback line has been respected in the design of adjacent residential land uses.

A pathway system along the top bank adjacent to the Outline Plan area connects the community and non-vehicular access to the Alexander Wilderness Area. Existing vehicular access has been maintained to recreational facilities within the Oldman River Valley.

The comprehensive open space network design is predicated on connections to the major amenity area on the west side of the community.

In the interest of sustainable development, high maintenance park areas have been minimized and xeriscaping principles will be used to create an aesthetic and functional open space network.



19 CONCLUSION

Melcor Developments Ltd. respectfully requests Outline Plan approval by Municipal Planning Commission and subsequent Land Use Redesignation approval by Lethbridge City Council to accommodate commencement of Legacy Ridge Stage III.