

Aspen Lakes West Area Structure Plan

Town of Blackfalds

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introduction

1.1 PURPOSE

The purpose of the Aspen Lakes West Area Structure Plan (ASP), previously referred to as the Maclab Area Structure Plan, is to describe the land use framework and development objectives for the east half of SW ¼ Sec. 34, Twp. 39, Rge. 27, W4M and part of the SE ¼ Sec. 34, Twp. 39, Rge. 27, W4M, located in the northwest corner of the Town of Blackfalds. The Aspen Lakes West Plan Area encompasses approximately 32.67 hectares (80.73 acres).

On behalf of Brentwood Developments, Stantec Consulting Ltd. has prepared the Aspen Lakes West Area Structure Plan, as an amendment to the existing Maclab Area Structure Plan which was prepared by Associated Engineering and adopted by Town Council in 2008.

1.1.1 2014 AMENDMENT

The Maclab Area Structure Plan was originally approved by the Town of Blackfalds Council in 2008, no subsequent construction was completed. Since this time, the Town of Blackfalds has seen significant growth averaging approximately 6.9% population increases each year; notably higher than Alberta's average of 2.5%. This growth in Blackfalds has created a change in market conditions and desired product types seen throughout the region. The changing conditions in the region has led to the

amendment of this document.

This amendment is intended to update the overall concept for the Maclab Plan Area, hereafter referred to as the Aspen Lakes West Plan Area. In the updated concept, land uses have been changed to reflect different housing product types, the roadway network has been realigned to provide better connectivity to surrounding areas, and the size of the manufactured home area has been reduced.

Additionally, since the Maclab ASP's approval, it was determined that the stormwater management facility identified in the adjacent community could not accommodate flows from this development; therefore, a stormwater management facility has been added within the Plan Area.

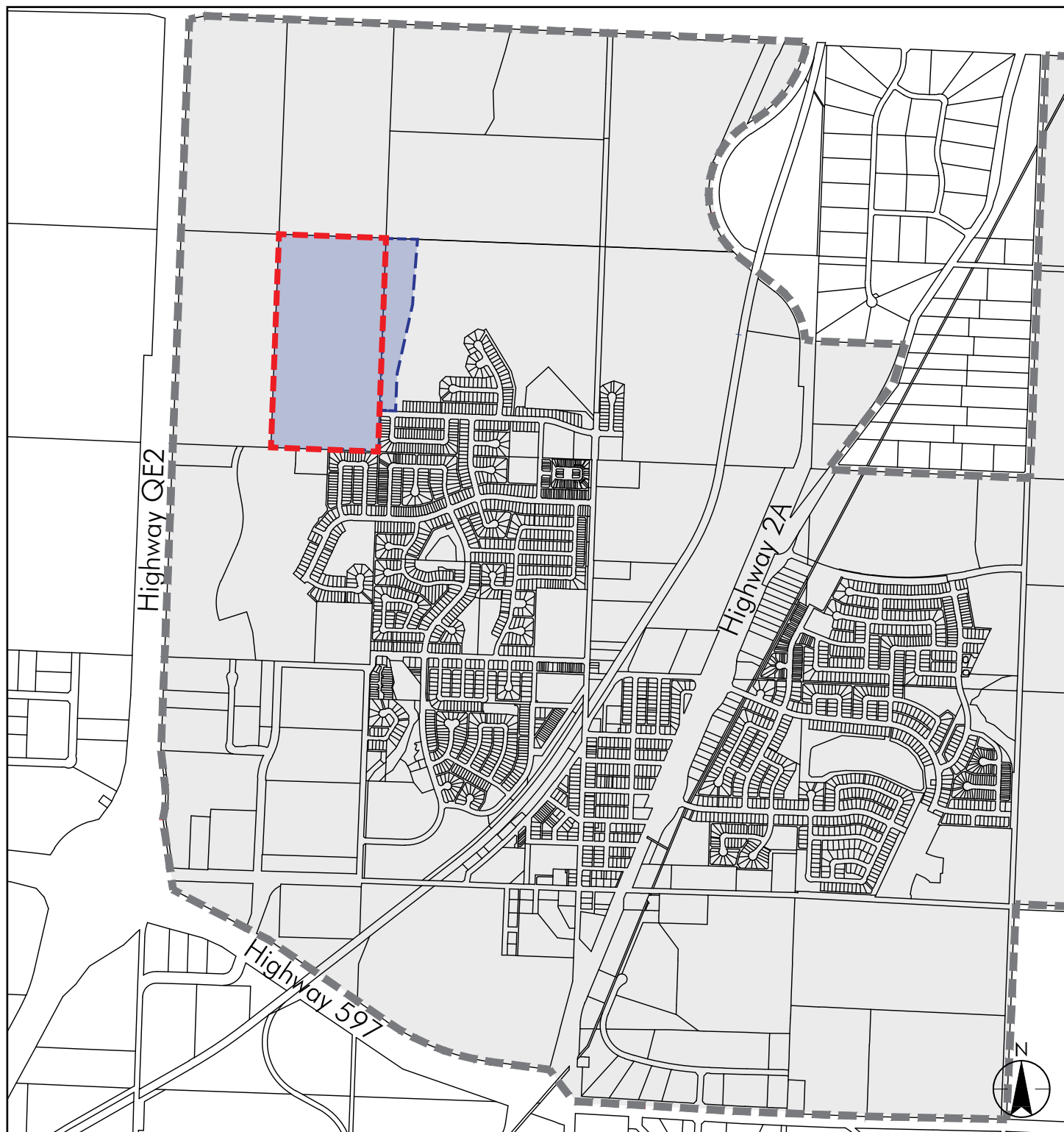
1.2 PLAN AREA

Aspen Lakes West is located on the northwest edge of the Town of Blackfalds, as shown in **Figure 1 – Location Plan** and **Figure 2 - Legal Boundary**, and is legally described as the east half of SW ¼ Section 34, Township 39, Range 27, West of the 4th Meridian.

1.2.1 PLANNING BOUNDARY VS AREA STRUCTURE PLAN BOUNDARY

For the purpose of providing comprehensive and logical planning for the entire northwest Blackfalds area, a portion of Aurora Heights has been included in the "Planning Boundary" of Aspen Lakes West. This area is covered under the approved Aurora Heights Area Structure Plan and is therefore not included in the Aspen Lakes West Area Structure Plan Boundary.

The inclusion of this site is further discussed in **Section 1.4.2 - Aurora Heights**.



Legend



Planning Boundary

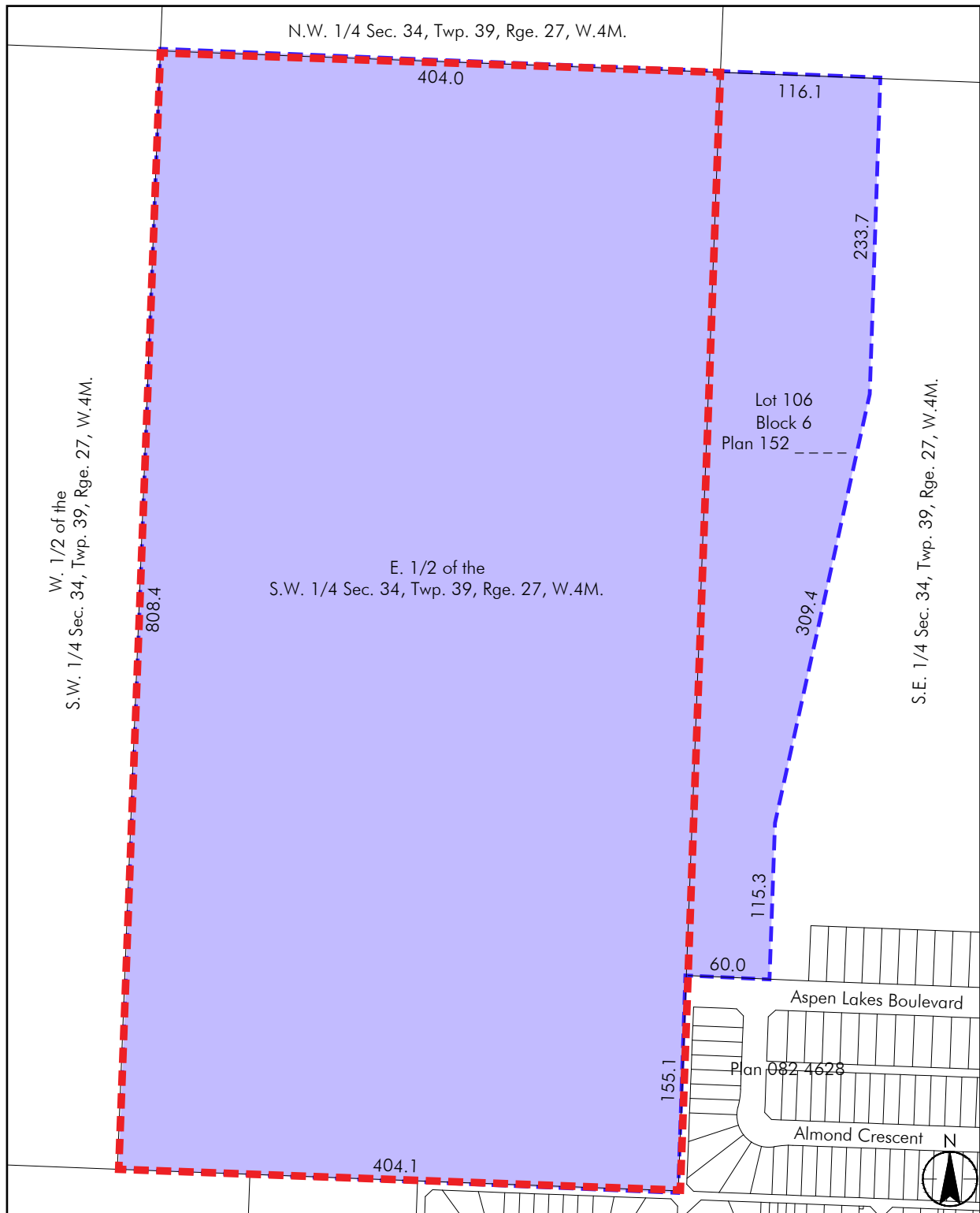


Area Structure Plan Boundary



Town of Blackfalds Boundary

figure 1 - location plan



Legend



Planning Boundary



Area Structure Plan Boundary

figure 2 - legal boundary

1.3 POLICIES AND RELEVANT PLANNING DOCUMENTS

The Aspen Lakes West Area Structure Plan has been prepared using the guidelines and policies set forth by the Town of Blackfalds for the development of new areas. In addition, the following relevant documents have been reviewed and referenced in preparation of this Area Structure Plan:

- Town of Blackfalds Municipal Development Plan (2009)
- Town of Blackfalds Land Use Bylaw (2009)
- Town of Blackfalds 2007 Master Plan
- Town of Blackfalds Transportation Study (2003)
- Town of Blackfalds Facilities and Needs Assessment (2008)
- North Blackfalds Area Structure Plan (2007)
- Aurora Heights Area Structure Plan (2013)

Information outlined in these documents, as it relates to this Plan Area, is described below.

