

Aurora Heights Area Structure Plan

Bylaw Amendment

"North Blackfalds ASP"
Originally Approved
February 13, 2007



Prepared for:
Aurora Heights Inc.
Prepared by:
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1100 – 4900 50th St
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November 2013

AURORA HEIGHTS AREA STRUCTURE PLAN

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AURORA HEIGHTS AREA STRUCTURE PLAN

Introduction

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1.0 INTRODUCTION

1.1 Purpose

The purpose of the Aurora Heights Area Structure Plan (ASP), previously entitled the North Blackfalds ASP, is to describe the land use framework and development objectives for the Plan Area. The Plan Area consists of land in two quarter sections: SW ¼ Sec. 35-39-27-W4M and SE ¼ Sec. 34-39-27-W4M, both of which are located north of the Town of Blackfalds. The Aurora Heights ASP Area encompasses approximately 107 hectares (264.4 acres).

This report has been prepared by Stantec Consulting Ltd. on behalf of Aurora Heights Inc, hereafter referred to as the Developer.

The Developer's intent through the Aurora Heights ASP is to develop a balanced community of residential and recreational opportunities with complementary land uses. In order to achieve this, the Developer intends to integrate the area with interconnected parks and open space linkages, in addition to the developing high-quality residential opportunities that complement the existing landscape and surrounding countryside. Together, this will provide the Town of Blackfalds with a unique area for residential development.

This ASP will identify the following:

- the size and location for various land uses;
- the alignment of roadways and lanes;
- the open park system;
- the proposed development density;
- servicing concepts for deep utility servicing; and
- the development staging sequence.

The detailed design of each phase (re-districting and plans of subdivision) will refine the concept presented by the Aurora Heights ASP.

1.2 Plan Area

Figure 1.0 – Location Plan shows that the Plan Area is located in the SW ¼ of Section 35-39-27-W4M and the SE ¼ of Section 34-39-27-W4M; it is defined by the following boundaries:

North Boundary	NE¼ Sec 34-39-27-W4M
West Boundary	SW¼ Sec 34-39-27-W4M
East Boundary	Canadian Pacific Railway
South Boundary	Section lines, existing development



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There is agricultural land surrounding the property to the west and north with existing residential areas directly south of the SE ¼ Sec. 34-39-27-W4M (Harvest Meadows). The parcels are split by Broadway Avenue. The property is legally described as: SW ¼ Section 35- 39-27-W4M, SE ¼ Section 34-39-27-W4M, Plan 8922891 Lot 1, and OT-Sec 34-39-27-W4M. **Figure 2.0 – Legal**, illustrates the boundary of the Plan Area and the legal area, based on the legal boundary survey completed by Stantec Consulting Ltd.

There is a closed roadway parcel considered in this ASP which is located between the two quarter sections; this parcel is currently owned by the Government of Alberta Minister of Highways and therefore should be redesignated to a road right-of-way prior to development.

A 2.33 ha country parcel (Lot 1 Plan 892 2891) located on SE ¼ Sec. 34-39-27-W4M is owned by a consortium. This area has been incorporated into the planning of the development; however, development will not occur until such time as an agreement can be made with Aurora Heights Inc.

The two parcels are also subdivided by a subdivision plan 082 4628 which will not be modified by this Area Structure Plan. The Aurora Heights ASP constitutes a logical planning unit with respect to identifiable plan boundaries and servicing considerations and is consistent with the area, though the surrounding areas are not considered part of this ASP.

1.3 Policies and Relevant Planning Documents

An Area Structure Plan was previously prepared and adopted for these lands in 2007, as well as Lot 1 PUL, Block 1, Plan 8922891 for the water reservoir. This ASP represents a replacement of this existing document. The Aurora Heights ASP has been prepared as a Statutory Plan. It adheres to Section 633 of the Municipal Government Act of Alberta and follows the guidelines and policies set forth by the Town of Blackfalds for the development of new areas.

The following relevant documents have been reviewed and referenced in preparation of this ASP report:

- *Town of Blackfalds Design Guidelines, May 2011*
- *Town of Blackfalds Parks and Open Space Plan, January 2003*
- *Town of Blackfalds Transportation Study, 2003.*
- *Town of Blackfalds Municipal Development Plan, August 2009*
- *Geotechnical Investigation on the Aurora Heights Management Ltd. Property*
- *Town of Blackfalds Land Use Bylaw No. 1081/09*
- *Town of Blackfalds Servicing Master Plan, 2008*

These documents provide information related to the land uses for the area, density of population, infrastructure servicing requirements, and staging. The undeveloped land contained



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within the ASP was annexed into the Town and was currently zoned agricultural; however, as indicated in the Municipal Development Plan, the land was designated for future residential development.

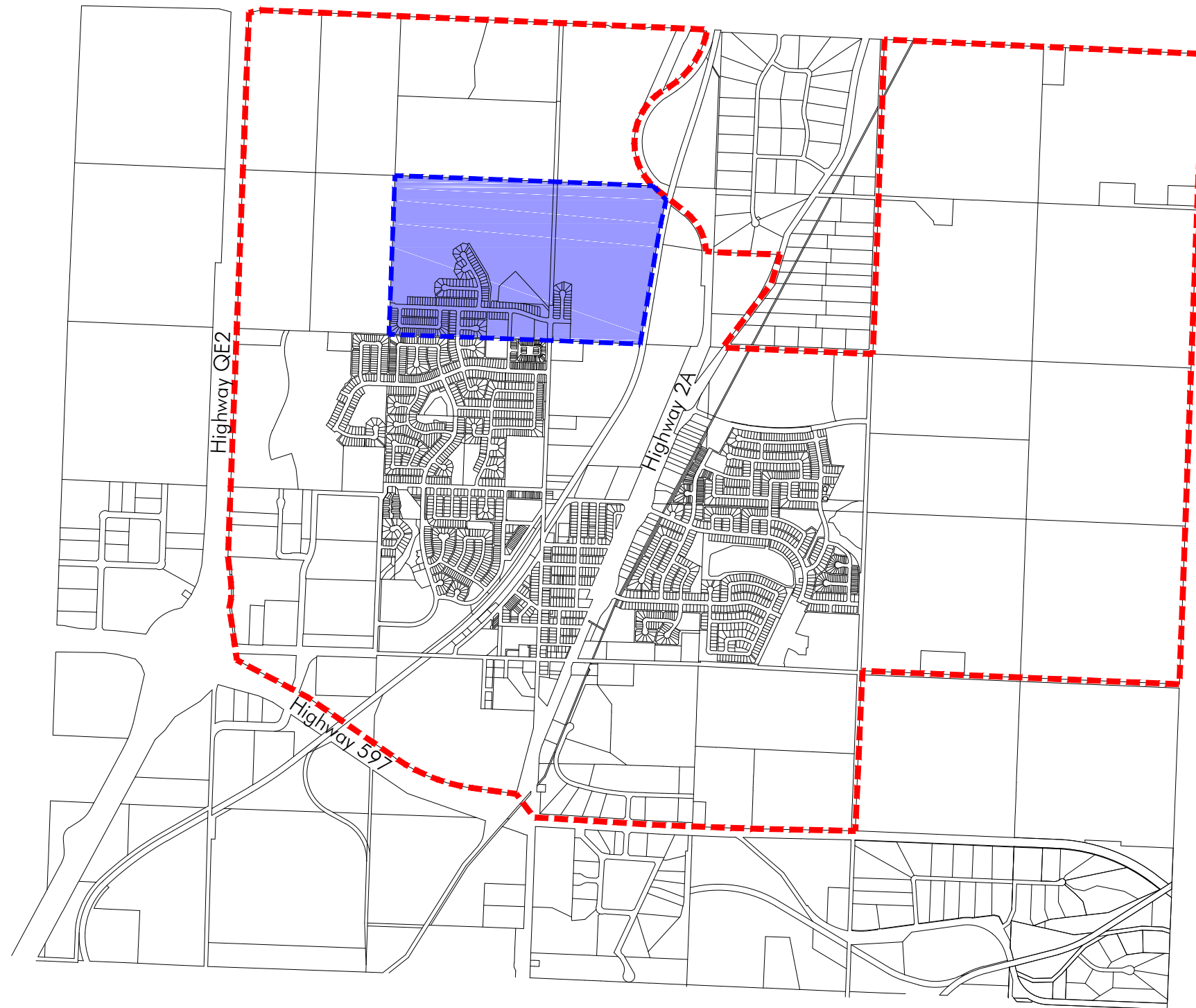
The Town of Blackfalds Municipal Development Plan outlines broad policies for guiding growth and changes in the Town. Among many other things the MDP sets out the following policies regarding neighbourhood designs:

- The residential density in new neighbourhoods shall be between the range of 10 – 17 units per gross developable hectare (4 – 7 units per gross developable acre).
- Notwithstanding the defined maximum density the Town may approve a development in excess of 17 residential units per gross developable hectare (7 per gross developable acre) provided it is defined within an approved Area Structure Plan.
- The Town shall continue to require a mix of housing types and forms in all residential neighbourhoods.
- The Town shall encourage the creation of a wide variety of housing forms.
- Multi-family housing sites should not exceed 1.75 hectares (4.32 acres) unless special site characteristics or design features will reasonably accommodate larger sites within the context of the characteristics of the neighbourhood and surrounding land uses.

1.4 Amendment

The North Blackfalds Area Structure Plan was adopted by Blackfalds Municipal Council on February 13, 2007. As shown on **Figure 3.0 – Amendment Area**, since the ASP's approval, 21% of the Plan Area has been constructed. Due to a change in ownership of the development, the remaining portion of the Plan Area has been slightly redesigned.

This amendment has no intention of altering the original vision of the area, as described in the *North Blackfalds Area Structure Plan (2007)*, or modifying areas that have already been constructed.



