

## 1. INTRODUCTION

The Abraham Heights Area Structure Plan outlines the long range development proposed for the site and outlines the physical and policy framework for the site.

### 1.1. Purpose

The purpose of this Area Structure Plan (ASP) is to comply with Wheatland County guidelines that an ASP is required if the proposed development will create more than 4 lots/parcels in a quarter section of land. This document will provide evidence of conformity with County policies and the suitability of the proposed development.

The initial application is to accommodate Phase 1 of the development including four new country residential lots and the separation of the original existing farmstead, for a total of 5 new parcels.<sup>1</sup>

### 1.2. Plan Area and Ownership

The quarter section of land, subject to this Area Structure Plan, has been fractured and is owned by three owners. A previous four lot subdivision was approved by Wheatland County. The quarter section has several leases for oil and gas and telecommunications towers. The land subject to the Area Structure Plan, NW 4 – 24 – 25 W4M, is owned by Danny and Karla Thiessen. The location of the Abraham Heights Area Structure Plan is illustrated on Figure 1. Figure 2 illustrates the current development within the Study Area.

The uses within the subject area include the original farmstead, including the main farmhouse, one permanent residence and one residential unit for farm help<sup>2</sup> and the associated farm buildings and a structure used for agri-industry, a subdivision of four three acre parcels and the constructed access road, a gas well and crop land.