1.3.1 MUNICIPAL DEVELOPMENT PLAN

The Town of Blackfalds Municipal Development Plan (MDP) is intended to serve as a common guide to promote orderly development which is appropriate, sustainable, efficient, and enhances opportunities for businesses and the quality of life of residents.

The Aspen Lakes West Plan Area was identified in the MDP for residential development with the following policies. These policies have been referenced in the creation of the Aspen Lakes West ASP as they will specifically shape the development:

- Residential density for new neighbourhoods shall be a minimum of 10 residential units per gross developable hectare (4 per gross developable acre).
- 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 require a mix of housing types and forms in all residential neighbourhoods and avoid excessive concentration of any single type of housing.
- Multiple family housing sites should not exceed 1.75 hectares (4.32 acres) unless special site characteristics or design features will reasonably accommodate large sites within the context of

the characteristics of the neighbourhood and surrounding land uses.

- Except apartments, densities on multiple family housing sites should not exceed 30 units per net hectare (12 units per net acre).
- Manufactured homes may be permitted only:
 - » on individual lots and only when part of a comprehensively designed manufactured home subdivision that is suitably integrated with the design and character of the residential neighbourhood.
- A variety of parks, including tot lots and playgrounds, must be integrated into residential development areas.
 - » Playgrounds and tot lots should be located on local residential streets and accessible to the immediate neighbourhood
 - » Neighbourhood parks should be centrally located and accessible to the entire neighbourhood.
- For all new development, the provision of open spaces shall be guided by the Facility and Parks Needs Assessment Master Plan or as otherwise provided for in an approved Area Structure Plan.
- The Town will encourage the development of an integrated trail system for pedestrians and/or bicycles to provide linkages between open spaces, community facilities, schools, and the central commercial core and housing areas.
- In residential subdivisions, rear lanes are to be provided unless an Area Structure Plan approved by Council provides for laneless lots, usually adjacent to parks and natural open spaces.

1.3.2 TOWN OF BLACKFALDS LAND USE BYLAW

The Town of Blackfalds Land Use Bylaw (LUB) describes all available land use districts to be utilized throughout the Town. The existing Land Use Bylaw is reflective of the previously approved Maclab Area Structure Plan; therefore, it identifies the Aspen Lakes West Plan Area as primarily a manufactured home residential district.

It is intended that the uses currently identified for the Aspen Lakes West Plan Area will be replaced with those described in this ASP.

1.3.3 TOWN OF BLACKFALDS DESIGN GUIDELINES

The Town of Blackfalds Design Guidelines (2011) lays out the Town's standards regarding subdivision design,

servicing, and the construction approval processes. All development within the Plan Area will be designed in accordance with the Town's Design Guidelines.

1.3.4 TOWN OF BLACKFALDS FACILITIES AND NEEDS ASSESSMENT

The purpose of the *Blackfalds Facility and Parks Needs Assessment Master Plan* was to help guide Town Council and administration in the future provision of community facilities, parks, open spaces, and programs. The following items were identified in the Assessment which may impact the development of Aspen Lakes West's open spaces:

- Non-motorized trails, picnic areas, and child playgrounds were noted as high priorities with the Blackfalds community
- The TransCanada Trail was identified for development with a portion of the trail constructed along the west side of the Aurora Heights storm pond, and south through Aspen Lakes West.

1.3.5 TOWN OF BLACKFALDS 2007 MASTER PLAN

The *Town of Blackfalds 2007 Master Plan* identifies all future servicing layouts for the Town including roadway alignments, sanitary servicing, water servicing, and stormwater drainage. All development within the Plan Area will be designed to respect the proposed servicing shown in this Master Plan.

1.3.6 TOWN OF BLACKFALDS TRANSPORTATION STUDY

The 2003 Transportation Study was created to update the known transportation requirements for the Town of Blackfalds due to an increased population, and development of new residential areas on the east side of Highway 2A.

1.4 ADJACENT PLANNING AREAS

1.4.1 VALLEY RIDGE ESTATES

Valley Ridge Estates, located south of the Plan Area is primarily low density residential homes. A park site located along the north boundary of the development has been considered to provide consistency by continuing the open space network into Aspen Lakes West.

1.4.2 AURORA HEIGHTS

Aurora Heights is located east of the Aspen Lakes West development. The location of Aurora Heights's roadway network and stormwater management facilities has isolated a small portion of the Aurora Heights neighbourhood making it a logical addition to the Aspen Lakes West community. For this reason, a portion of Aurora Heights is currently being considered for comprehensive planning with the Aspen Lakes West development.

This area is shown on **Figure 3 - Planning Boundary** as within the Aspen Lakes West Planning Boundary; however, as it is currently covered under the approved Aurora Heights Area Structure Plan, it is located outside of the Aspen Lakes West Area Structure Plan Boundary. Its inclusion is intended to guide development of the site, land use redesignation, subdivision, and facilitate consistency within the two communities.



Legend

- Aurora Heights Area Structure Plan Boundary
- Aspen Lakes West Planning Boundary

- Aspen Lakes West Area Structure Plan Boundary
- Town of Blackfalds Boundary

figure 3 - planning boundary

background

2.1 EXISTING CONDITIONS

2.1.1 TOPOGRAPHY

As shown on **Figure 4 - Existing Conditions**, the Aspen Lakes West Plan Area is characterized as having gently rolling hills and is currently fenced off into pasture sections. Generally, the Plan Area drains from west to east with the ground surface elevation ranging from approximately 870.0m to 878.0m. There are significant slopes in the southern portion of the Plan Area, the most considerable of which surround the low point.

Areas in the northeast portion of the Plan Area also have low depressions sloping towards the wetland to the east.

2.1.2 VEGETATION

With the exception of lightly treed areas along the east boundary of the Plan Area, the land is mostly cleared.

2.1.3 SOILS

As indicated in the Preliminary Geotechnical Site Investigation, prepared by Parkland Geotechnical Consulting Ltd. attached in Appendix B, the soil profile encountered in the Plan Area included topsoil and extensive deposits of fine grained sand and sandy silt with occasional zones of interbedded silt and clay. This

is considered to be the typical soil profile in this area. Based on the investigation, the Plan Area is suitable for residential development.

2.2 HISTORIC AND CURRENT LAND USE

The Plan Area is undeveloped land currently used for agricultural purposes.

The Alberta Listing of Historic Resources (September 2013) does not identify the Plan Area for historical resources; as such, the Developer has obtained clearance for the development of the site, dated November 23, 2014.

2.3 ENVIRONMENTAL SITE ASSESSMENT

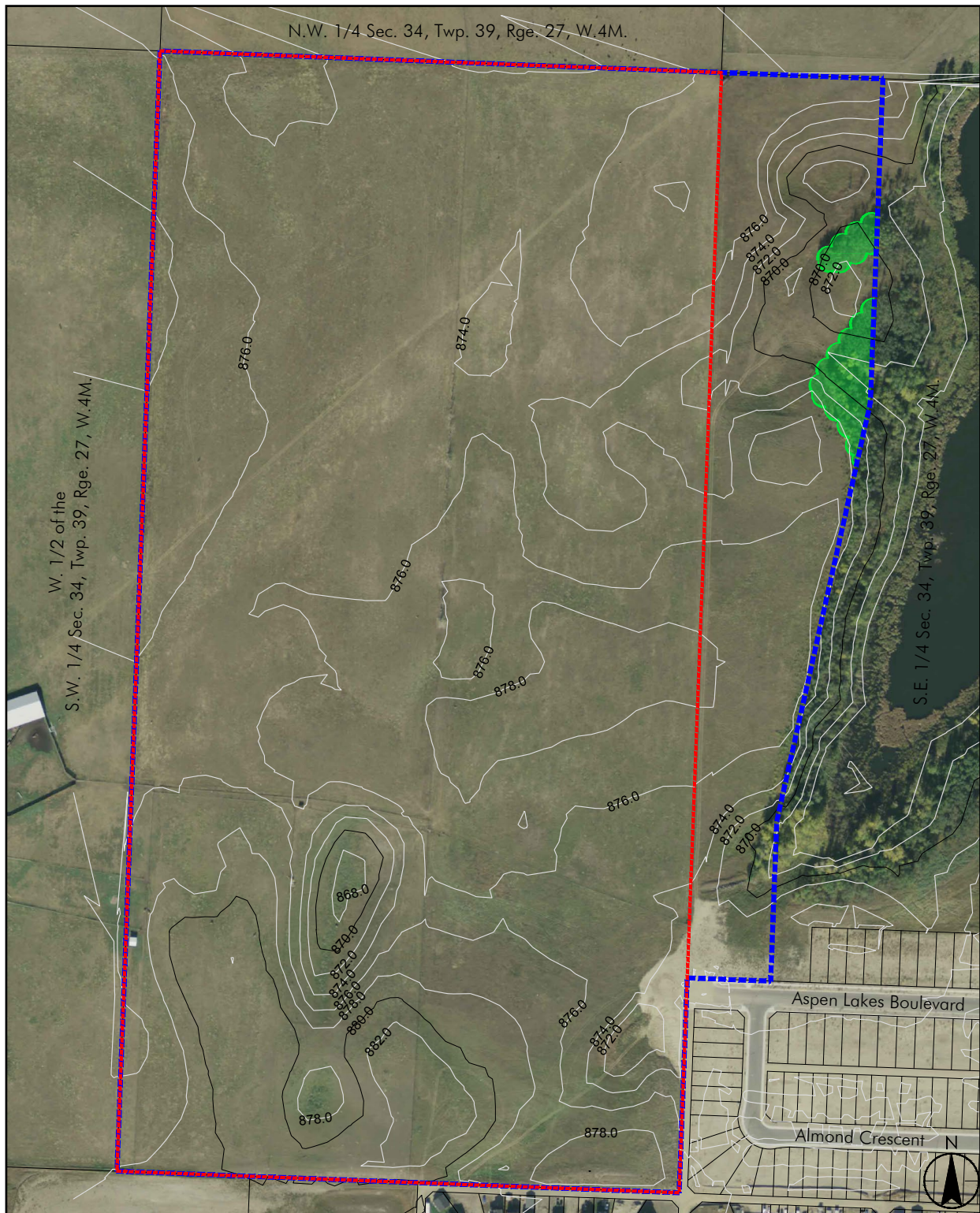
A Phase 1 Environmental Site Assessment for the subject site was completed by Parkland Geotechnical Consulting Ltd. in 2006. Based on this Phase 1 ESA, the Plan Area was given a rating of “low” in terms of environmental risk.

2.4 ADJACENT AND SURROUNDING DEVELOPMENT

The lands to the north and west of the Plan Area are undeveloped and currently used for agricultural purposes with an existing homestead located west of the Plan Area. Lands to the south and east of the Plan Area are being developed as residential subdivisions.

2.5 EXISTING UTILITIES

There are no existing utilities located on the Plan Area.



Legend

- | | | | |
|---|----------------------|---|------------------------------|
|  | Topographic Contours |  | Planning Boundary |
|  | Existing Vegetation |  | Area Structure Plan Boundary |

figure 4 - existing conditions

development concept

3.1 OBJECTIVES

Aspen Lakes West has been designed to be consistent with the policies and design principles as identified in the *Town of Blackfalds's Municipal Development Plan*. In addition, the following objectives have been used.