Legend:
 --- Town of Blackfalds Boundary
 --- ASP Boundary

Figure 1.0
 Location Plan
 Aurora Heights

Prepared for:
 Aurora Heights Inc.
 Blackfalds, Alberta



DRAWN BY: SAS
 CHECKED BY: GCL
 SCALE: 1:5,000
 PROJECT #: 112849436

October, 2013



- Legend:**
- S.E. 1/4 Sec. 34, Twp. 39, Rge. 27, W.4M. (Aurora Heights Inc.)
 - S.W. 1/4 Sec. 35, Twp. 39, Rge. 27, W.4M. (Aurora Heights Inc.)
 - Closed Road Allowance (Minister of Highways)
 - Lot 1, Plan 892 2891 (D.Asmundson, M.Rutten, I.Clarence, L.Amelia, G.Rutten, B.Rutten, L.Rutten)
 - Plan 082 4628 (Ownership Varies)
 - Lot 1 PUL, Block 2, Plan 072 4961 (Town of Blackfalds)
 - Government Road Allowance (Province of Alberta)
 - ASP Boundary

Figure 2.0
Legal
Aurora Heights

Prepared for:
Aurora Heights Inc.
Blackfalds, Alberta



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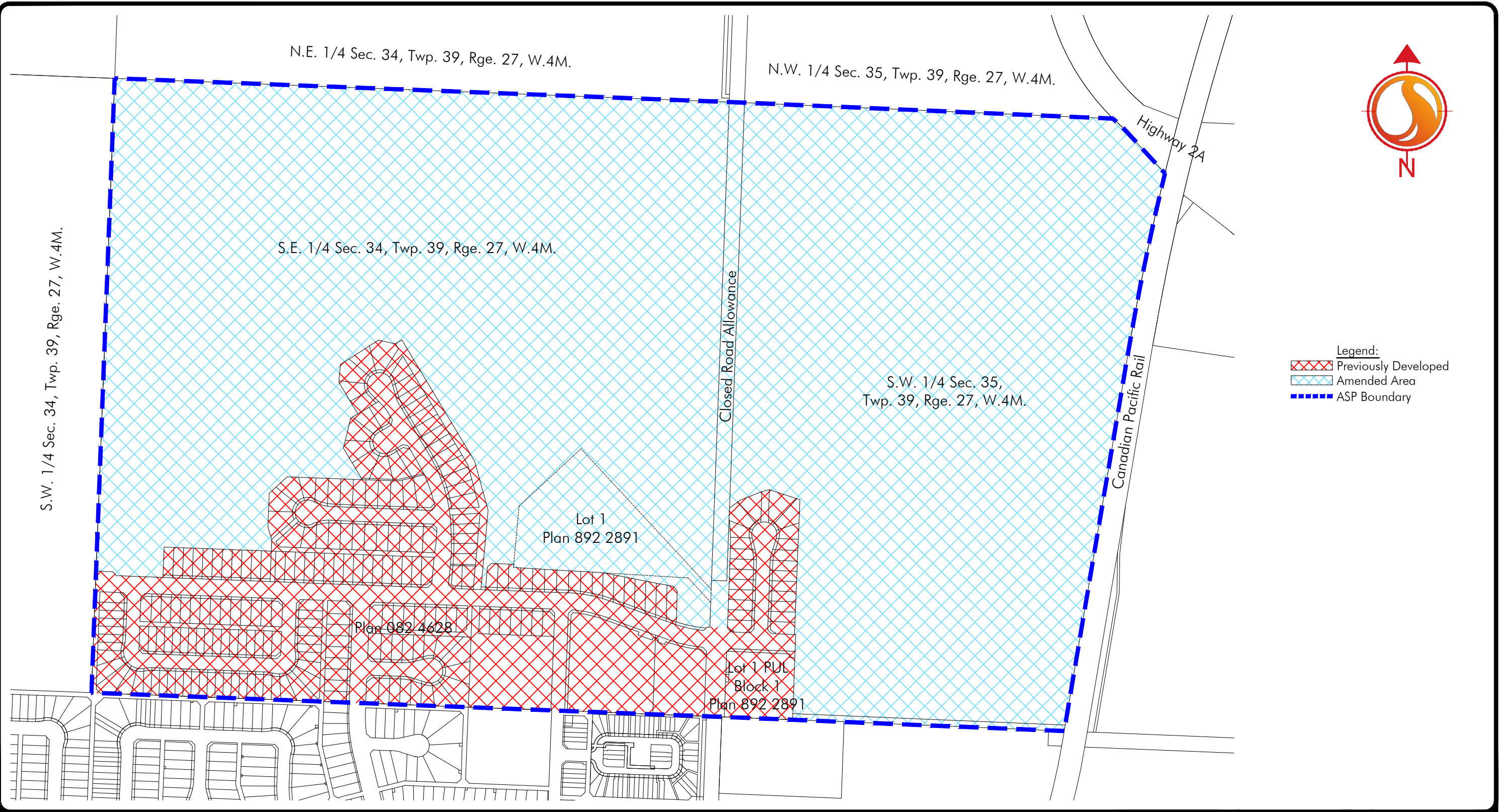


Figure 3.0
 Amendment Area
 Aurora Heights

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 Aurora Heights Inc.
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AURORA HEIGHTS AREA STRUCTURE PLAN

Site Context and Development Considerations

Amendment: November 21, 2013

2.0 SITE CONTEXT AND DEVELOPMENT CONSIDERATIONS

2.1 Topography and Vegetation

As shown on **Figure 4.0 – Existing Conditions**, the site topography is comprised of rolling terrain with the ground surface elevation ranging from approximately 875.0m to the west and 880.0m to the east near the CPR line. The site drains toward the north of parcels on either side of Broadway Avenue. The SE quarter section drains also to the northwest corner into a low area of that parcel.

There are some significant slopes around the existing pond area in the northwest corner of the SE quarter section. There is up to 10.0m of elevation drop from the surrounding perimeter lands to the water level in this area. The slope along the west side and southeast corner exceeds 15% at some locations. Along the west edge the slope typically ranges between 10-15%.

An aerial photograph shown on **Figure 4.0 – Existing Conditions** illustrates that there is a significant amount of tree cover on these lands. This vegetation is located primarily in a ring around the two slough areas. The remainder of the vegetation on the site consists of crops and prairie grasses.

Based on the geotechnical reports prepared by Parkland Geotechnical Consulting Ltd. this site consists of Class 3MT according to the Canada Land Inventory classification system.

2.2 Natural Features

There are several areas of trees located within the Plan Area. A selection of those located surrounding the bodies of water will be preserved and incorporated into the development; this selection will be made based on tree health and grading requirements.

2.3 Historical Land Use

The Plan was previously used for agricultural purposes. There are some uncultivated areas where ponding has occurred due to natural surface drainage patterns. At the time of pre-development, three houses existed on the site. The house and outbuilding on the eastern quarter of the Plan Area have since been removed.

2.4 Adjacent Lands and Surrounding Development

With the exception of existing residential development located along the southern boundary of the Plan Area, the surrounding land is agricultural.

2.5 Existing Utilities

The only existing utilities located in the Plan Area are those used to service the existing buildings. These lines will be abandoned or relocated as development proceeds. Also, no major utility pipelines, oil or gas wells, or other related facilities are located in the area.

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According to the Alberta Energy and Utilities Board, there are no sour gas wells within 1.6km of the Plan Area, and no natural resources located within the Plan Area.

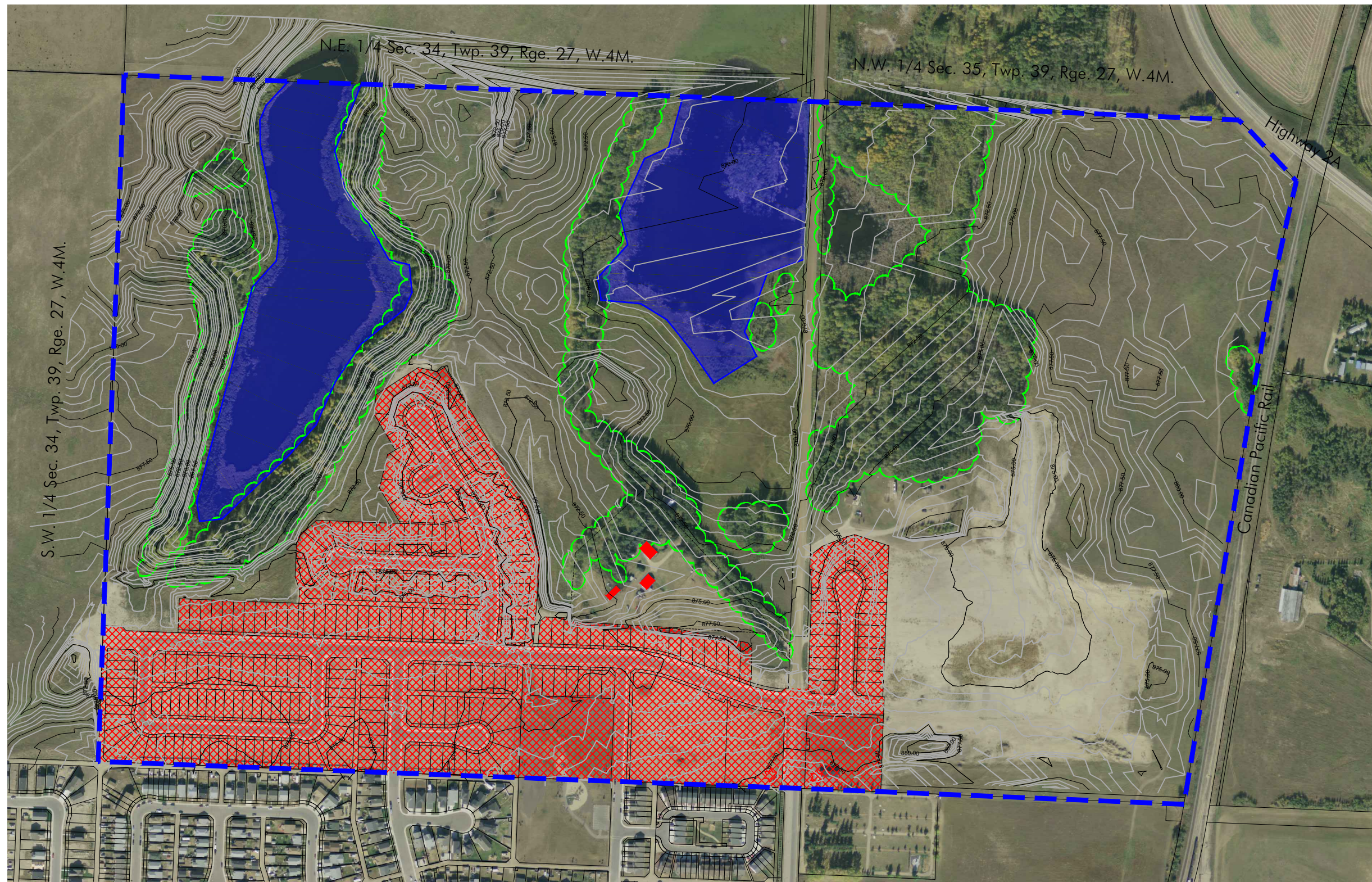
2.6 Geotechnical Background Information

A geotechnical investigation was previously completed by Parkland Geotechnical Consulting Ltd. In 2013 which identifies that these lands are suitable for urban development.