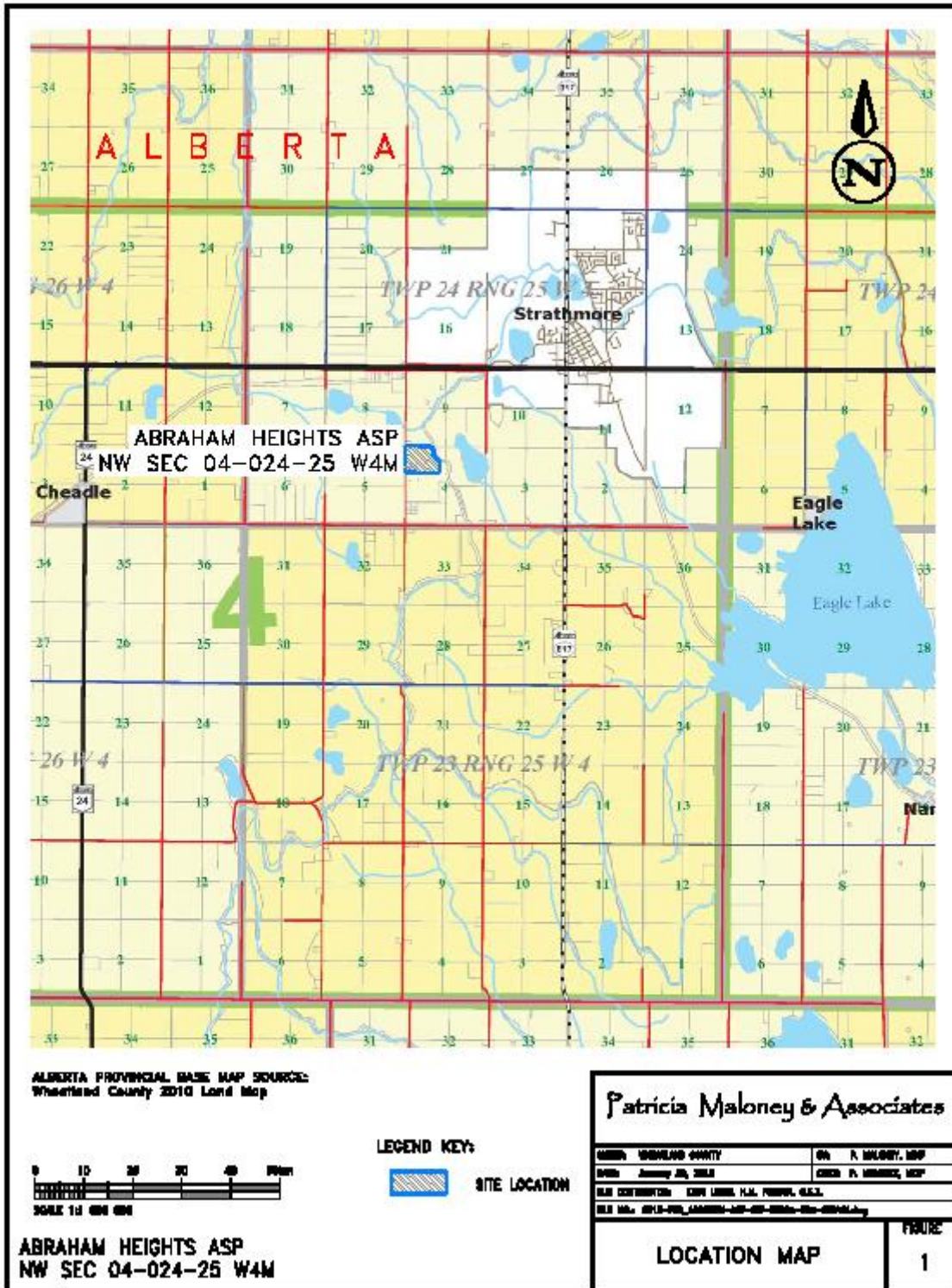
### 1.3. Adjacent Land Uses

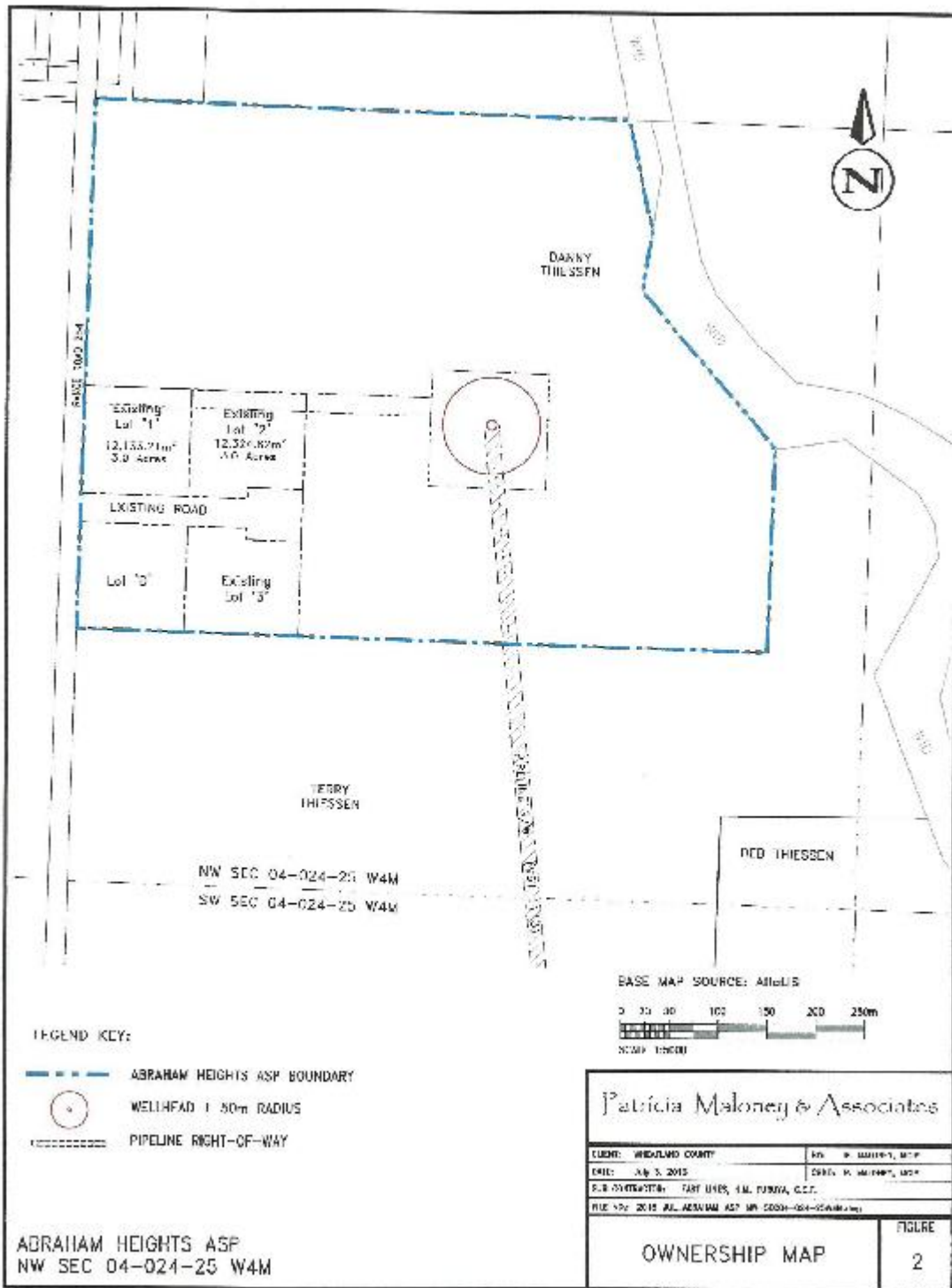
The lands adjacent to the Abraham Heights ASP are primarily agriculture with several subdivisions and approved Area Structure Plans for future subdivision. The Rocky Ridge approved Area Structure Plan located in the SW4-24-25 W4M (four existing and eight proposed parcels with the balance for future development) and the approved Lochhead Trilogy Area Structure Plan located in the NE32 24-25 W4M (4 existing and 22 proposed along with three parcels in the forty acres of the east portion of the NE32). In addition, there is one parcel subdivided out of the NW33 and one parcel subdivided out of the SW 9-24-25-5 W4M. The Subject lands are one mile (1.6 m) south of the Town of Strathmore, one mile south of the TransCanada Highway.