- Create the Aspen Lakes West ASP as a framework to deliver a high quality, comprehensively planned residential area.
- Ensure uses are complementary by considering those existing located adjacent to the Plan Area.
- Accommodate the Plan Area's natural features.
- Identify development stages to allow for logical construction progression.



3.2 RESIDENTIAL

Provide a mix of housing types and forms. Ensure residential density is a minimum of 10 residential units per gross developable hectare. Ensure all multi-family sites are a maximum of 1.75ha. Utilize master planning to incorporate manufactured home areas.

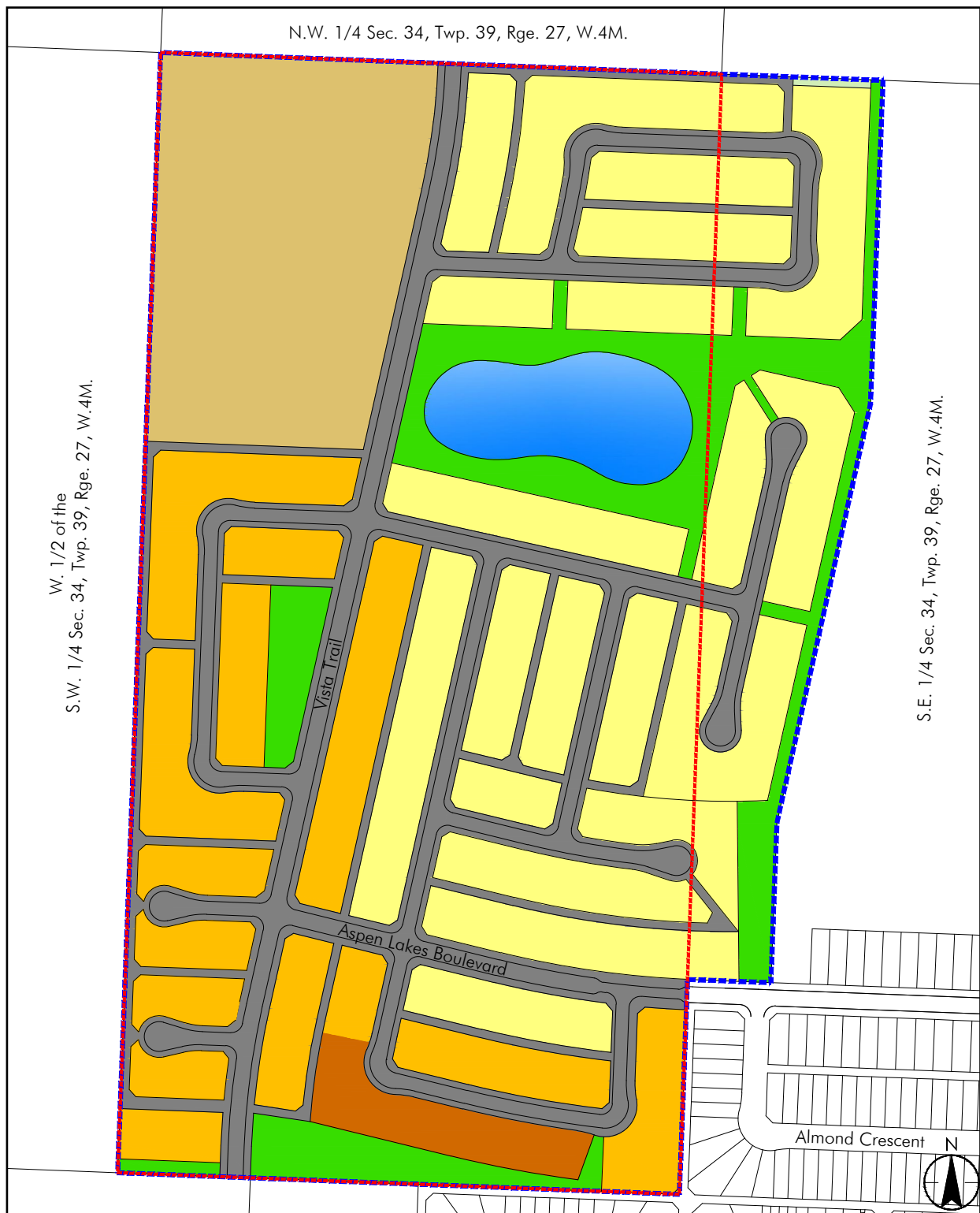
As described below and shown on **Figure 5 - Concept Plan** and **Figure 6 - Concept Plan with Aerial**, a wide range of housing types and styles are proposed within Aspen Lakes West to provide housing choices for a range of income levels, age groups, and family types.

In addition to accommodating a broad spectrum of Blackfalds's population, the Aspen Lakes West community will showcase the style of Central Alberta through the use of Craftsman architecture. Characterized by wood detailing, low-pitched side gable roofs, wide overhangs, and exposed roof-rafter ends; Craftsman homes were popular in Alberta between 1905-1945 with a more recent resurgence. This style has also been

used throughout Blackfalds's downtown revitalization projects.

The overall housing density for Aspen Lakes West is envisioned to be 17.26 du/ha (6.99 du/ac). A full breakdown of land use calculations is shown in Appendix A.





Legend

R1M Medium Lot Residential

R-MHP Manufacture Home Park

----- Planning Boundary

R2 Multi-Dwelling (Duplex)

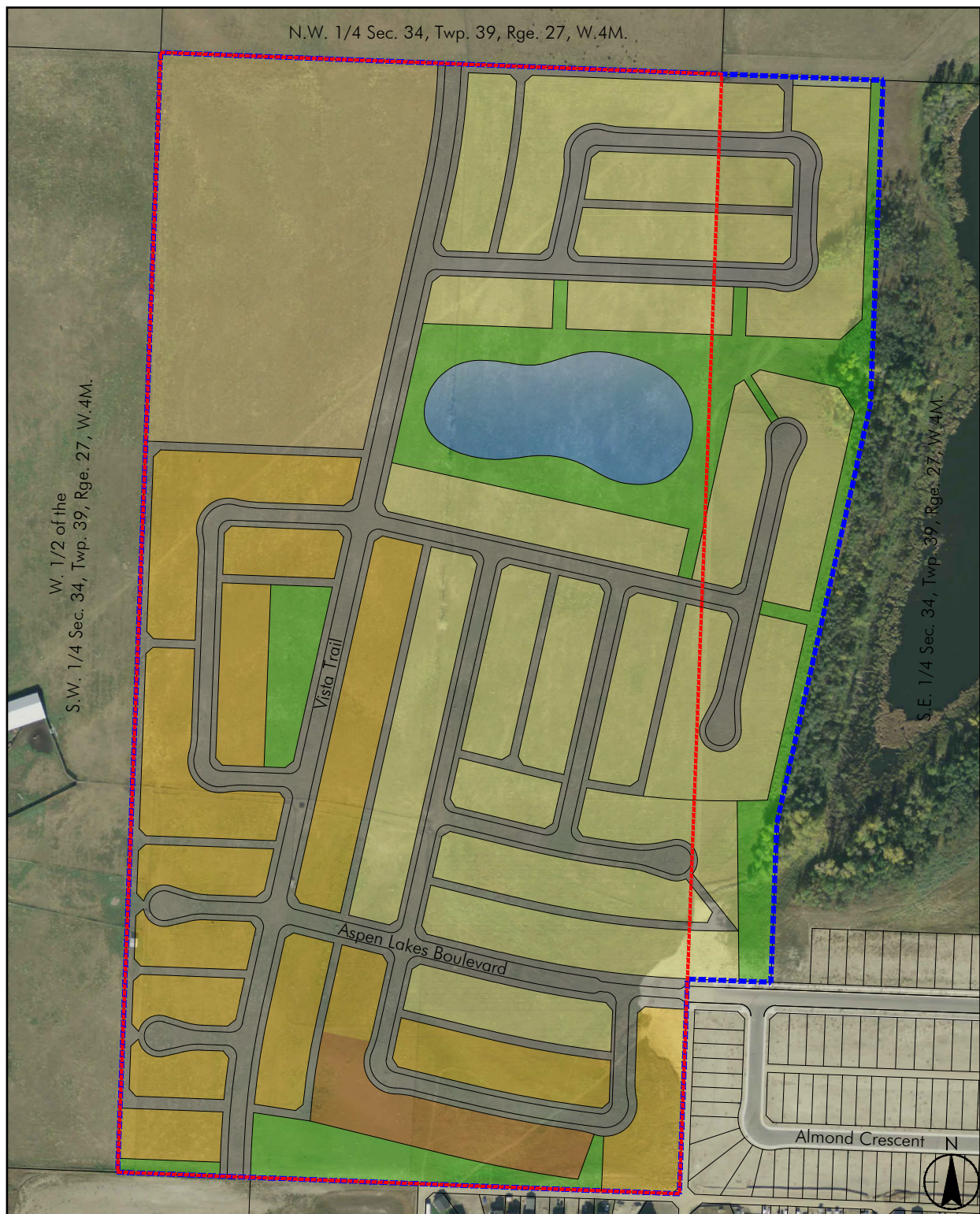
Municipal Reserve (MR)

----- Area Structure Plan
Boundary

R2 Multi-Dwelling (Townhome)

Stormwater Management Facility (PUL)

figure 5 - concept plan



Legend









	R1M Medium Lot Residential		R-MHP Manufacture Home Park		Planning Boundary
	R2 Multi-Dwelling (Duplex)		Municipal Reserve (MR)		Area Structure Plan Boundary
	R2 Multi-Dwelling (Townhome)		Stormwater Management Facility (PUL)		

figure 6 - concept plan with aerial

3.2.1 R-1M RESIDENTIAL SINGLE DWELLING MEDIUM LOT

Approximately 8.51ha (21.03ac) of the Plan Area will be developed for medium lot residential homes using the Residential Single Dwelling Medium Lot District (R-1M). These lots are located along the east portion of the Plan Area to reflect the housing in Aurora Heights.

Typical housing styles in the R-1M district include bungalow, bi-level, and 2-storey homes with or without front attached garages. Should homes not include front attached garages, on-site parking spaces will be provided at the rear of the lot via a parking pad or detached garage.

The minimum lot width for this district is approximately 12.5m with a minimum area of 460m².



3.2.2 R2 MULTI-DWELLING RESIDENTIAL

Approximately 7.19 ha (17.76 ac) of the Plan Area is planned for medium density residential uses using the Residential Multi-Dwelling District (R-2).

The R2 district has been used to accommodate a growing demand for multi-dwelling housing. Housing types envisioned for location in this area include some semi-detached homes although the majority will be row housing. These styles of multi-family housing provide a more affordable housing option while offering residents private amenity space and often attached garages.

As per the Town of Blackfalds's Land Use Bylaw, on-site parking will be provided via either front attached garage, rear parking pads, or rear detached garages.



3.2.3 R-MHP RESIDENTIAL MANUFACTURED HOME PARK

Approximately 5.09ha (12.58ac) of the Plan Area, located within the northeast corner of the site, will be developed for a manufactured home community using the Residential Manufactured Home Park District (R-MHP). This area has been reduced from 11.58 ha (28.62 ac) as identified in the Maclab ASP.