2.7 Environmental Site Assessment

A Phase 1 Environmental Site Assessment was completed by Parkland Geotechnical and Smith Dow and Associates Ltd for the previously approved North Blackfalds ASP. These properties were given a rating of low in terms of environmental risk.

A second environmental site assessment was completed by Parkland Geotechnical in 2013 for Aurora Heights Inc.



- Legend:**
- Contour Lines
 - Existing Buildings
 - Existing Wetlands
 - Existing Development
 - Treed Areas
 - ASP Boundary

Figure 4.0
Existing Conditions
Aurora Heights

Prepared for:
Aurora Heights Inc.
Blackfalds, Alberta



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AURORA HEIGHTS AREA STRUCTURE PLAN

Development Objectives and Principles

Amendment: November 21, 2013

3.0 DEVELOPMENT OBJECTIVES AND PRINCIPLES

3.1 Development Objectives

The Aurora Heights ASP has been prepared as a comprehensively planned residential neighbourhood taking advantage of the existing natural features and topography. The main objectives of the Aurora Heights ASP are:

- Develop a Plan consistent with the general intent and purpose of the Town of Blackfalds Guidelines;
- Provide a framework to deliver high quality, comprehensively planned residential areas by defining the general pattern and composition of land uses, linkages, servicing designs, and development staging;
- Address and accommodate existing site features (i.e. the wetlands, bordering railway line) affecting the development; and
- Ensure the implementation of the Plan takes place in an orderly, phased manner.

3.2 Development Principles

Development of Aurora Heights is defined through the following general principles:

3.2.1 Residential

- Encourage a variety of housing types including single detached housing, row housing, and apartments. All housing forms and options will recognize consumer preferences and be in conformance with municipal standards and policies set forth by the Town of Blackfalds.
- Encourage pedestrian-friendly streetscapes.
- Provide direct and safe pedestrian linkages to the community nodes such as the open space areas, commercial site, multi-family area, and adjacent residential developments.
- Locate residential development to take advantage of existing natural features.
- Orientate larger parcels of medium density residential development in close proximity to the collector road system to provide easy access and a transitional land use between adjacent single family development and major roads.

3.2.2 Municipal Reserves and Educational / Community Facilities

- Provide a park space to service the active and passive recreational needs for this community as well as for adjacent neighbourhoods.



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Development Objectives and Principles

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- Allow for the provision of dispersed park space using Municipal Reserves to provide open spaces and recreation opportunities to residents.
- Provide pedestrian linkages.
- Preserve and enhance the existing wetland areas to provide an active and passive recreational amenity, complete with pedestrian linkages, for the whole community to enjoy.

3.2.3 Transportation

- Provide a logical, safe, and efficient transportation network within the Plan Area.
- Provide non-vehicular circulation options throughout Aurora Heights with special attention to linkages to the recreational parks site and existing wetland areas.
- Address the vehicular transportation needs of residents moving to, from, and within Aurora Heights.
- Minimize walking distances by creating an interconnected street network and providing walkways where roadway connections are not feasible.

3.2.4 Ecological Stewardship

- Develop land in an efficient manner to encourage intensive urban development.
- Preserve the existing wetlands in order to protect this important natural feature.
- Minimize environmental and economic costs associated with the maintenance of public and private landscaping by encourage naturalized landscaping, to the extent acceptable to the Town of Blackfalds.
- Encourage energy efficient construction and other innovative building and infrastructure techniques.

AURORA HEIGHTS AREA STRUCTURE PLAN

Development Concept

Amendment: November 21, 2013

4.0 DEVELOPMENT CONCEPT

4.1 Neighbourhood Unit

The Aurora Heights ASP neighbourhood development concept is based upon a response to current and anticipated market trends within Blackfalds and the Red Deer Region. An analysis of these trends and an assessment of their implications assist in shaping the plan with respect to the type, shape, size, and locations of various land uses.

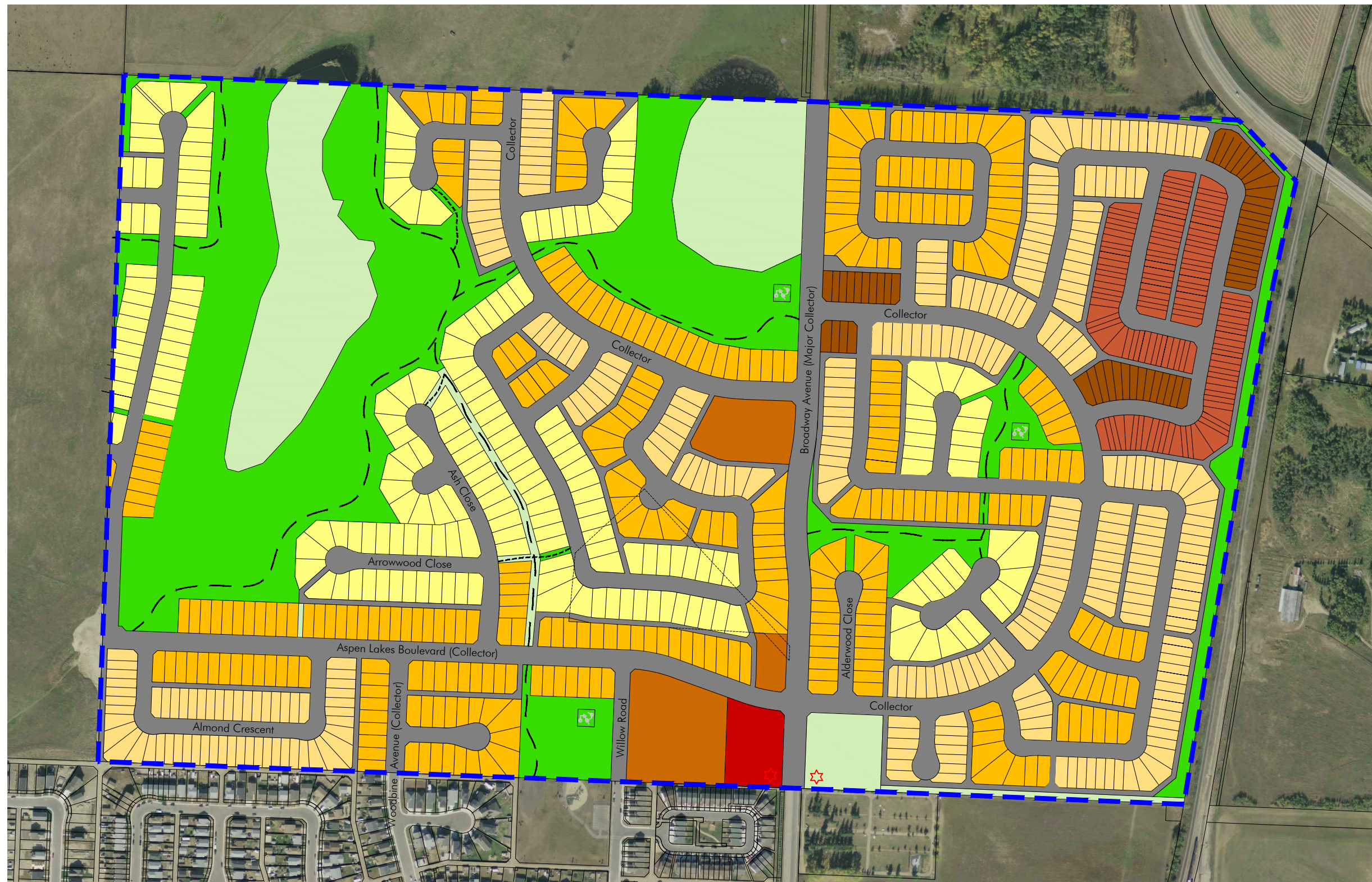
The land use statistics and number of residential units are represented in **Table 1: Land Use Allocation** following the Concept Plan as shown on **Figure 5.0 – Concept Plan** and **Figure 6.0 – Concept with Aerial**.

Table 1: Land Use Allocation

LAND USE	AREA (ha)	AREA (ac)	% OF NDA	UNITS
Gross Plan Area	107.45	265.51		
<i>Environmental Reserve (ER)</i>	0.00	0.00		
<i>Water Reservoir PUL (including pipeline PUL)</i>	1.08	2.67		
Net Developable Area	106.37	262.84	100.00	
Residential	53.94	133.28	50.71	1,154
<i>Large Lot Residential (R1-L)</i>	13.26	32.77	12.47	201
<i>Medium Lot Residential (R1-M)</i>	18.82	46.51	17.69	336
<i>Small Lot Residential (R1-S)</i>	14.27	35.26	13.41	317
<i>Duplex - Multi-Dwellings Residential (R2)</i>	1.77	4.38	1.67	50
<i>Townhouse – Multi-Dwellings Residential (R2)</i>	3.38	8.35	3.18	124
<i>Multi-Family Dwellings (R3)</i>	2.43	6.01	2.29	126
Commercial	0.64	1.59	0.60	
Open Space	26.90	66.47	25.29	
<i>Municipal Reserve</i>	19.54	48.28	18.18 ¹	
<i>Public Utility Lots</i>	7.58	18.18	6.92	
Transportation	24.86	61.44	23.37	
<i>Collector Roadways</i>	7.58	18.73	7.13	
<i>Local Roadways</i>	12.40	30.63	11.65	
<i>Lanes</i>	4.92	12.15	4.62	

Total density: 10.8 dwelling units/ha

¹ Municipal Reserve: $19.54 \text{ ha} / (\text{Gross Plan Area} - \text{Environmental Reserve}) = 18.18\%$



- Legend:**
- Residential Single Dwelling Large Lot (R1-L)
 - Residential Single Dwelling Medium Lot (R1-M)
 - Residential Single Dwelling Small Lot (R1-S)
 - Residential Multi-Dwelling (R2-Duplex)
 - Residential Multi-Dwelling (R2-Townhouse)
 - Residential Medium Density (R3)
 - Commercial Local (C-3)
 - Municipal Reserve (MR)
 - Public Utility Lot (PUL)
 - Roadway/Lane
 - Community Amenity
 - Entry Feature Sign
 - Multi-Purpose Trail
 - Trail
 - ASP Boundary