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<sup>1</sup> All future reference will be to 5 new parcels, however, for the PSTS and Traffic Impact Assessment, the existing farmstead to be separated was not considered a new lot.

<sup>2</sup> Due to the application for the ASP and new subdivision, the site must meet current County regulations and a development permit will be sought for the second permanent residence to bring it into conformance.





## 2. OBJECTIVES AND PLANNING PRINCIPLES

This plan has identified a series of objectives and planning principles to guide the development

The objectives to be achieved through the preparation and adoption of this Area Structure Plan are:

- To provide a phased plan for the ultimate development of nine additional lots
- To demonstrate the long range planning for the plan area
- To be environmentally responsible in the development of the site

The planning principles to be followed in this Area Structure Plan are:

- Environmentally Responsible – ensure that the development protects uses high standards of development and appropriate sanitary systems
- Good Planning – plan for the long range but demonstrate the phased approach and the use of clustering of smaller lots to minimize the use of agricultural land
- Open and Transparent – communicate with adjacent land owners and to complete all of the required background studies for the public to review

### 3. POLICY CONTEXT

Any Area Structure Plan adopted by the County must conform to the policies and strategies of the County as well as the direction of the Province, as an Area Structure Plan is a statutory document. The following demonstrates how the Abraham Heights ASP meets the policies and statutes required.

#### 3.1. Municipal Government Act

The Municipal Government Act outlines the tools available to local municipalities to regulate and control future development. All municipalities must prepare and adopt a Municipal Development Plan and a Land Use Bylaw. In addition, they may use Area Structure Plans to provide land use direction. Section 633 of the Municipal Government Act states:

*633(1) For the purpose of providing a framework for subsequent subdivision and development of an area of land, a council may by bylaw adopt an area structure plan.*

*(2) An area structure plan*

*(a) Must describe*

- (i) The sequence of development proposed for the area,*
- (ii) The land uses proposed in the area, either generally or with respect to specific parts of the area,*
- (iii) The density of population proposed for the area either generally or with respect to specific parts of the area, and*
- (iv) The general location of major transportation routes and public utilities, and*

*(b) May contain any other matters the council considers necessary.*

The Area Structure Plan requires three readings and a public hearing to be adopted. An Area Structure Plan is prepared prior to a redesignation, subdivision or development of the land. It sets the broad policies for the development.