Manufactured homes are single dwelling unit buildings that are manufactured off-site and can be transported to a suitable site where it becomes part of a surface foundation. This style of housing provides a more affordable housing opportunity to residents as it enables homeowners to purchase their home while leasing their lot. The manufactured home area will be privately owned with internal roadways, snow clearing, and garbage pick-up, and professionally managed by a land lease community. With the average age of the population increasing, this type of housing is becoming more popular for those looking to downsize or snowbirds who spend part of the year abroad.

As per the Town of Blackfalds's Land Use Bylaw, all manufactured homes must have a size, form, and external appearance that is acceptable to the Development Authority in order to establish a superior standard of quality in the community. Some of the guidelines identified by the Town of Blackfalds regarding this review include the following:

- all homes must be of new construction
- homes must have a minimum roof pitch of 4:12
- homes must have a roof surface of wood or asphalt shingles, clay or concrete tiles, slate or wood shakes
- homes must have a minimum roof overhang or eaves of 0.4m from each external wall
- homes must have a length to width ratio of 3:1

In addition to all regulations set by the Town of Blackfalds, all manufactured homes will be subject to strict architectural controls, maintenance requirements, age restrictions, and landscape requirements. To complement the surrounding Aspen Lakes West community, manufactured homes will include architectural styles and facade treatments similar and reflective of homes found elsewhere in the community.

As per the municipal regulations, a local recreation area totaling a minimum 5% of the land use area will be located within the manufactured home park. This area will be programmed with play equipment or other recreational items determined in coordination with the Town of Blackfalds. In addition, a common storage area will be provided to house seasonal or recreational equipment not capable of being stored on individual parcels. A common fence will also be placed surrounding the park to ensure a consistent screening between this and other uses. This fence will be constructed of high quality materials and be the responsibility of the park operator to maintain.

All roadways in the manufactured home park will be private in nature with the condo association taking responsibility for maintenance, replacement, snow clearing, and garbage removal.

The minimum parcel area for an interior unit in this district is 460m².



3.3 OPEN SPACES

Integrate a variety of parks, including tot lots and playgrounds. Centrally-locate neighbourhood parks. Incorporate non-motorized trails, picnic areas, and children's playgrounds. Connect trails to the TransCanada trail located east of the Plan Area.

As shown on **Figure 7 - Open Space Network**, three main park spaces have been located in Aspen Lakes West. These parks have been distributed throughout the neighbourhood to ensure convenient access by all residents and supplement park spaces in adjacent neighbourhoods to provide larger and more usable areas.

A primary neighbourhood park has been located in the north central portion of the Plan Area which will accommodate a stormwater management facility, children's play structure, passive recreation space, and pedestrian trail connections. This park is also envisioned as a local destination for residents to engage in passive recreational uses such as dog walking, playing catch, picnics, etc.

A secondary park space has been located along the west portion of Vista Trail. As shown on **Figure 8 - West Park Detail**, this area will be designed with an active recreation element either for children or adults, as determined by the Town of Blackfalds. In addition, passive recreation open spaces and trail connections will be provided.

There are also two parks that have been identified along the south and east boundaries of the Plan Area. These parks are intended to supplement those located in adjacent neighbourhoods to provide larger and more usable open spaces. These park spaces will be developed with pedestrian trail connections and periodic rest and refuse areas.

All park spaces will be developed with the inclusion of trails to accommodate passive recreation for residents. As per the Town's Facilities and Needs Assessment, picnic spaces and children's play structures may be included in these areas; however, such programming will be done during the time of detailed design based on the requirements and preferences of the Town of Blackfalds.

3.3.1 MUNICIPAL RESERVES

As identified in **Table 1 - Aspen Lakes West Municipal Reserve Dedication**, a total of 2.56 ha (6.33 ac) has been dedicated as Municipal Reserve. Although this amount is under the required 10%, the adjacent community of Aurora Heights has provided an excess of Municipal Reserve which balances out this deficit as shown in **Table 2 - Municipal Reserve Calculation for Aspen Lakes West and Aurora Heights**.

Table 1- Aspen Lakes West Municipal Reserve Dedication.

Municipal Reserve Dedication	Area (ha)	Area (ac)	% of MR Developable Area
Gross Plan Area	32.67	80.73	
Environmental Reserve	0.00	0.00	
MR Developable Area	32.67	80.73	100.00%
Required MR Dedication	3.27	8.07	10.0%
Actual MR Dedication	2.56	6.33	7.8%

Table 2 - Combined Municipal Reserve Calculation for Aspen Lakes West and Aurora Heights.

Municipal Reserve Dedication	Area (ha)	Area (ac)	% NDA
Gross Plan Area- Aspen Lakes West	32.67	80.73	
Gross Plan Area- Aurora Heights	107.45	265.51	
Total Gross Plan Area	140.12	346.24	
<i>Environmental Reserve - Aspen Lakes West</i>	0.00	0.00	
<i>Environmental Reserve - Aurora Heights</i>	1.08	2.67	
Total Net Developable Area	139.04	343.57	100.0%
Required MR Dedication	13.90	34.36	10.0%
<i>Actual MR Dedication - Aurora Heights</i>	<i>19.54</i>	<i>48.28</i>	
<i>Actual MR Dedication - Aspen Lakes West</i>	<i>2.56</i>	<i>6.33</i>	
Total Actual MR Dedication	22.10	54.61	15.9%

3.3.2 TRAILS

As previously noted, a network of interconnected trails and sidewalks will form the pedestrian network for this community. The trail network is intended to provide off-street mobility options for residents that are active, safe, and connect to adjacent neighbourhoods.

TransCanada Trail

The TransCanada Trail spans east to west from Newfoundland to Vancouver Island and from Edmonton north to Inuvik in the Northwest Territories. Once completed, the TransCanada will connect nearly 1,000 communities across Canada. Since it's start in 1992, the TransCanada Trail is now 75% complete and Blackfalds is proud to include a portion of the Trail in their community. The TransCanada Trail runs through Town from north to south connecting Blackfalds with Red Deer and Lacombe and includes the only indoor portion of the trail in all of Canada.

As a portion of Blackfalds's TransCanada Trail connection, Aspen Lakes West will include a 3.0m paved multi-purpose trail near the east boundary of the development. This trail will continue into Aurora Heights to the east and Valley Ridge Estates to the south.

To identify the significance of this particular trail in the community, and provide directional identification for trail users, a unique wayfinding element will be included as shown on **Figure 9 - TransCanada Trail Alignment**.

To facilitate the continuation of this trail through residential areas, a 2.5m sidewalk will be provided. This connection will be separated from the roadway with boulevard plantings to increase user safety and trail durability.

Traffic calming will be used where the TransCanada Trail crosses the roadway in Aspen Lakes West to maximize pedestrian user safety. Methods of traffic calming will be determined in consultation with the Town of Blackfalds at the time of detailed design.



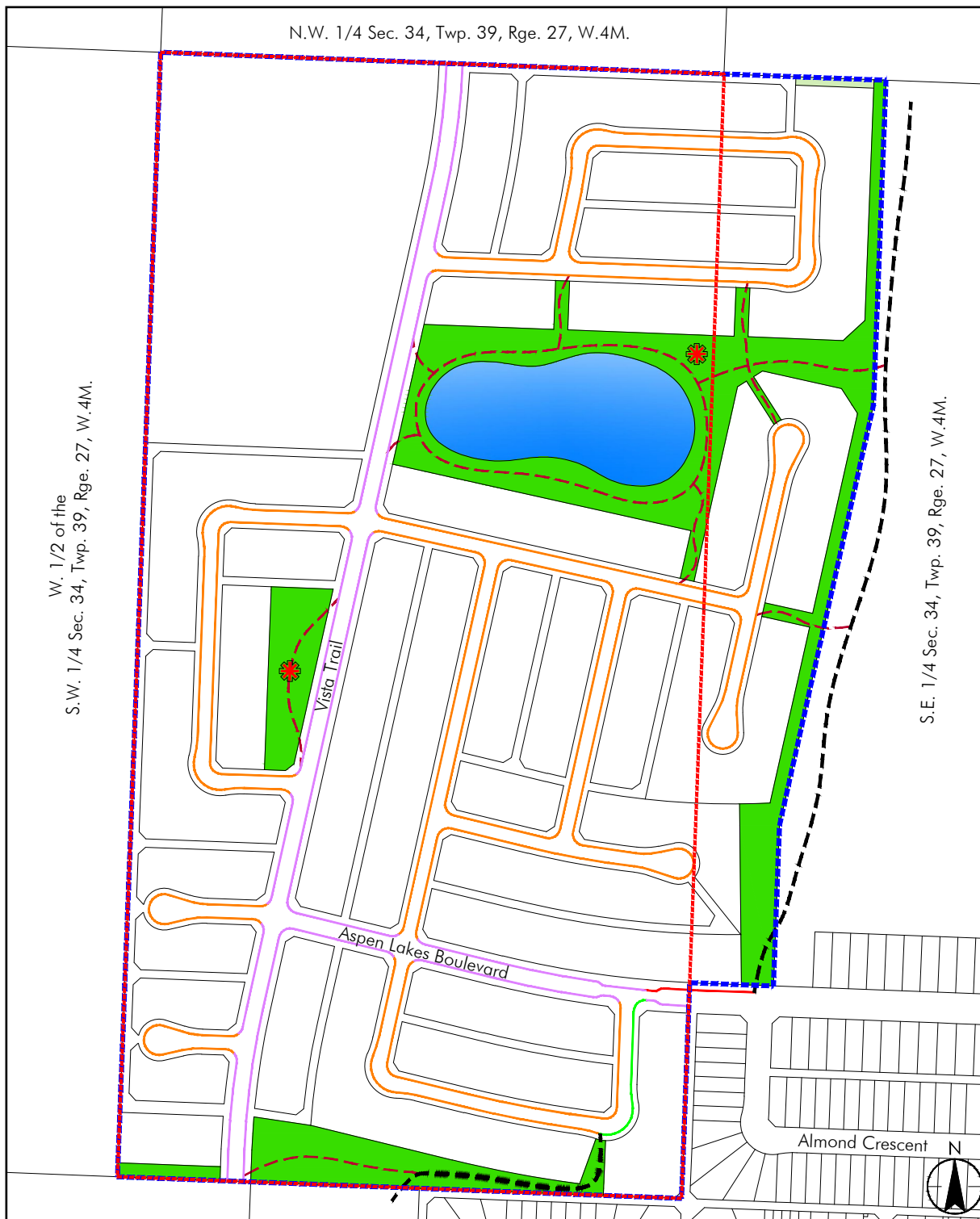
3.3.3 STORMWATER MANAGEMENT FACILITY

A stormwater management facility has been located in the north central portion of the Plan Area.

The inclusion of this facility is a change from the previously approved Maclab ASP which indicated all stormwater drainage from the development would be accommodated in the pond to the east of the Plan Area. Subsequent to the approval of the Maclab ASP, it was determined that the stormwater could not be accommodated in that pond. This is further discussed in **Section 4.2 - Stormwater System**.