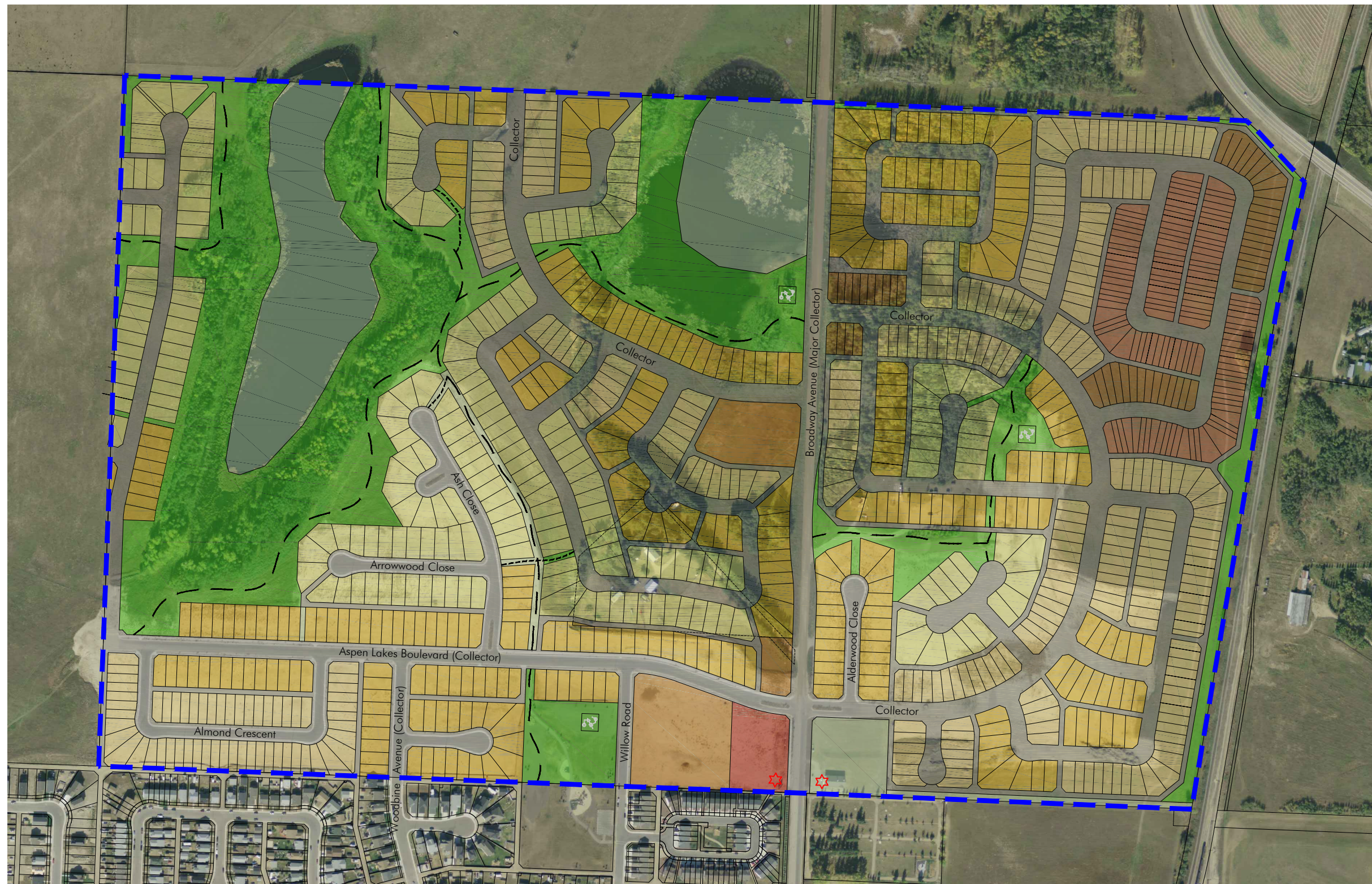
Figure 5.0
 Concept Plan
 Aurora Heights

Prepared for:
 Aurora Heights Inc.
 Blackfalds, Alberta



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 SCALE: 1:5,000
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- Legend:**
- Residential Single Dwelling Large Lot (R1-L)
 - Residential Single Dwelling Medium Lot (R1-M)
 - Residential Single Dwelling Small Lot (R1-S)
 - Residential Multi-Dwelling (R2-Duplex)
 - Residential Multi-Dwelling (R2-Townhouse)
 - Residential Medium Density (R3)
 - Commercial Local (C-3)
 - Municipal Reserve (MR)
 - Public Utility Lot (PUL)
 - Roadway/Lane
 - Community Amenity
 - Entry Feature Sign
 - Multi-Purpose Trail
 - Trail
 - ASP Boundary

Figure 6.0
 Concept Plan With Aerial
 Aurora Heights

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 Aurora Heights Inc.
 Blackfalds, Alberta



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Development Concept

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4.2 Residential

Most of the land within Aurora Heights is intended for residential development, complemented with a significant amount of open space. A mix of low, medium, and high-density residential dwelling units is described and will be implemented based on market conditions and consumer preferences at the time of development.

4.2.1 Residential Single Dwelling Large Lot (R-1L)

The R-1L land use designation has been used to accommodate conventional detached dwellings on larger sized lots. This type of residential land use has been located throughout the neighbourhood and within close proximity to the stormwater management facilities and Municipal Reserve areas.

Within the R1L areas, the housing forms will consist of single detached housing catering to a variety of lot and home sizes. These lots will typically be around 15.0m wide with a minimum parcel area of 550.0m²; corner lots will have a minimum width of 16.5m and 600.0m² area.

The R1-L land use represents 24.59% of the total residential area.

4.2.2 Residential Single Dwelling Medium Lot (R-1M)

Because of a continuing demand and need for more affordable lot and housing options, Aurora Heights has made provision for narrow detached lots which fall under the R1-M land use designation. These lots will range in width from 12.5m for interior parcels to 14.0m on corner lots and from between 460.0m² and 510.0m² respectively.

The single dwelling medium lot development has been spread throughout the Aurora Heights neighbourhood to provide a consistent mix of housing types throughout the community. Trails interconnect these areas with other large and small lot areas.

The R1-M land use represents 34.90 % of the total residential area.

4.2.3 Residential Single Dwelling Small Lot (R-1S)

To accommodate the continuing demand for more affordable homes, R1-S small lot detached dwellings have been located in many areas within the Aurora Heights neighbourhood with a greater concentration on the eastern side of the Plan Area. These lots will range in width from 10.5m for interior parcels to 11.5m on corner lots and from between 360.0m² and 410.0m² respectively.

The R1-S land use represents 26.45% of the total residential area.

4.2.4 Residential Multi-Dwelling (R2)

The R2 land use represents 9.55% of the total residential area.

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4.2.4.1 Duplexes (R2)

Two small portions of the Plan Area have been identified as R2, intended for the development of duplexes. These areas are located in the northeast corner of the Plan Area, along the collector roadway and Broadway Avenue.

4.2.4.2 Town Houses (R2)

A large area of town houses has been identified within the northeast portion of the Plan Area. This style of housing is intended to provide an alternative, lower cost, housing option and has been located near public open spaces to expand the amount of amenity space available to residents.

4.2.5 Multi-Family Residential (R3)

There are three multi-family areas designated along the main collector roadways for higher density multi-family development; one of these areas has been developed as part of the previous Area Structure Plan approval. These locations were chosen based on their access potential from the roadway network and their proximity to large open spaces which will provide additional amenity space for residents.

Should there be an identified need for a social care site within Aurora Heights, one of these multi-family sites will be utilized for that purpose.

The R3 land use represents 4.51% of the total residential area.

4.3 Commercial

A neighbourhood commercial site has been designated within the Plan Area located along the southern boundary of the Plan Area at the corner of Aspen Lakes Blvd and Broadway Ave. At this location, and with strong vehicle linkage, this site will act as an important focal point for the neighbourhood and surrounding area.

The site is of sufficient size to support a local convenience centre accommodating a range of retail, business, medical, and professional office uses. In the event that the site is not marketable as a commercial use, it will be developed as a multi-family site.

It is recommended that access to this site be restricted to Aspen Lakes Blvd in order to maintain traffic flows along Broadway Ave.

4.4 Parks and Open Spaces

The amount of Municipal Reserve identified within the Plan Area is 18.18% of the Net Developable Area.

AURORA HEIGHTS AREA STRUCTURE PLAN

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4.4.1 Recreational Park Site

There are three Recreational Park sites spread throughout the neighbourhood: two associated with the stormwater management facilities, one joint park site with the neighbourhood to the south, and two as part of the linear park system. These sites create a network of open spaces which ensure that a park is within 400.0-450.0m of all residential lots.

The smaller parks may include play structures, tot lots, etc to provide structured recreation options for children; whereas, the larger parks may include programmed sport fields.

The west stormwater management park will be jointly developed by the Town and the Developer and will include public access to the water to allow for community uses such as: skating, canoeing, or paddle boating in the summer.

All recreational parks will include multi-purpose trails to provide pedestrian connectivity and as passive uses of the area.

4.4.2 Linear Park Sites

There are several linear parks located throughout Aurora Heights to provide passive recreation and pedestrian connectivity throughout the community and to adjacent neighbourhoods. Several linear park areas are located surrounding the west wetland and stormwater management pond; these parks connect residents to public recreation areas. Additional linear parks are located in the east central portion of the Plan Area to provide access to small recreation spaces surrounded by residences. All linear parks have a minimum width of 10.0m.

In order to prevent vehicular traffic from accessing these parks, as well as any Public Utility Lots, bollards will be installed. As identified on the Plan, traffic-calming measures are considered for locations where the linear parks cross any local roadways at mid-block locations.

4.4.3 Stormwater Management Facilities (Public Utility Lots)

All stormwater management facilities have been located within the Plan Area to take advantage of the Plan Area's existing topography and low-lying areas. The facilities will provide recreational opportunities and be configured to provide views from residential enclaves as well as from the linear open space linkages and the roadway network.

The stormwater management facility in the northwest corner of the Plan Area will be developed to utilize the existing wetland.

The stormwater management facility at the north edge of the Plan Area will also utilize the existing wetland. This storm pond may increase in size and may be extended north once development on the adjacent parcel proceeds, to form a common storm retention pond for both of these developments.