#### 3.2. Municipal Development Plan

A Municipal Development Plan is the senior planning document for a municipality. The Wheatland County MDP was adopted in 2006. The MDP was based on a very rural concept and was not supportive of country residential development but supported development in established hamlets and some large proposed development areas. Since then the Growth Management Strategy has been finalized and several Hamlet Area Structure Plans have been adopted and the MDP has been amended to provide new direction, including:

- Significant emphasis on balancing the conservation of the County's natural capital – its environment and agricultural lands – with its long term growth needs.
- Strong policy direction for protecting significant environmental areas and features.
- Policies that recognize new agricultural initiatives like value added agricultural industries.

- Policies that support Conservation Subdivision Design principles (CSD) for new development such as compact, efficient, fully serviced residential subdivisions.
- While recognizing that a demand for county residential lifestyles will continue to exist, and that these may continue to be accommodated within a sound management strategy, a priority will be placed on directing residential development to existing hamlets and named areas.
- Strong support for clustering new industrial and commercial development in planned industrial and business parks.

New policies include:

1. Rural subdivisions may be considered. The following statements may apply:
  - In close proximity to towns, hamlets, villages and named areas
  - Multi-lot clustering
  - Conservation Subdivision Design Principals (CSD)
  - If an ASP is required, it must be prepared by a qualified professional
2. For all applications, internal road access (including service roads) shall be provided by landowner/developer at their cost for each of the existing and proposed parcels that are part of the application. All roads to be constructed to County standards
3. All applications will be required to connect to existing water/wastewater services where and when available. Each approval will require a deferred service agreement
4. The County promotes residential applications which consider a smaller parcel size and contributes to moving the average housing density in Wheatland County to greater than four (4) units per acre.
5. Multi-lot residential applications may provide a mix of housing types.
6. The County may direct industrial, business industrial and commercial applications to designated areas as identified specifically for industrial, business industrial or commercial in the RGMS.
7. All applications shall include methods of land conservation to protect productive and viable agricultural lands. By methods such as:
  - Smaller parcels
  - Multi-lot clustering
  - Conservation easement
  - Dedication of Environmental Reserve (ER)
8. The County supports applications which emphasize the conservation of natural capital (ie: environmentally sensitive areas). Maintain trees, wildlife habitat and natural water features.
9. All applications within or adjacent to hamlets and named areas may encourage trail and road linkages to adjacent lands.

It is recognized that the primary direction for Wheatland County is as an agricultural community and the protection and maintenance of good agricultural land will be a priority.

### 3.3. Growth Management Strategy

In 2009, the County initiated the preparation of a Growth Management Study to identify the areas most appropriate for growth. During the preparation of this document, all subdivision was put on hold for the ultimate identification of the growth nodes and policies for country

residential development were determined. The Growth Management Strategy was completed and adopted in 2011. The following vision statement was adopted for Wheatland County.

### **VISION STATEMENT**

*Wheatland County promotes sustainable well planned development which enhances and protects existing agricultural land and natural areas. We will do this in four ways: focusing growth in existing Hamlets, working with other municipalities to ensure mutually beneficial land uses in bordering areas, balancing growth while promoting good use of land, and improving and upgrading infrastructure in our communities to support a good quality of life.*

While the document focuses on development in current communities, it recognizes the demand for a rural lifestyle. There is focus on green infrastructure and conservation design for subdivisions. The document also includes direction for country residential development:

**Rural Community Nodes** – Represent areas where existing country residential development will be maintained. However, conservation design principles will be required in new country residential subdivision proposals to ensure a smaller development footprint. These areas will not be the focus of investment for future development; however, existing servicing levels will be maintained.