The stormwater management facility identified in the Aspen Lakes West neighbourhood will be designed as a wet pond and will provide stormwater retention and passive recreation opportunities for residents. Passive recreation elements surrounding the facility will include pedestrian trail connections, seating nodes, and refuse containers.





Legend

	Municipal Reserve (MR)		TransCanada Trail (3.0m paved)		1.5m Monolithic Sidewalk
	Stormwater Management Facility (PUL)		TransCanada Trail Connection (2.5m Separated sidewalk)		1.5 Separated Sidewalk
	Community Amenity		TransCanada Trail Connection (3.0m Separated sidewalk)		Planning Boundary
	Off-Street Trail (2.5m paved)		Area Structure Plan Boundary		

figure 7 - open space network



figure 8 - west park detail

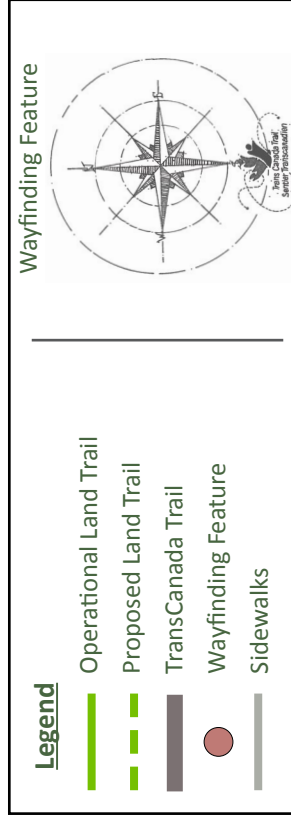
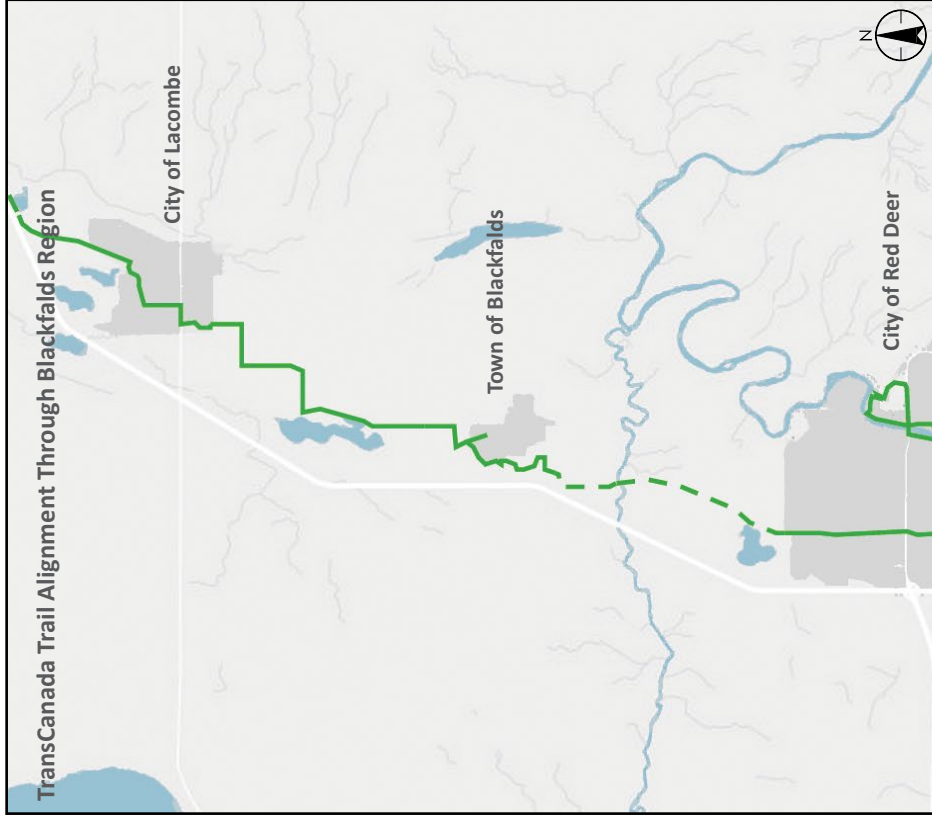


figure 9 - trans canada trail alignment

3.4 ROADWAYS

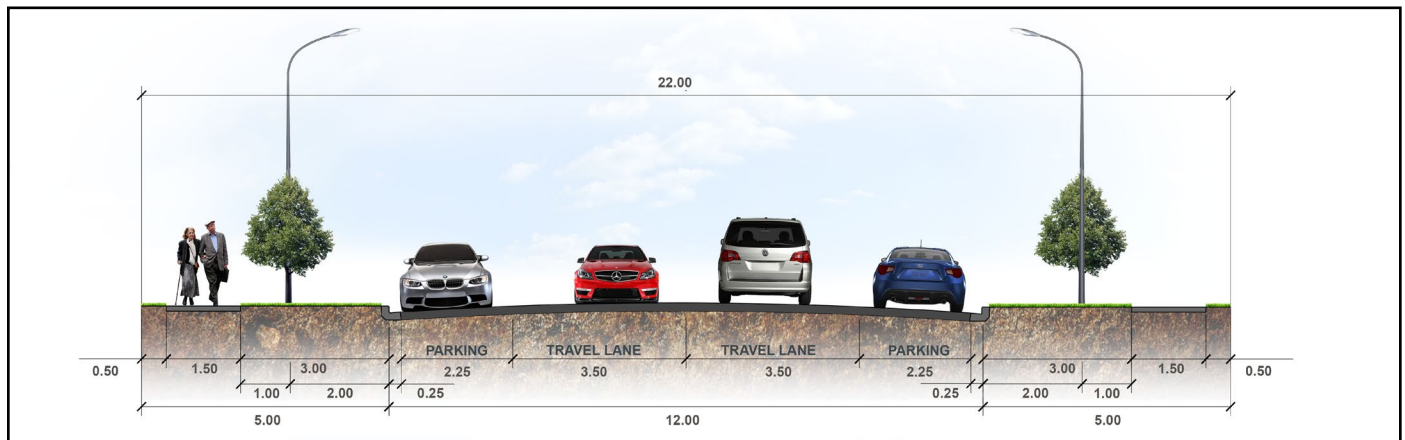
Provide rear lanes except in areas adjacent to parks and natural open spaces.

3.4.1 COLLECTOR ROADWAYS

As shown on **Figure 10 - Roadway Network**, a main collector roadway runs north/south through the Plan Area. This roadway will be designed using a 22.0m wide right-of-way, 12.0m wide carriage way, and 1.5m separated sidewalks on either side of the roadway.

A secondary collector roadway runs west/east along the south portion of the Plan Area. This roadway will be designed using the same standard as that listed above.

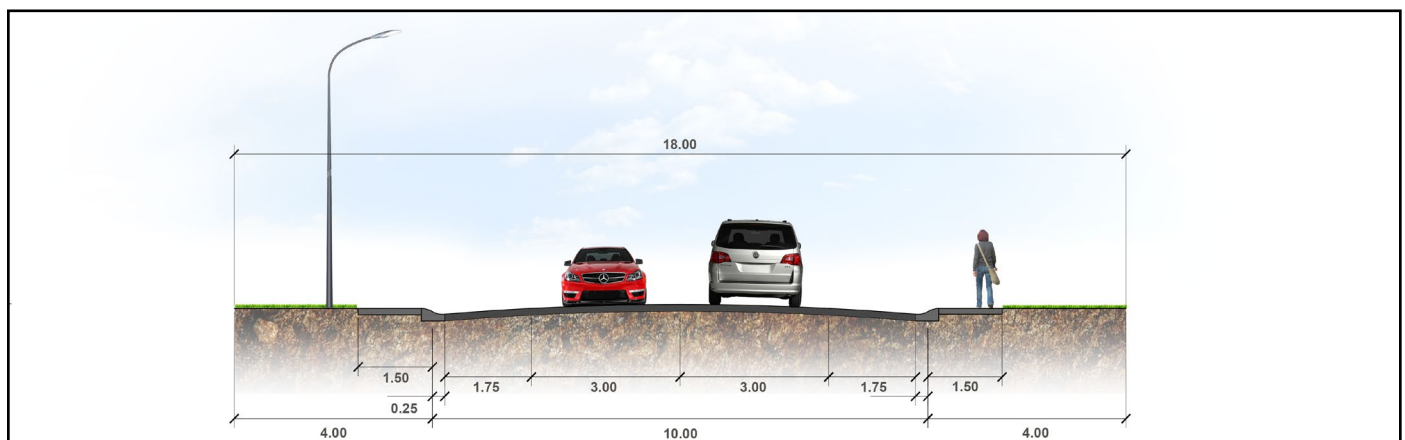
Both roadways have been designed to efficiently transport motorists through the neighbourhood while minimizing traffic on local roadways.



3.4.2 LOCAL ROADWAYS

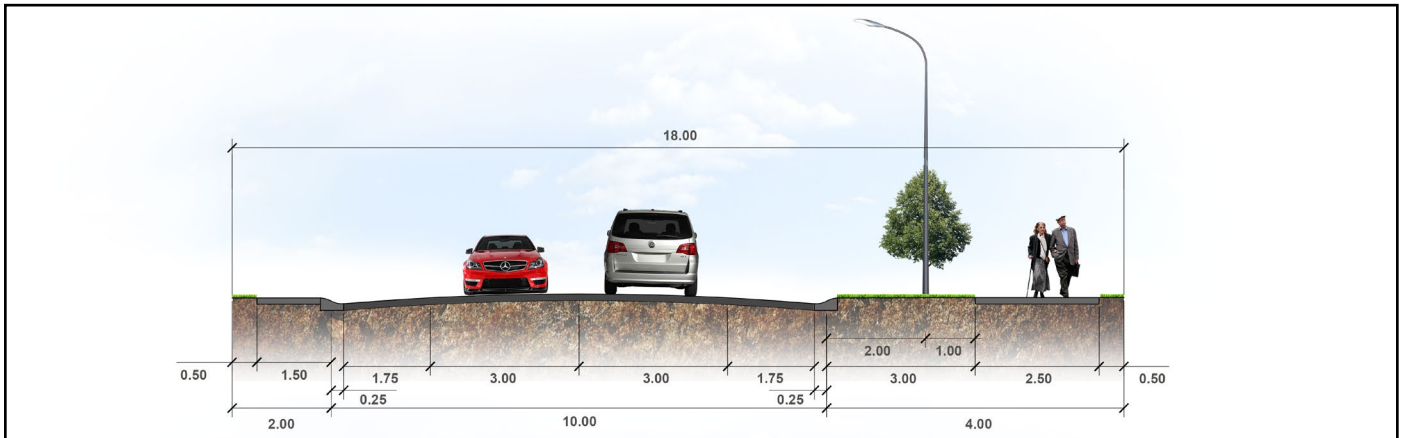
Standard Local

The system of local roads has been planned to provide access to individual development clusters while discouraging outside traffic from short-cutting. These roadways will have an 18.0m wide right-of-way with a 10.0m wide carriage way and 1.5m monolithic sidewalks on both sides of the roadway.



Modified Local

This roadways will have an 18.0m wide right-of-way with a 10.0m wide carriage way and 1.5m monolithic sidewalk on one side of the roadway. On the other side, a 2.5m separated sidewalk will be provided as part of the Trans Canada Trail.