AURORA HEIGHTS AREA STRUCTURE PLAN

Development Concept

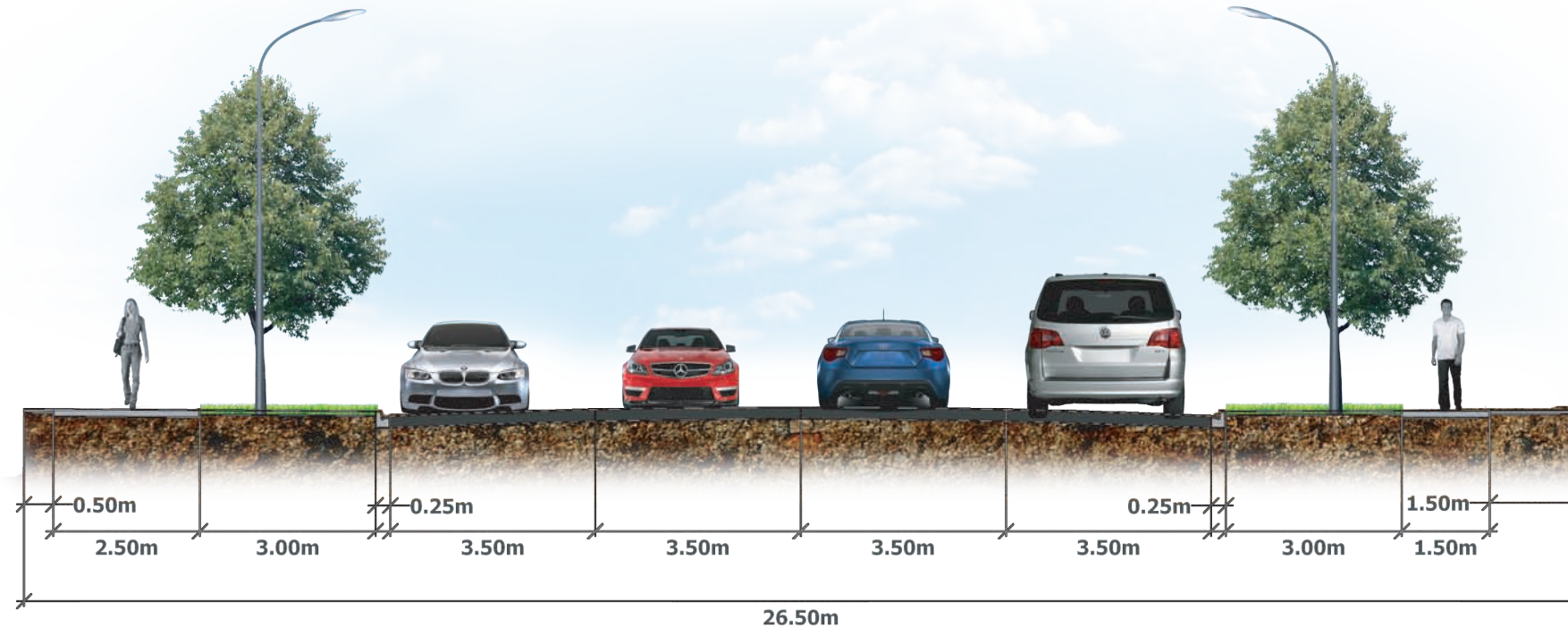
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4.4.4 Utility Corridors

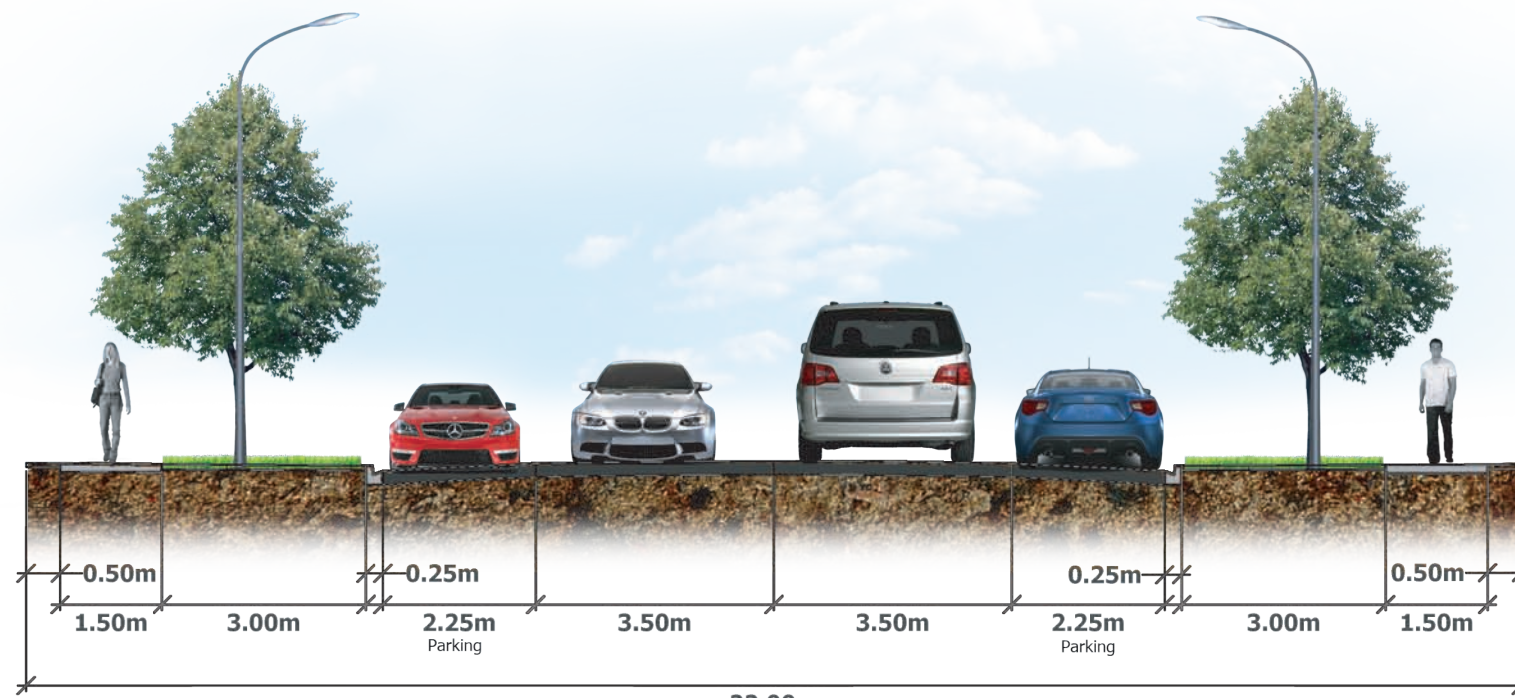
The Public Utility Lots provide additional opportunities for green space pedestrian linkages.

4.4.5 Walkways and Multi-Use Trail

The Aurora Heights ASP is designed with an extensive pathway system to convey pedestrian and bike traffic throughout the neighbourhood. A typical cross-section of the proposed trails is shown in **Figure 7.0 – Roadway Cross-Section Plan**.



26.5m Undivided Major Collector Roadway



22m Undivided Collector Roadway

Figure 7.0
Road Cross Sections
Aurora Heights

Prepared for:
Aurora Heights Inc.
Blackfalds, Alberta



DRAWN BY: SAS
CHECKED BY: GCL
SCALE: 1:5,000
PROJECT #: 112849436

September, 2013

AURORA HEIGHTS AREA STRUCTURE PLAN

Development Concept

Amendment: November 21, 2013

4.5 Transportation

The system of roads proposed for Aurora Heights provides residents and the surrounding, traveling public with safe and efficient access for this area of the Town of Blackfalds.

The primary access to Aurora Heights will be via Broadway Ave; in order to accommodate this, a 26.5m wide right-of-way has been used for the main north/south collector roadway in the neighbourhood.

4.5.1 Collector Roadways

The Area Structure Plan provides 5 collector roadways:

- As indicated, Broadway Ave will be extended from its current termination point at Westbrooke Dr to the north boundary of the Plan Area.
- A collector road branches off of Broadway Ave in the southern portion of the Plan Area, travelling directly west and providing connectivity to future development to the west.
- The eastern portion of the above mentioned collector roadway loops north to reconnect with Broadway Ave in a crescent manner.
- A collector road branches off of Broadway Ave in the center portion of the Plan Area, and travels northwest around the stormwater management facility and provides connectivity to development north of the Plan Area.
- The final collector road is an extension of Woodbine Ave, a short connector from the existing Harvest Meadows subdivision to the south.

Broadway Avenue will be constructed to a 4-lane major undivided collector standard. All other collector roads will have a 12.0m wide carriageway and a 22.0m wide right-of-way. Collector roadways as per the Town of Blackfalds Design Guidelines are shown in **Figures 7.0 – Roadway Cross-Section Plan** and **Figure 8.0 – Road/Paved Trail Cross-Sections**.

All lots that back directly onto Broadway Avenue will have uniform fencing (maintained by the property owners) to ensure that street access is prohibited from Broadway Avenue; those backing onto a lane will not have this fencing.



FIGURE 8.0
Trail Section
Aurora Heights



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Figure 8 – road/paved trail cross-sections

AURORA HEIGHTS AREA STRUCTURE PLAN

Development Concept

Amendment: November 21, 2013

4.5.2 Local Roads

The system of local roads has been planned to provide access to individual development cells while at the same time discouraging outside traffic from short cutting through local roads. Local roads will have a 10.0m wide carriageway and an 18.0m wide right-of-way. All local roads will have rolled monolithic curb and gutter sidewalks on each side of the roadway.

Typical cross-sections of local roads are shown in **Figures 9.0 – Road Section**.

4.5.3 Laneways

Aurora Heights has been designed with the majority of lots backing on to laneways, however lanes have not been provided for lots backing onto green spaces. Rear laneways will be 5.5m wide and designed to the Town of Blackfalds standards. Any lanes adjacent to public green spaces will have post and cable fencing installed to prevent shortcutting.

4.5.4 Canadian Pacific Railway Line

In order to provide sufficient clearance from the Canadian Pacific Railway line located at the east boundary of the property, a 14.0m wide berm has been included in the Plan as well as a laneway. The side of the berm facing the lane will be further landscaped with trees and higher growing shrubs to provide further visual and sound barriers.

Based on this, all residential lots will be a minimum of 20.0m from the edge of the railway right-of-way.

The proposed 2.0m high berm, complete with a fence on top, will provide visual and sound attenuation from the railway line as shown on **Figure 10.0 – Typical Railway Berm Section**.

4.6 Emergency Services

The Town of Blackfalds Area Structure Plan Guidelines does not identify an emergency site for this development.