There are many regulations that apply to country residential development other than the local municipal regulations, such as sewer, water, provincial highways etc. However, the County directs where growth may occur. The Growth Management Study provided several directions for future Country residential development, but Policy 11 outlines the key requirement.

**Policy 11. Ensure an Area Structure Plan (ASP) is prepared for developments greater than three (3) lots or where subdivision of land will result in greater than three (3) lots per quarter section.**

The County has developed guidelines for the preparation of Area Structure Plans and has indicated that the land use concept should include features and characteristics, density, servicing, geotechnical investigation, traffic impact assessment, historical resources overview, land use districts and compatibility with existing municipal policies, phasing, water, wastewater and storm water management plans. This may require an environmental site assessment to identify oil and gas facilities, emergency services and potential hazards.

## 4. BACKGROUND STUDIES

The background work for the Area Structure Plan reviewed many of the site features and characteristics to carefully protect special areas and to design a subdivision that works with the natural topography. The following outlines each aspect of the background work.

### 4.1. Setting and Topography

In November 2012, Subsoil Septic Services prepared a Level III PSTS study to determine the suitability of the site and soils for the proposed development and the use of septic fields for each individual lot. In this report it was noted that the majority of the proposed site has good slope and drainage. The study used daily flows assumed to be from a 4 bedroom house with 3.5 bathrooms. The general recommendations of the report state:

*An investigation of the possibility of groundwater mounding due to PSTS operation was not considered in this Level Three Assessment, therefore no measurements or calculations have been performed to predict or quantify potential groundwater mounding.*

*However, SubSoil Septic Services believes that because of the well drained nature and the Fine Sandy Loam texture of the sites chosen that groundwater mounding will not be a significant consideration as water will move at a sufficient rate through the soil both vertically and horizontally.*

*SubSoil Septic Services identified proposed locations for the PSTS sites and reserve PSTS sites based on a proposed placement of the homes. SubSoil Septic Services recommends that once the home locations are finalized, the locations of the PSTS and reserve PSTS be protected from traffic and development to preserve the soil structure and increase long-term viability of the system. SubSoil Septic Services recommends that the location of the PSTS and the PSTS reserve sites be documented in the subdivision and individual lot plans to ensure protection after initial development is complete...*

*The overall suitability of this subdivision for the use of PSTS is Very to Moderate...The features found by the soil assessment conducted indicate the majority of parcels are suitable for simple septic tanks and primary pressure soil based treatment field systems.*

### 4.2. Traffic Impact Assessment

Patricia Maloney & Associates is directing the Area Structure Plan process for the Abraham Heights residential development. The proposed development is within Wheatland County and is situated on Range Road 254 in the NW4-24-25 W4M quarter section. The proposed development is expected to include up to eight (8) new country residential units and the separation of an existing farmstead (which is calculated in the current traffic count). As part of the approval process for this particular development, Wheatland County required the preparation of a Transportation Impact Assessment.



Bunt & Associates (Alberta) Ltd. was retained to complete the required Transportation Impact Assessment and has developed a series of conclusions and recommendations based on the analysis undertaken as part of this study.

The key recommendations are summarized here as follows:

- 1 *The County should consider dust control for Twp Rd 240 west of RR 254, and is required with or without inclusion of the proposed Abraham Heights ASP.*
- 2 *The background daily traffic volumes on Range Road 254 north of Twp Rd 240 are approximately 200; therefore, the County should consider dust control. It is noted that this improvement is required with or without the inclusion of the proposed Abraham Heights ASP.*
- 3 *The post-development daily traffic volumes on RR 254 north of Twp Rd 240 approaches 260 vpd with the addition of full build-out site generated traffic and 230 vpd under the Phase One traffic conditions, therefore dust control should be considered by the County, and is required with or without the inclusion of the proposed site generated traffic. That said, without the inclusion of the Lochhead/Trilogy ASP, dust control is not required for Phase One.*
- 4 *A preliminary assessment based on Figure D-7.4 in the Highway Geometric Design Guide was completed for the intersection of RR 254/ Twp Rd 240, which indicated that this intersection would require a Type II intersection treatment, and is required for both the initial and full build-out conditions. That said, the results of the analysis confirmed that the current TYPE I intersection treatment would be sufficient without the inclusion of Lochhead/Trilogy ASP. In other words, the combination of the various ASPs drives the need for the TYPE II intersection treatment.*