Manufactured Home Area

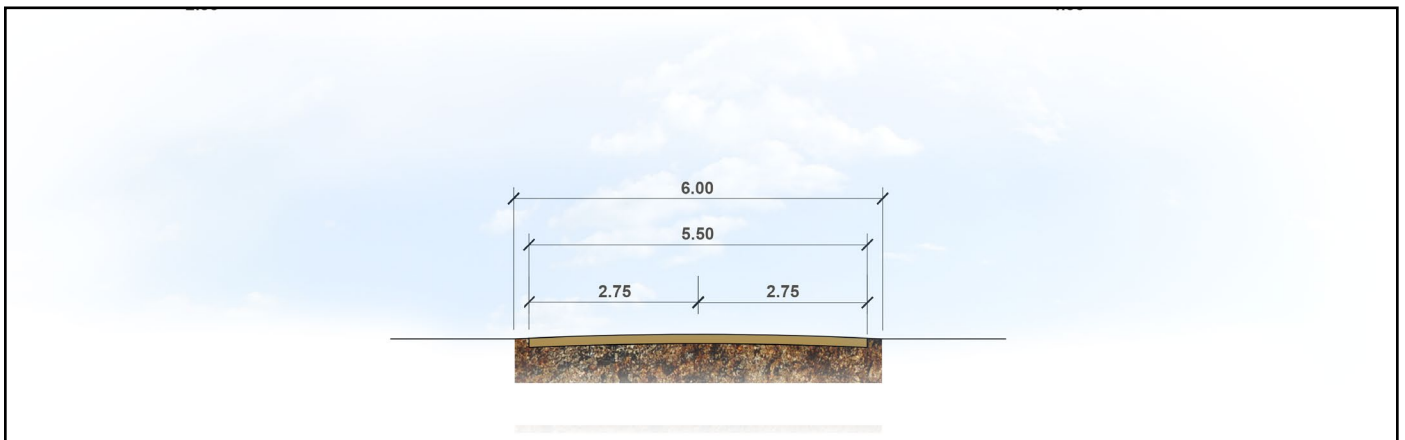
The manufactured home area will be designed with a system of private internal roadways. This system will be designed to facilitate the delivery and installation of manufactured homes and provide convenient flow of traffic. No sidewalks will be included throughout this area.

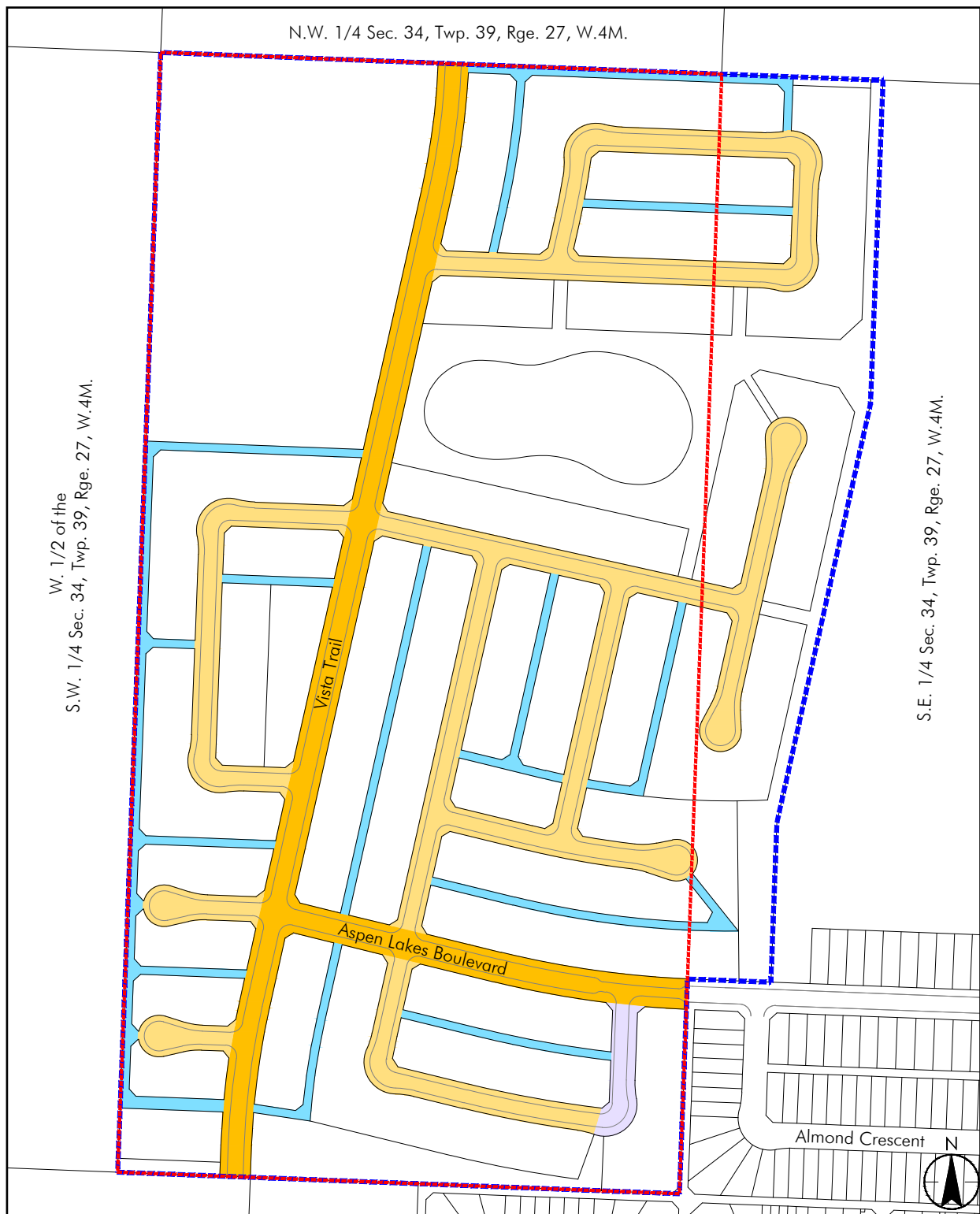
The maintenance, repair, and snow clearing of these roadways will be the responsibility of the manufactured home community association.

3.4.3 LANES

Aspen Lakes West has been designed with laneways where required; however, lanes have not been provided for lots backing onto the stormwater management facilities, or Municipal Reserves. Any lanes adjacent to Municipal Reserves or public utility lots may have bollards or post and cable fencing installed to prevent vehicular access into open spaces.

Rear laneways will be designed to The Town of Blackfalds standards with 6.0m wide rights-of-way.





Legend

	22m Collector Roadway		6m Lane
	18m Local Roadway		Planning Boundary
	18m Modified Local Roadway		Area Structure Plan Boundary

figure 10 - roadway network

servicing and implementation

4.1 SANITARY SEWER SYSTEM

As per the approved Maclab Area Structure Plan, the proposed sanitary sewer system for the Aspen Lakes West Plan Area will link into the Town's existing 250mm diameter system along the Aspen Lakes Boulevard as shown on **Figure 11 - Sanitary Sewer Servicing**.

According to the recent update of the report "Wastewater Master Plan Update 2014" for the Town of Blackfalds, this existing 250mm diameter sewer has capacity to handle the projected discharge flows generated from the full build-out of this community. Although the report indicates that the very northwest and northeast portions of the community drain north, corresponding to the current topography, the intent will be to grade these areas so that it will gravity feed within the plan boundaries towards the low area of the site where a lift station is proposed.

The southern portion of the lands will gravity feed towards the existing sanitary sewer tie-in on Aspen Lakes Boulevard. This will include phase 1 in its entirety. The remainder of the land, phases 2 through 5, will gravity drain towards the low point of the site which is located north and central of the site. The lift station will be located within the public utility lot on the west end of the proposed stormwater management facility (SWMF) and will pump the discharge south until it reaches the

proposed gravity sewer within Phase 1.

All sanitary sewer facilities will be designed in accordance with the Town of Blackfalds Design Guidelines and will become the responsibility of the Town to maintain after a two year maintenance period.

4.2 STORMWATER SYSTEM

4.2.1 MINOR DRAINAGE SYSTEM

The minor system will consist of underground piping and catch basins to capture and convey stormwater flows, up to and including the 1:5 year storm event, towards the proposed SWMF. In general, the storm system will follow the proposed road grades.

A small portion of the plan area located in the southeast portion of the site will discharge into the existing system within Aspen Lakes Boulevard and utilize the existing storm outfall located at the south end of the existing infiltration pond in Aurora Heights.

The remainder of the lands will drain into the minor storm piping system and discharge into the proposed SWMF which then outlets into the west side of the existing infiltration pond to the east.

It is unknown at this time if storm sewer connections to each individual lot will be provided. As highlighted in the Preliminary Geotechnical Investigation prepared by Parkland Geotechnical Consulting Ltd. in October 2006 for Aspen Lakes West plan area, groundwater was not encountered upon completion of the four boreholes that were drilled. A more detailed geotechnical investigation will be completed in the near future to determine if groundwater is present and determine if storm sewer service connections are required. At the very least foundation weeping tile and a sump pump will be utilized in the absence of a storm service connection. The sump pump will discharge water either to the surface or to a storm sewer service if one is provided.

4.2.2 MAJOR DRAINAGE SYSTEM

The major storm drainage system will consist of a network of surface drainage paths, generally along roads, lanes and pathways, which will convey water, typically in excess of the 1:5 year event, overland towards the permanent SWMF. The SWMF will be designed to detain storm events

up to and including the 1:100 year storm event and treat the water prior to discharging at a pre-development controlled release rate into the existing infiltration pond to the east. The release rate of 2 L/s/ha for the 1:100 year storm event will be utilized.

In the event where a storm is greater than the 1:100 year event or some other unforeseen incident occurs that prevents the SWMF from discharging as per the design, an overland emergency overflow will be incorporated into the design of the SWMF to convey water safely towards the existing infiltration pond to prevent property damage within the community.

It is proposed that the existing infiltration pond to the east will soon function as a typical stormwater management facility having a normal water line elevation that is controlled by an outlet control structure. It is proposed that this outlet will discharge into a drainage course to the north that will eventually outlet into Lacombe Lake. It is our understanding that this outlet and control is currently under review with the Town of Blackfalds and Alberta Environment.

Figure 12 – Stormwater Servicing Plan shows the principal elements of both the minor and major drainage systems in the Plan Area.

All stormwater management facilities will be designed in accordance with the Town of Blackfalds and Alberta Environment Design Guidelines and will become the responsibility of the Town to maintain after a two year maintenance period.

4.3 WATER DISTRIBUTION SYSTEM

The water distribution network within the Plan Area will in general follow the transportation network throughout the site as this will create an ideal grid network system. Services within the community will be an extension of the Town of Blackfalds' existing watermain system.