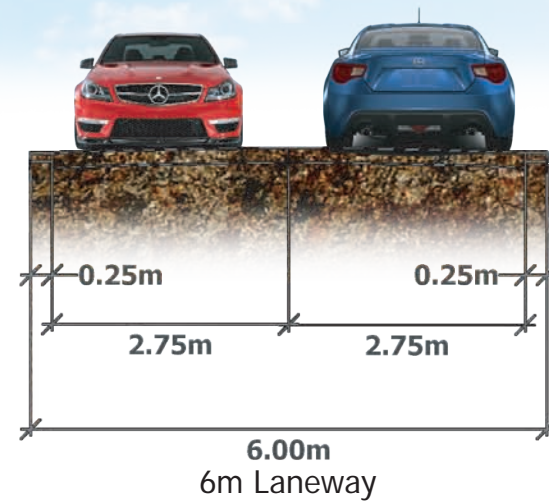
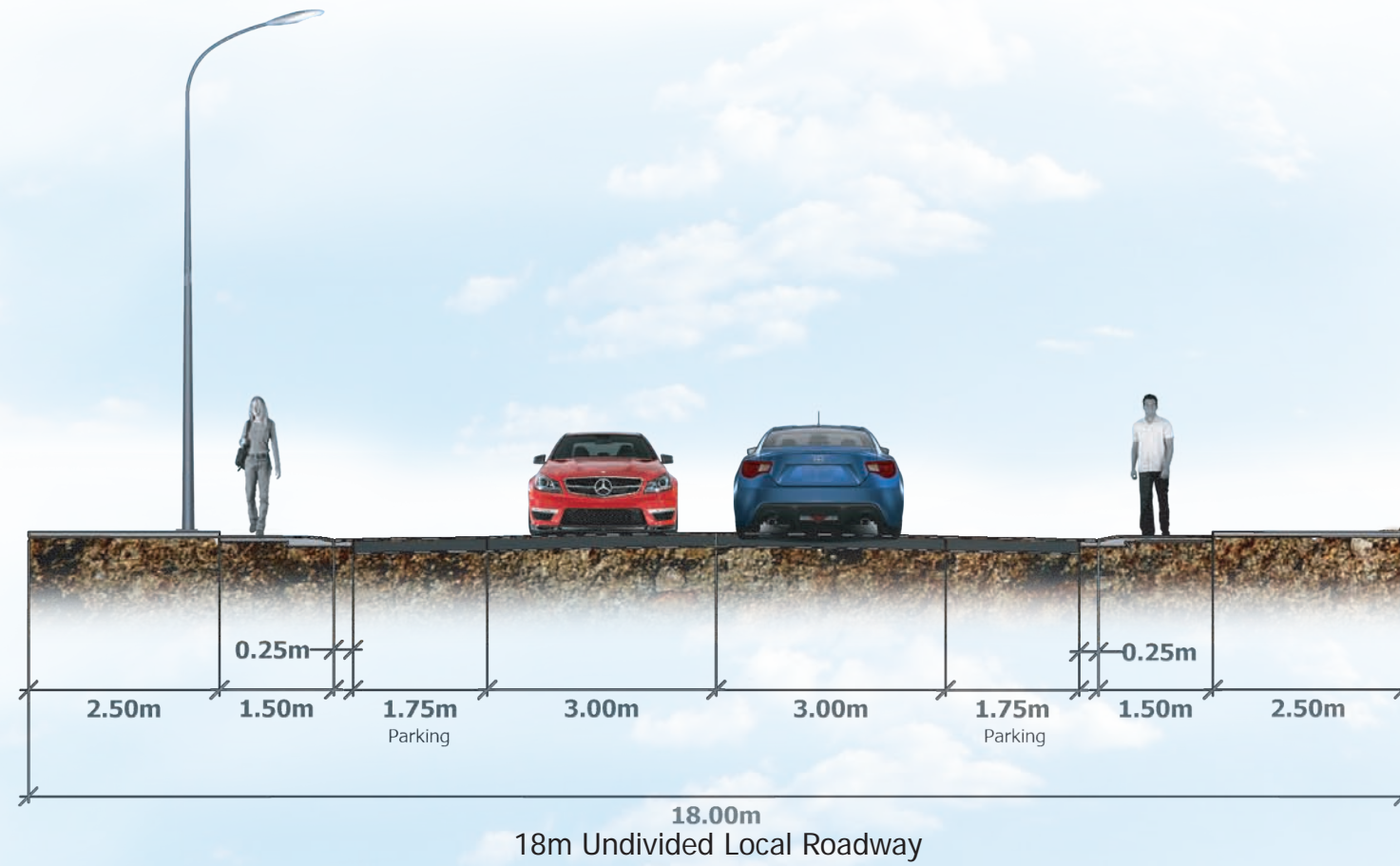


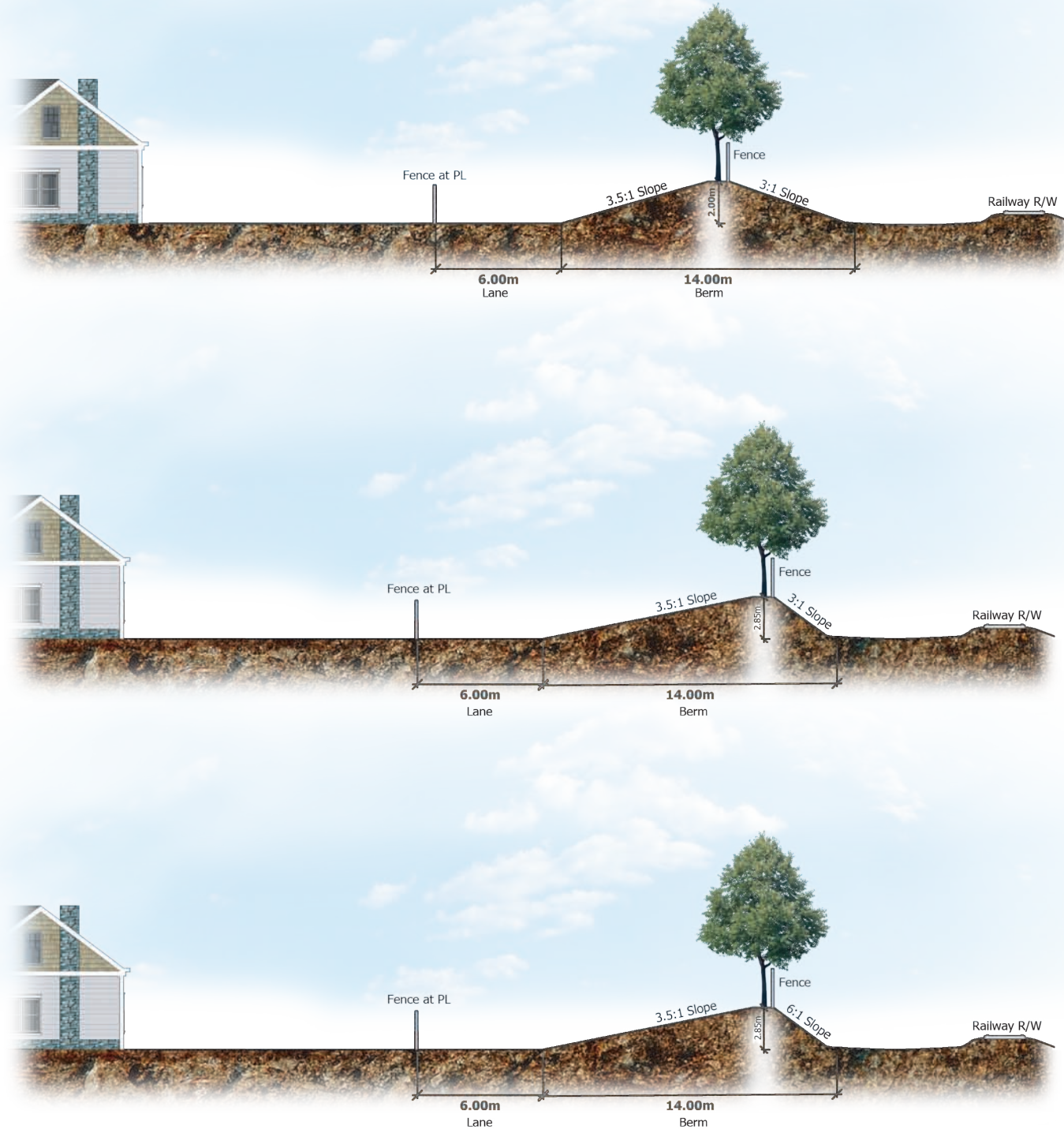
Figure 9.0
Road Section
Aurora Heights

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September, 2013



- BERM**
- Lane side planting
 - grass and shrub beds
 - Berm top
 - trees and high growing shrubs
 - 6' vinyl fence
 - Railway side planting
 - low growing non-manicured grass and natural shrubs

Figure 10.0
 Railway Berm Section
 Aurora Heights

Prepared for:
 Aurora Heights Inc.
 Blackfalds, Alberta



DRAWN BY: SAS
 CHECKED BY: GCL
 SCALE: 1:5,000
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October, 2013

AURORA HEIGHTS AREA STRUCTURE PLAN

Municipal Servicing

Amendment: November 21, 2013

5.0 MUNICIPAL SERVICING

The following outlines the proposed municipal services required to support the proposed development. The services will be designed in conformance to the current:

- i. Town of Blackfalds, *Design Guidelines Manual*, 2011
- ii. Town of Blackfalds, *Servicing Master Plan*, 2009
- iii. Alberta Water and Sustainable Resource, *Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems*
- iv. Alberta Water and Sustainable Resources, *Stormwater Management Guidelines*

5.1 Stormwater Management

Storm runoff from Aurora Heights and the surrounding areas to the north and west drain to low areas where water ponds, evaporates, and then infiltrates into the soil. There are no creeks or rivers running through this area, thereby creating a land-locked stormwater basin. These flows from adjacent quarters will be accommodated in the final design.

Surface runoff from the NE ¼ Sec. 34 drains northerly from the south boundary of the Plan Area towards two existing wetlands located in the northeast and northwest quadrants of the NE ¼ Sec. 34. The wetlands also receive surface drainage from parts of the NW ¼ Sec. 34 and the SW ¼ Sec. 34. Surface runoff from the NW ¼ Sec. 35 drains northwesterly from the south and east boundary of the Plan Area towards an existing wetland located in the northeast quadrant of the NE ¼ Sec. 34. There are also a number of isolated low areas within each of the parcels. These low areas are generally free of standing water. The proposed grading for Aurora Heights will eliminate these low-lying areas.

The existing wetlands will be required to accommodate 1:100 yr storm events. As there are no existing creeks or storm sewers to direct stormwater out of this area, all storm runoff will be contained on-site. The proposed stormwater management system is to function similar to the existing conditions. Evaporation and infiltration will be utilized to dispose of surface runoff water.

Upgrades to the pond will be limited to increasing the capacity as required, however reasonable attempts will be made to maintain the pond's natural state. Grading along the south and east boundaries Plan Area will ensure that all stormwater is directed towards the two existing wetlands.

As there are no available stormwater outlets leaving the overall area, the northwest pond may be required to act as an "equalization" pond. In extreme storm events, the northeast pond could reach capacity. Therefore, excess stormwater will flow from the northeast pond to the northwest pond until the storm subsides. Evaporation and infiltration will then occur until the ponds reach their normal water level.