With the inclusion of the above noted improvements, it is expected that the proposed development can be accommodated on the adjacent transportation network.

#### **4.3. Environmental Site Assessment**

A Phase 1 Environmental Site Assessment was completed by Rangeland Conservation Service Ltd. in February 2013. The assessment included site visits, interviews with landowners, review of historical air photos, ERCB records, historical title searches and review of soils information.

The subject property is not listed within the Historic Resources Listing. The ERCB records indicate that there are no documented occurrences of spills or other contamination on the subject property. Two new and one abandoned ground water wells exist on the property.

The subject property is located 1.6km southwest of the Town of Strathmore. The proposed phase 1 is approximately 13.5 acres (5.5 ha) in size and includes four lots. The land is currently used as a hay field, and the surrounding area is also used for haying.

There appears to be low to minimal evidence of potential contamination on the subject property. There are no buildings or structures located on the property other than one gas well

site operated by EnCana Corporation. The gas well site along the west edge of proposed Lot 2 has the potential for a gas spill, and should be regularly examined by qualified personnel within EnCana Corporation.

The abandoned vehicles and fuel storage on Lot 1 are existing. Due to the low quantity of contaminants concern is minimal.

Based on the information collected through historical records and site reconnaissance, no evidence was found suggesting the subject property or adjacent properties pose any significant environmental concern, and as such, no further environmental assessments are suggested.

Figure 3 illustrates the site features. It should be noted that the lots illustrated on this figure represent the four new undeveloped lots and does not specifically illustrate the lot that will encompass the current farm house and out buildings, which is illustrated on Figure 4.

#### 4.4. Historical Clearance

An historical assessment was completed by Lifeways of Canada Ltd, in January 2013. The Statement of Justification for Historical Resource Act Clearance states:

The project is immediately southwest of the Town of Strathmore. The surficial geology is characterized by draped moraine with till of even thickness partially contributing to flat to undulating topography. The specific project land is flat cultivated cropland, with little to no native vegetation present. The lack of topographic relief or specific topographic features to focus past occupation makes the potential for intersecting significant unrecorded archaeological sites low. In addition, there is low sedimentation potential and all surficial deposits have been disturbed through cultivation, significantly lowering the potential for interesting undisturbed or deeply buried site.

The recommendation of the report states:

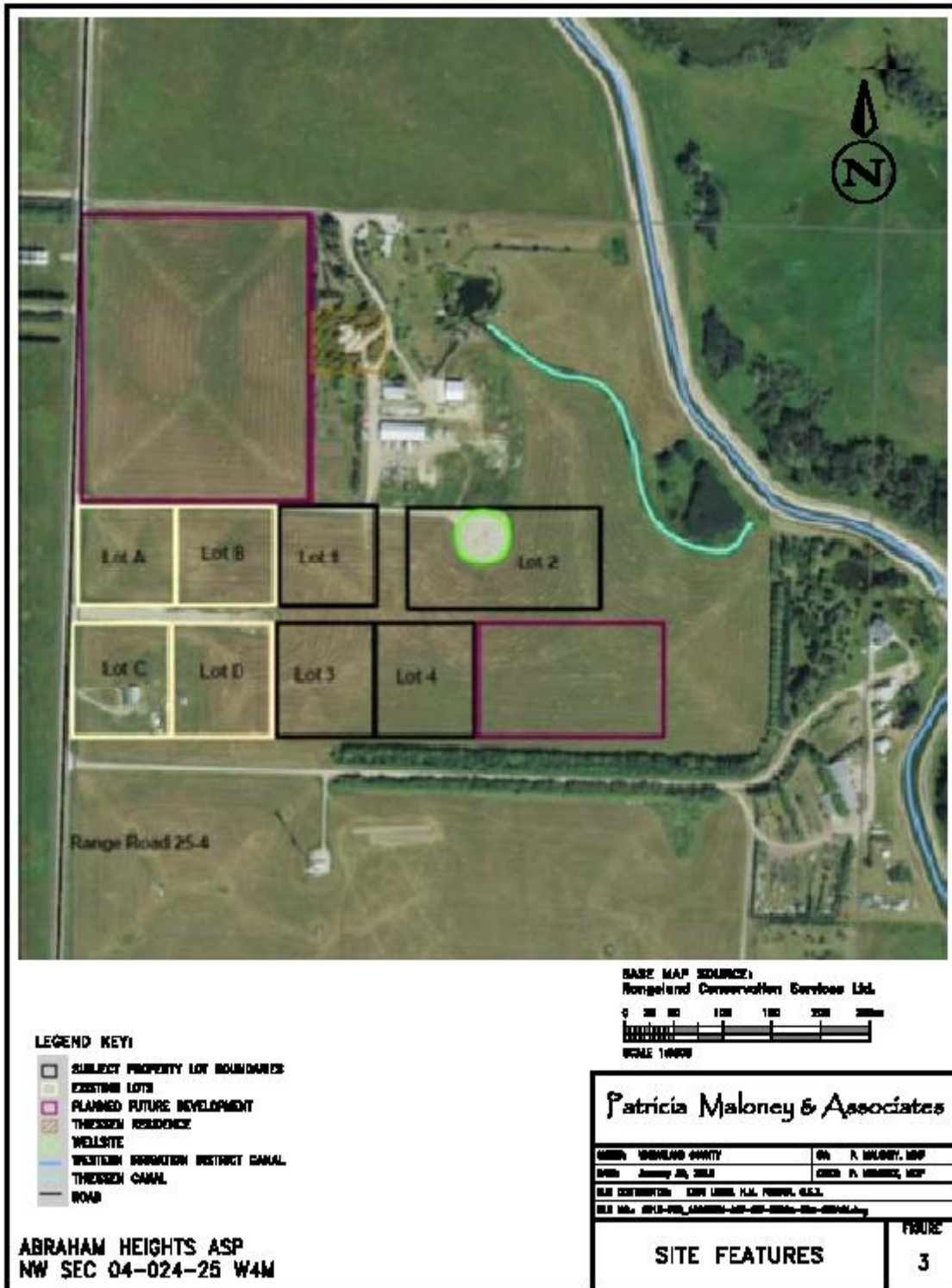
*The proposed Abraham Heights Area Structure Plan has limited potential to contain significant archaeological remains. The entire project area is farmland which has been disturbed by cultivation and has no topographic features of interest. No known sites will be impacted. No historic structures are present within the proposed development area. Therefore, I (Christy de Mille, Ph.D.) recommend that Danny Thiessen be granted Historical Resource Act clearance for the Abraham Heights Area Structure Plan.*

#### 4.5. Ground Water Assessment

In June 2009 Western Water Resources Inc. completed a Phase I Groundwater Feasibility Assessment for Danny Thiessen for the four lot subdivision proposed on the quarter section, which was approved. In December 2012, the study was updated to take into consideration the proposed lots in the Abraham Heights Area Structure Plan.