In order to provide water servicing to Aspen Lakes West, the existing distribution main in Aspen Lakes Boulevard will be extended into the development from the current stub location. As shown on **Figure 13 - Water Servicing Plan**, this existing 250mm diameter watermain will continue to the proposed north south collector Vista Trail. From there a proposed 250mm diameter main will continue north and south and will be stubbed at property line to provide future connections to the development to the north and to the proposed development Valley Ridge Estates to the

south. Since neither of these communities are developed to the property line the only available connection would be along Aspen Lakes Boulevard. This connection will be utilized until such time the Town of Blackfalds requires a second connection. It is anticipated that the second distribution connection will be with Valley Ridge Estates to the south. There may also be an opportunity to provide connections to the proposed industrial development to the west however exact locations will be determined in the future during the development of those lands.

The water system for the plan area will be modeled to determine the peak domestic and fire flow demands. From this the watermains will be sized to accommodate these demands at full build out of the plan area. As per the Town of Blackfalds Design Standards, the minimum residual line pressure under maximum day plus fire flow conditions shall be 150 KPa at ground level of any point in the system and a minimum 300 KPa residual line pressure during peak hour flow conditions. (Design Guidelines, May 2011).

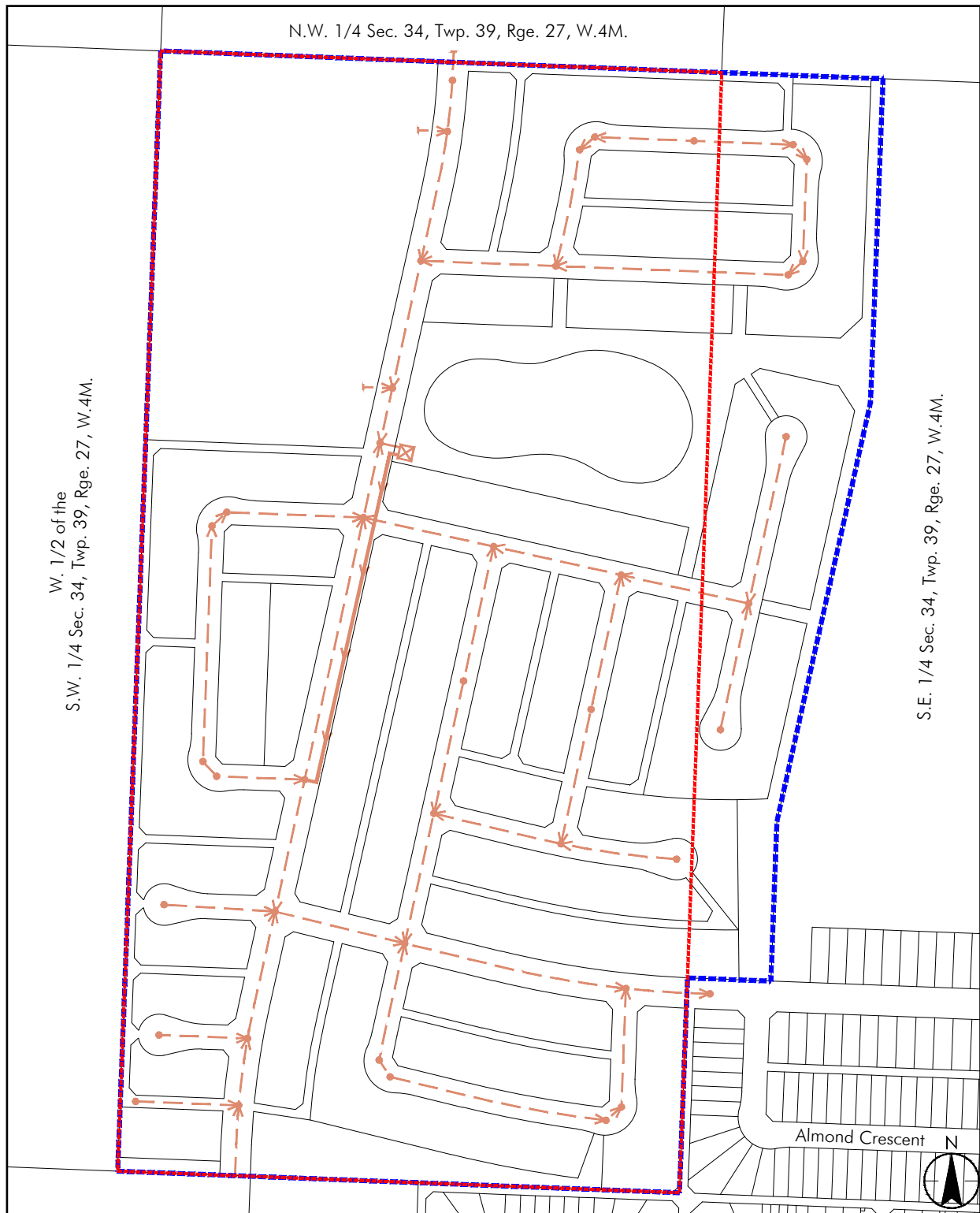
The internal distribution network will comprise of a series of 150mm to 200mm water mains that will be installed along the local roadways, lanes and public utility lots where required to create internal looping.

The proposed alignment of the water lines within Aspen Lakes West is illustrated on **Figure 13.0 - Water Servicing Plan**.

All water mains in this development will be designed in accordance with the Town of Blackfalds Design Guidelines and will become the responsibility of The Town of Blackfalds to maintain after a two year maintenance period.

4.4 FRANCHISE UTILITIES

Shallow utilities will be required for this development. These utilities include power (Fortis), telephone (Telus), cable (Shaw) and gas (ATCO) and will be extended from the existing community to the east, Aurora Heights.