AURORA HEIGHTS AREA STRUCTURE PLAN

Municipal Servicing

Amendment: November 21, 2013

Internal stormwater systems will consist of an overland (major) system and an underground (minor) system, which will be designed as per the Town of Blackfalds Minimum Design Standards for Development and Alberta Environment standards. Both systems will be designed to ensure that water flowing through the development is safe for the general public. **Figure 11.0 – Storm Servicing Plan** illustrates the proposed stormwater management system.

The Storm water management facilities are designed as evaporation ponds, as development proceeds the water level in these wet lands will be monitored to ensure no adverse effects are caused, should it be deemed necessary a pumped outlet will be created at the north end of the west wetland that would then drain to Lacombe Lake.

5.2 Sanitary Sewer Servicing

Sanitary sewers will connect to the Town's existing system by tying into two existing sanitary stubs located at the end of Woodbine Avenue and Willow Road (See **Figure 12.0 – Sanitary Servicing Plan**). The internal sanitary collection system will be a conventional gravity system constructed to lines and grades as per current standards. Topography dictates the sewer mains for the lands east of the northwest wetland drain to a low point at the south end of the northeast wetland. A lift station, complete with auxiliary power, and a force main will be constructed to pump the sewage uphill into the proposed collection main in Broadway Avenue near the south boundary of the development. A gravity main will be constructed from this location to the two connection points in Harvest Meadows.

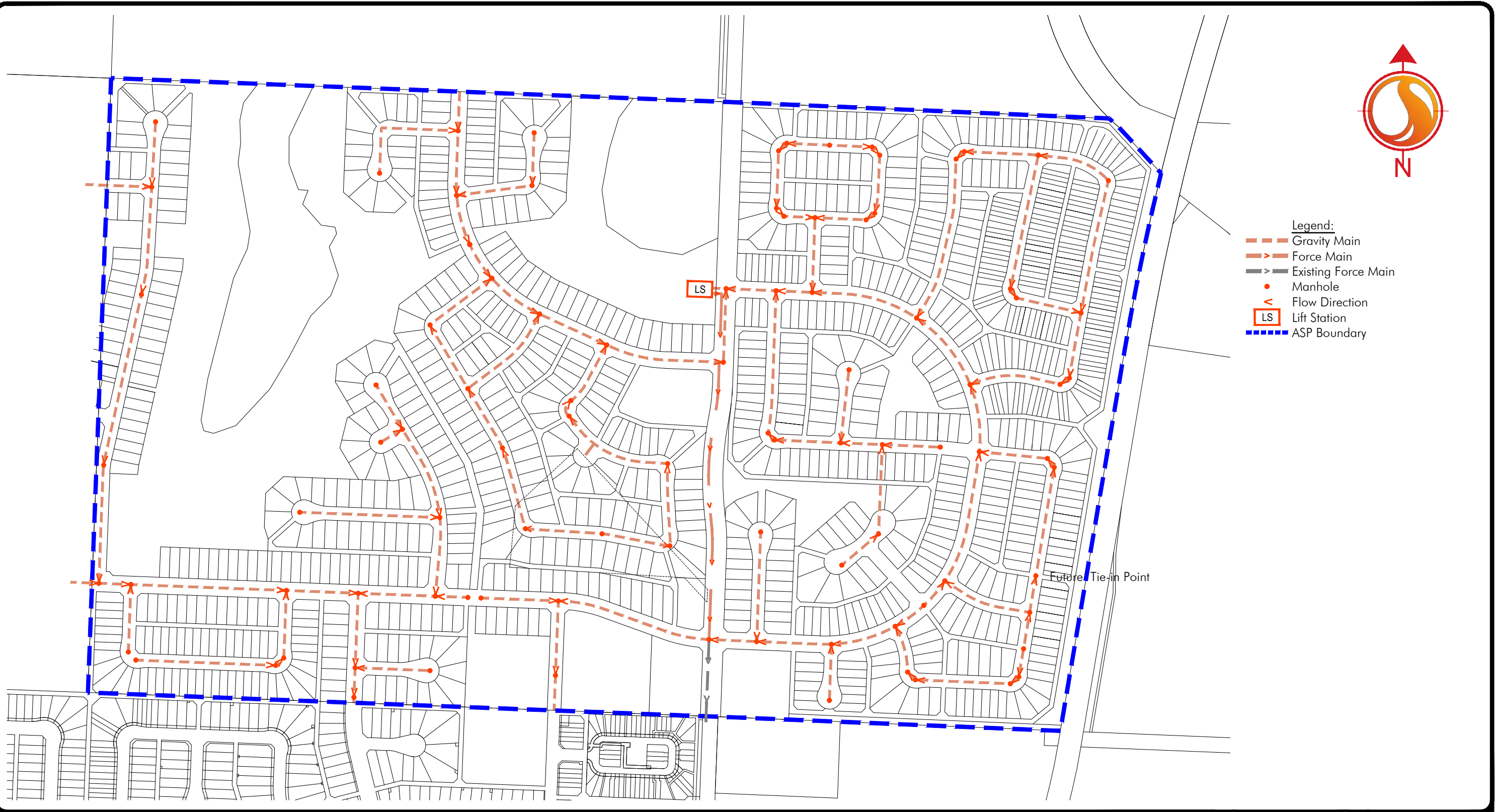
As shown in **Figure 12.0 – Sanitary Servicing Plan** the majority of the east quarter will drain towards the proposed lift station where it will be pumped to the gravity system in Broadway Avenue. The existing Alderwood Close and phase 1 in the east quarter will be drained by gravity to Broadway Avenue.

5.3 Water Distribution

Figure 13.0 – Water Servicing Plan provides the proposed water distribution system layout. Aurora Heights will connect to the existing water distribution system along Broadway Avenue, adjacent to the cemetery. The internal distribution system will be looped as required with provisions to loop to future development areas. Water mains will be sized to accommodate peak domestic use as well as fire flow requirements.

5.4 Shallow Utilities

The applicable shallow utility franchises have been contacted regarding this ASP including natural gas, power distribution, telephone and communication, and cable television. In general, the sight is serviceable for all utilities through expansions of their existing facilities located adjacent to or nearby the Plan Area.



- Legend:
- Gravity Main
 - Force Main
 - Existing Force Main
 - Manhole
 - Flow Direction
 - Lift Station
 - ASP Boundary

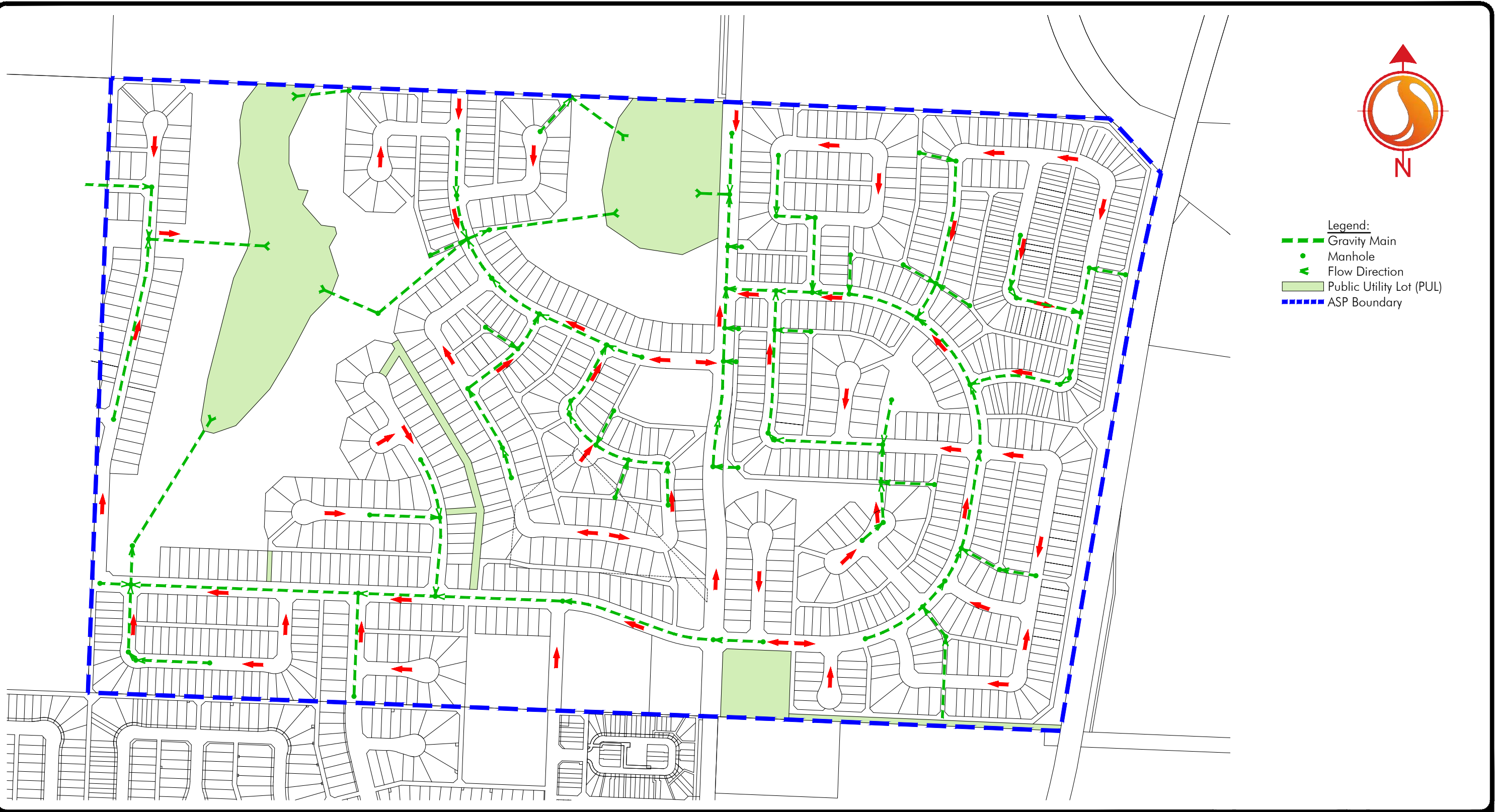
Figure 11.0
 Sanitary Servicing Plan
 Aurora Heights

Prepared for:
 Aurora Heights Inc.
 Blackfalds, Alberta

DRAWN BY: SAS
 CHECKED BY: GCL
 SCALE: 1:5,000
 PROJECT #: 112849436

#1100, 4900-50th Street, Red Deer, AB T4N1X7
 Ph: (403) 341-3320 Fx: (403) 342-0969