Legend

--- Sanitary Sewer Servicing

— Forcemain

> Flow Direction

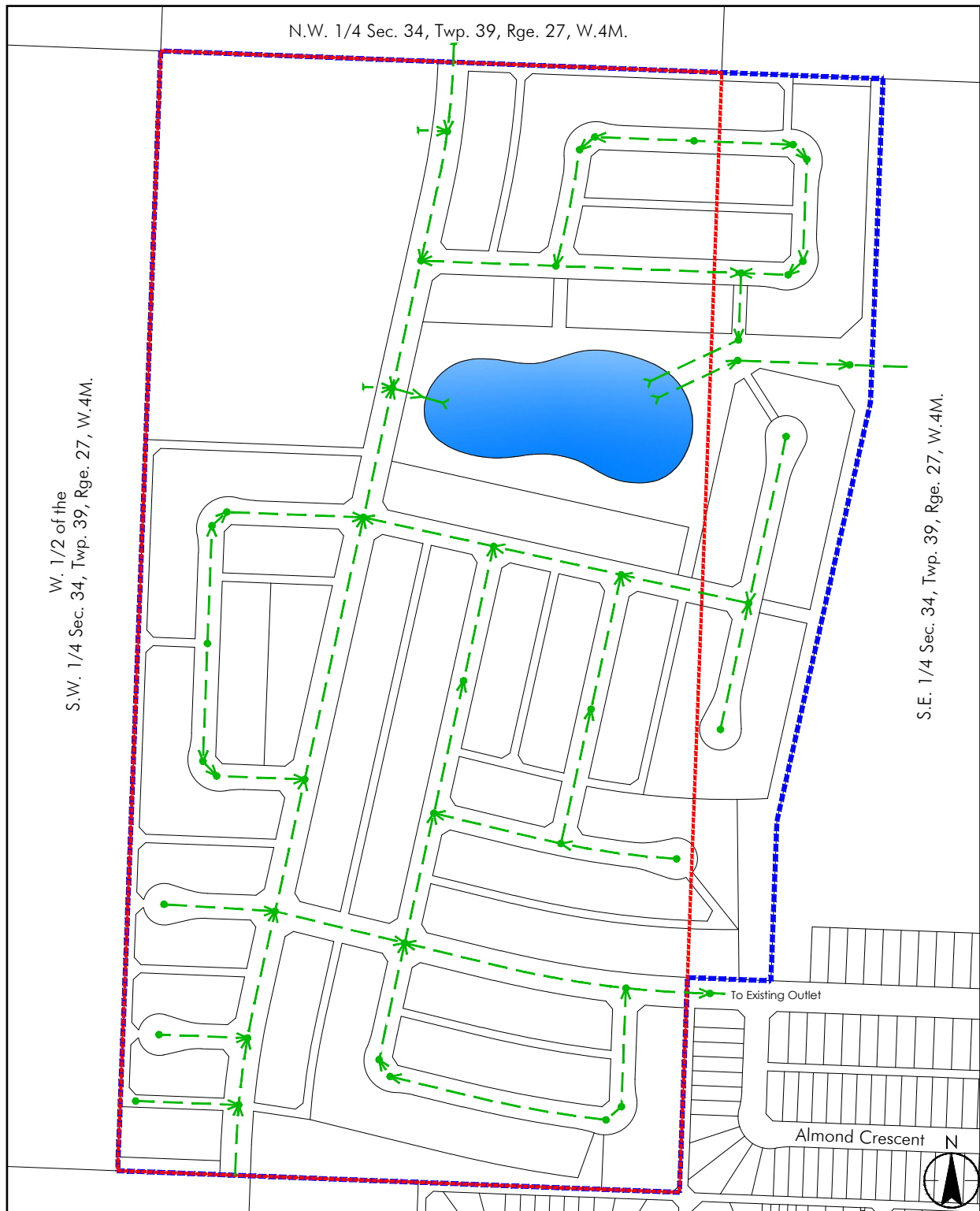
● Manhole

⊗ Lift Station

--- Planning Boundary

--- Area Structure Plan Boundary

figure 11 - sanitary servicing plan



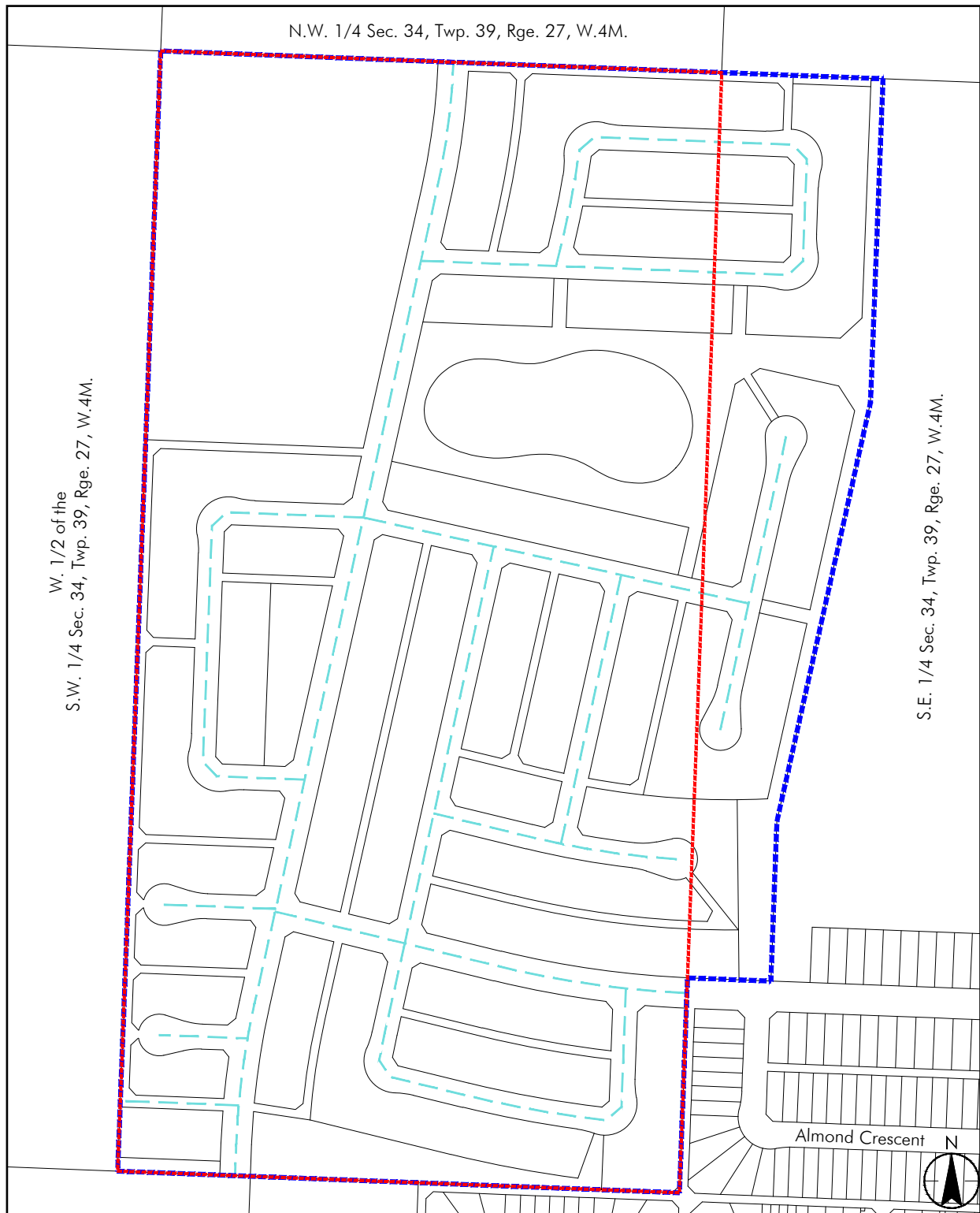
Legend

- Storm Sewer Servicing
- Flow Direction
- Manhole

- Temporary Storage Infiltration Ditch (Phase 1)
- Stormwater Management Facility

- Planning Boundary
- Area Structure Plan Boundary

figure 12 - stormwater servicing plan



Legend

- Water Servicing
- Planning Boundary
- Area Structure Plan Boundary

figure 13 - water servicing plan

4.5 PHASING

As shown on **Figure 143 - Phasing Plan**, development of Aspen Lakes West is proposed to be undertaken in five phases.

4.5.1 PHASING CONSIDERATIONS

Staging of development is dependent upon many factors one of which includes servicing. Infrastructure services to this development will be extended into the plan area from the existing neighborhood to the east. As this development will require a lift station and a stormwater management facility, it will also be advantageous to determine the phasing boundaries around the servicing capacity available.

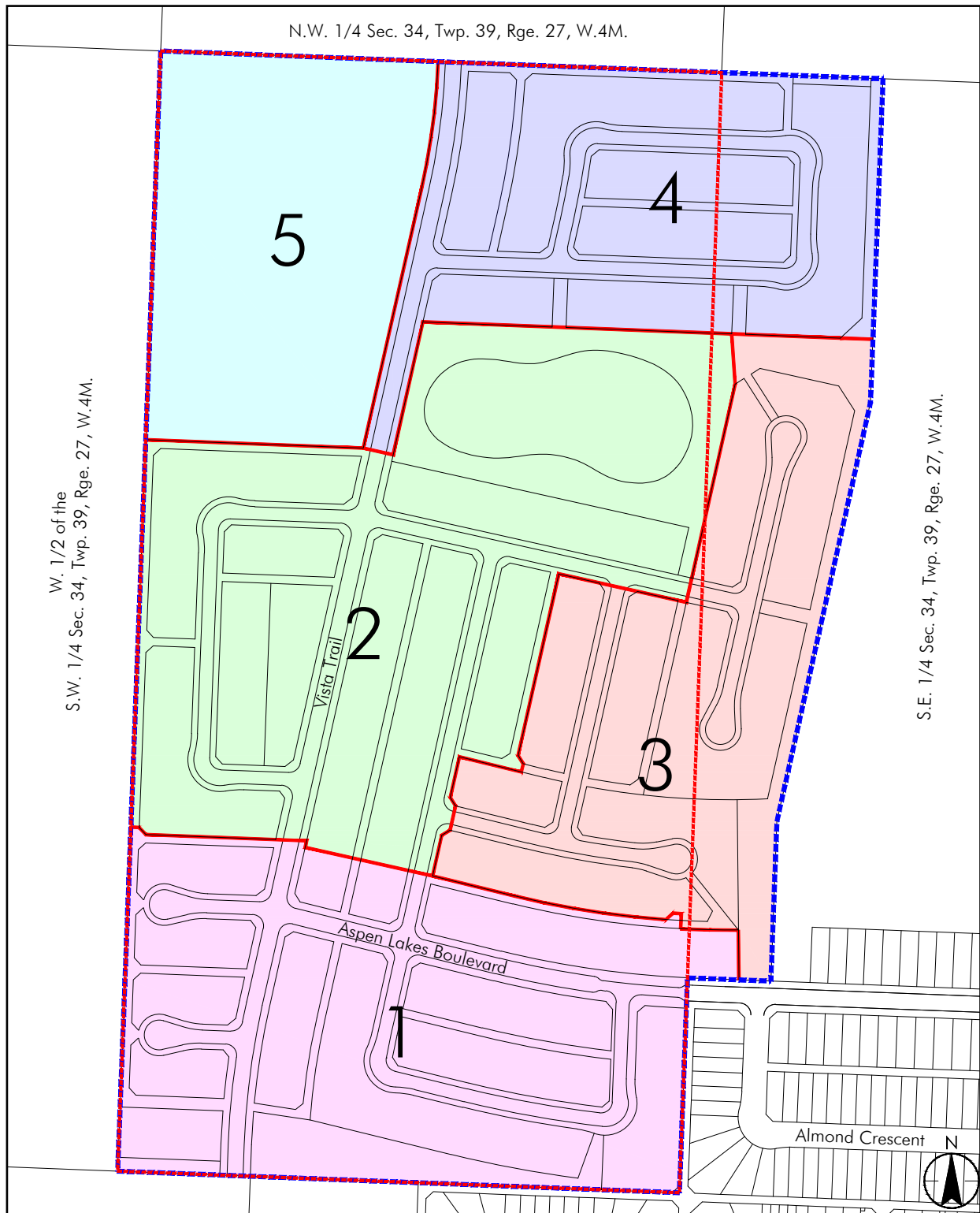
As Aspen Lakes Boulevard will be the primary entrance to this community it is logical for Phase 1 to be located in this area of the community. Phase 1 in its entirety will be serviced with water and gravity sanitary services by extending the infrastructure from the existing development to the east. Temporary ponding storage can be utilized as an option to defer the development of the SWMF. It is proposed a small portion of Phase 1 will tie into the existing infrastructure along Aspen Lakes Boulevard which discharges into the south outfall of the existing infiltration pond.

Development beyond Phase 1 will require the commissioning of the lift station and the construction of the SWMF.

The phasing boundaries shown are conceptual in nature and may vary from those shown when redesignation and subdivision applications are made. Development phases will be completed with the logical and economical extension of municipal services with the intent of meeting the needs of the regional and local housing market. Portions of separate phases may be developed concurrently if there is sufficient demand and/or if municipal servicing is made more efficient as a result.

4.6 REDESIGNATION AND SUBDIVISION

Redistricting and subdivision applications to conform to the land use designations described in this Area Structure Plan will be undertaken as necessary. Guided by *The Town of Blackfalds Municipal Development Plan*, redesignation and subdivisions must conform to the uses identified in *The Town of Blackfalds Land Use Bylaw* and all applicable statutory plans in addition to the informational requirements necessary for each application.



Legend

- Phasing Boundary
- Planning Boundary
- Area Structure Plan Boundary

figure 14 - phasing plan

Appendix **A**

LAND USE CALCULATIONS

Table A1 - Land Use Allocation.

Land Use Category	Hectares	Acres	% of NDA	# of Dwelling Units ¹	% of Housing Stock
Gross Plan Area	32.67	80.73			
Net Developable Area (NDA)	32.67	80.73	100.00%		
Residential	20.79	51.38	63.6%	564	100.0%
<i>R1M Residential Medium Lot</i>	<i>8.51</i>	<i>21.03</i>	<i>26.1%</i>	<i>175</i>	<i>31.0%</i>
<i>RMHC Residential Manufactured Home</i>	<i>5.09</i>	<i>12.58</i>	<i>15.6%</i>	<i>86</i>	<i>15.2%</i>
<i>R2 Residential Multi-Dwelling (Duplex)</i>	<i>0.81</i>	<i>2.00</i>	<i>2.5%</i>	<i>26</i>	<i>4.6%</i>
<i>R2 Residential Multi-Dwelling (Townhome)</i>	<i>6.38</i>	<i>15.76</i>	<i>19.5%</i>	<i>277</i>	<i>49.1%</i>
Open Space	3.92	9.69	12.0%		
<i>Municipal Reserve (Open Space)</i>	<i>2.56</i>	<i>6.33</i>	<i>7.8%</i>		
<i>Public Utility Lot (PUL)</i>	<i>0.00</i>	<i>0.00</i>	<i>0.0%</i>		
<i>Stormwater Management Facility (PUL)</i>	<i>1.36</i>	<i>3.36</i>	<i>4.2%</i>		
Transportation	7.96	19.66	24.4%		
<i>Collector Roadways</i>	<i>2.45</i>	<i>6.04</i>	<i>7.5%</i>		
<i>Local Roadways</i>	<i>3.92</i>	<i>9.68</i>	<i>12.0%</i>		
<i>Lanes</i>	<i>1.59</i>	<i>3.94</i>	<i>4.9%</i>		

Residential density: 17.26 du/ha (564 du/32.67 ha)

Table A2 - Population Projection.

Residential Land Use Calculation	Ha	Ac	Units	Household Size	Population ²
Single Detached Residential	13.60	33.62	261	-	730
<i>R1M Residential Medium Lot</i>	<i>8.51</i>	<i>21.03</i>	<i>175</i>	<i>2.8</i>	<i>490</i>
<i>RMHC Residential Manufactured Home</i>	<i>5.09</i>	<i>12.58</i>	<i>86</i>	<i>2.8</i>	<i>240</i>
Semi-Detached and Multi-Family Residential	7.19	17.76	303	-	847
<i>R2 Residential Multi-Dwelling (Duplex)</i>	<i>0.81</i>	<i>2.00</i>	<i>26</i>	<i>2.8</i>	<i>72</i>
<i>R2 Residential Multi-Dwelling (Townhome)</i>	<i>6.38</i>	<i>15.76</i>	<i>277</i>	<i>2.8</i>	<i>775</i>
Total	20.79	51.38	564	-	1,577

¹ Units are based on minimum lot size regulations in the Town of Blackfalds Land Use Bylaws.

² Population is based on an average household size of 2.8 persons, as recorded in the 2011 federal census for the Town of Blackfalds.