November, 2013



- Legend:
- Gravity Main
 - Manhole
 - Flow Direction
 - Public Utility Lot (PUL)
 - - - - ASP Boundary

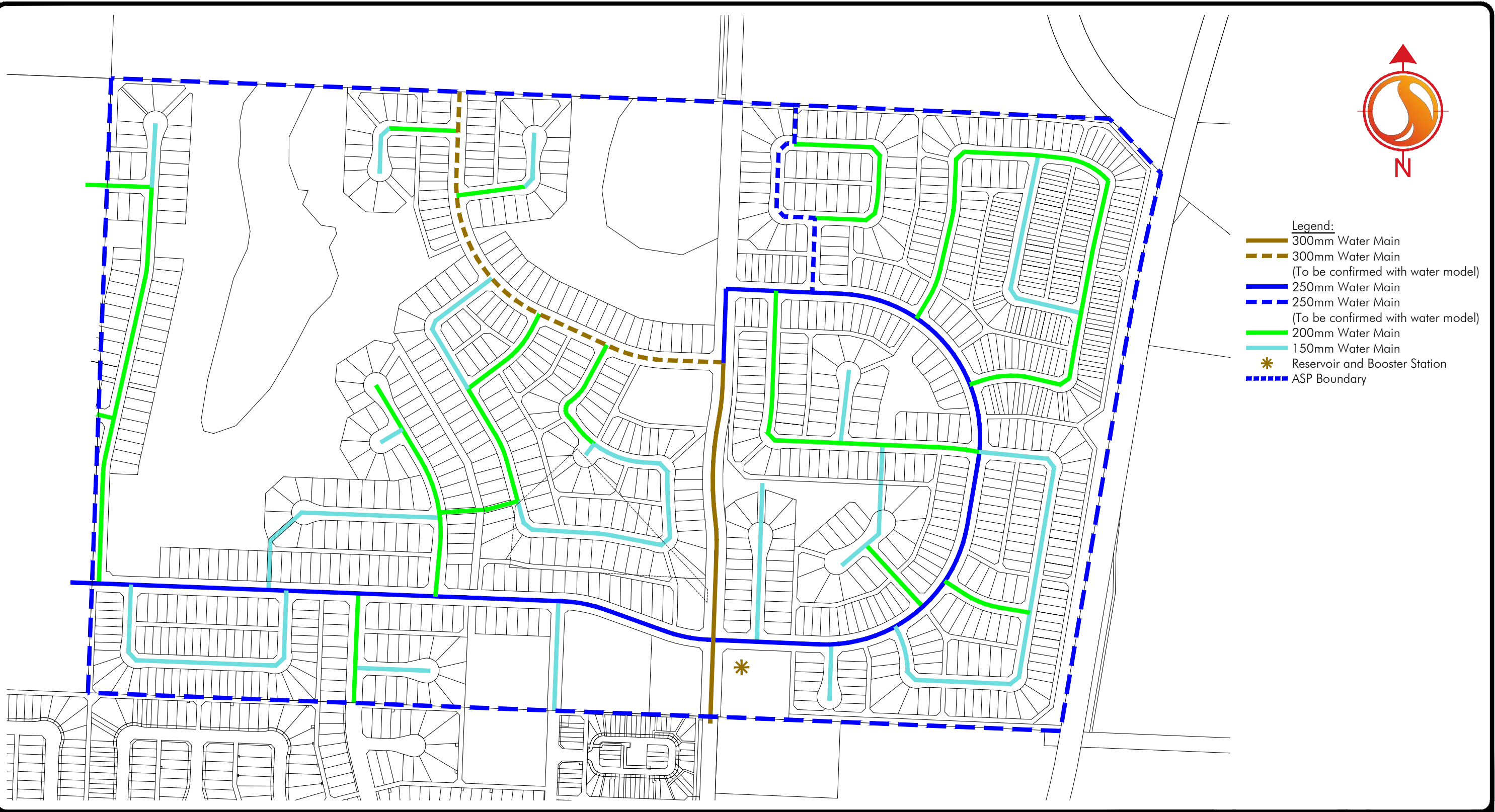
Figure 12.0
 Storm Servicing Plan
 Aurora Heights

Prepared for:
 Aurora Heights Inc.
 Blackfalds, Alberta



DRAWN BY: SAS
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November, 2013



- Legend:**
- 300mm Water Main
 - - - 300mm Water Main (To be confirmed with water model)
 - 250mm Water Main
 - - - 250mm Water Main (To be confirmed with water model)
 - 200mm Water Main
 - 150mm Water Main
 - * Reservoir and Booster Station
 - - - ASP Boundary

Figure 13.0
 Water Servicing Plan
 Aurora Heights

Prepared for:
 Aurora Heights Inc.
 Blackfalds, Alberta



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 CHECKED BY: GCL
 SCALE: 1:5,000
 PROJECT #: 112849436

November, 2013

AURORA HEIGHTS AREA STRUCTURE PLAN

Municipal Servicing

Amendment: November 21, 2013

5.5 Lot Grading

Individual lots within the development will be graded to provide positive drainage away from the house foundation. House grades must be set a minimum of 0.3m above any surface water level during extreme storm events.

Basement footing elevations should be a minimum of 300.0mm above the groundwater elevations. The geotechnical investigation found groundwater depths generally 4.5m to 6.0m below the surface. As a result, groundwater should not create a problem with house foundations; however, it is recommended that a weeping tile be installed around all basement foundations to ensure proper subsurface drainage

AURORA HEIGHTS AREA STRUCTURE PLAN

Plan Implementation

Amendment: November 21, 2013

6.0 PLAN IMPLEMENTATION

The Area Structure Plan for the Aurora Heights area will be implemented in accordance with the Town of Blackfalds redistricting and subdivision approval processes.

6.1 Development Staging

Figure 13.0 – Phasing Plan identifies a proposed staging for this area. Both parcels have been included in an overall staging plan. The staging is estimated and may be subject to change as each parcel will develop at its own respective schedule. Temporary water looping may be required in the first phases of construction until further phases come on line. The sanitary sewer lift station will be completed in the second phase of construction. The stormwater management facilities will be staged to accommodate each phase as it comes on line.

Access must be maintained throughout the development for traffic entering Blackfalds from the County via Broadway Ave. A tentative roadway phasing plan has been included on **Figure 14.0 – Phasing Plan**.

6.2 Redistricting and Subdivision

Redistricting and subdivision applications to conform to the land use designations described in the ASP will be undertaken as necessary. Guided by the Town of Blackfalds MDP, redistricting and subdivisions will be required to adhere to the Town of Blackfalds Land Use Bylaw and the informational requirements necessary for each application.

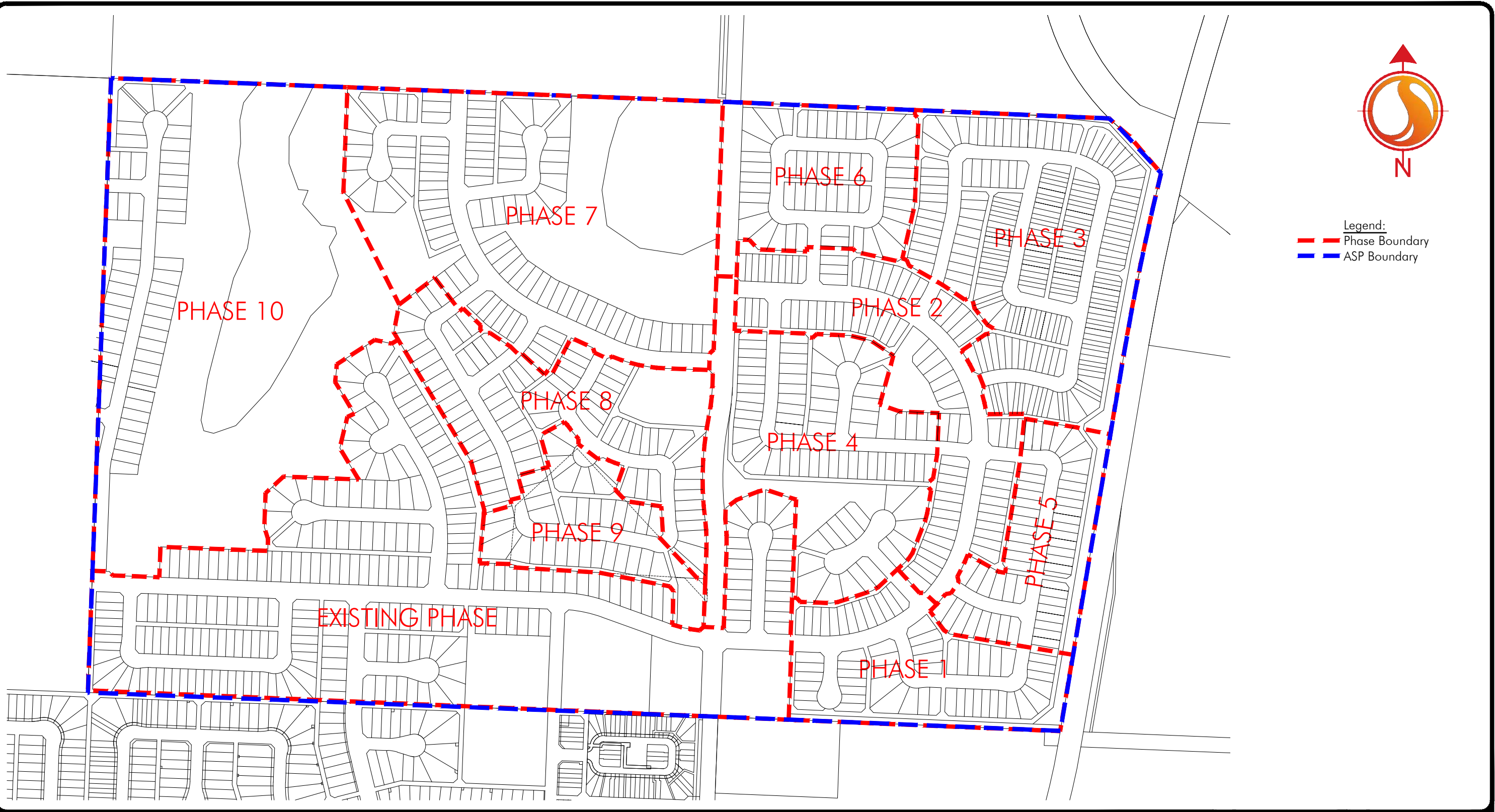


Figure 14.0
Phasing Plan
Aurora Heights

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