The conclusions of the WWR study stated:

- The Total Cumulative Mean Groundwater Production Potential (TMGPP) for the entire 9 quarter sections (taken into consideration for this study) as estimated by the Recommended Pumping Rate is 155.0 cubic metres per day per quarter (23.7 igpm/quarter)
- In theory, sufficient groundwater reserves exist to service the proposed 4 lots (four new development lots recognizing that one of the proposed lots will accommodate existing development) within the NW4-24-25 W4M within the depth range indicated, while still leaving a Total Theoretical Remaining Groundwater Reserve (TTRGR)



## 5. LAND USE AND DEVELOPMENT CONCEPT

The following sections outline the proposed land use and policies for the Abraham Heights Area Structure Plan.

### 5.1. Development Concept Overview

The proposed development for the first phase of development is for four lots, each of approximately 3 acres in size.

As noted earlier, Wheatland County currently requires an Area Structure Plan for any development that will create 4 or more parcels in a quarter section. The Abraham Heights ASP will create four new lots and a lot to accommodate the existing farm house and out buildings in Phase 1 and proposes an additional four lots for future development in Phase 2. The balance of the land will be maintained for agricultural purposes.

An Area Structure Plan is designed to plan for 20 to 25 years. By specifying the need for an Area Structure Plan, the County has required the owners to undertake many expensive background reports (environmental and wetland overview, historical, private sanitary assessment and hydrology) and therefore, the owners will consider the developability of the land and determine what might occur for subdivision and development within the 20 to 25 year time frame. The owners have determined that Phase 1 for five lots is appropriate for the current application, but there is the possibility for four additional lots in the future. This will maximize the usefulness of the background reports being prepared.

The adoption of this Area Structure Plan does not allow the owners to do any development on the land until such time as the appropriate approvals for land use and subdivision and development permit are in place.

Any development beyond the first phase will require an amendment to this Area Structure Plan and further studies, as identified by Wheatland County.

- Policy 5.1.1 The Abraham Heights area, located in the NW4-24-25 W4M is appropriate for country residential development.
- Policy 5.1.2 Development will occur in general conformity to the conceptual lot layout provide as Figure 4 of this Area Structure Plan.

### 5.2. Land Use and Density

The proposed development is for 5 parcels of land. This includes three 3 acres parcels, one 5+ acre parcel (larger lot size required to accommodate gas well setbacks and provide sufficient building envelop) and one lot to accommodate the existing farmstead.

The plan also demonstrates how a second phase of development for an additional four 3 acre lots will be accommodated.



The potential total build out for this Area Structure Plan, should all approvals be granted, has the potential for 14 lots (four CR lots existing, 5 lots proposed, 4 lots potentially in Phase 2 and the balance of the parcel). This could generate a total of 36 people (based on 2.6 persons per household) but it is recognized that there are currently three houses on the property.

- Policy 5.2.1 The Phase 1 development includes the creation of 5 new lots, one of which accommodates existing development.
- Policy 5.2.2 Lot sizes will vary to accommodate existing structures and an existing gas well but will be kept as small as possible to meet the clustering goals of the County.
- Policy 5.2.3 The lot configuration proposed in Figure 4 will guide the future subdivision application, however exact lot boundaries will be determined by the Plan of Subdivision.
- Policy 5.2.4 In conjunction with the adoption of this Area Structure Plan, the applicant will obtain development permits for all structures on site.

### 5.3. County Approvals

These small parcels to be subdivided will be designated Country Residential under the Wheatland County Land Use Bylaw. The balance of the quarter section will remain in Agricultural General until such time as Phase 2 is applied for.

- Policy 5.3.1 The Area Structure Plan lands are appropriate for Country Residential development.
- Policy 5.3.2 Adoption of this Area Structure Plan does not provide approval to develop the land. Appropriate land use designations and subdivision approvals must be provided prior to any development of roads or structures on this property.
- Policy 5.3.3 This Area Structure Plan demonstrates the suitability for development of the eight new country residential lots and separation of the existing farmstead. Additional development may be required to prepare additional studies at time of subdivision application but no amendment will be required to this ASP to allow for Phase 2 development.

## 6. INFRASTRUCTURE

This section outlines how the Abraham Heights Area Structure Plan lands will be serviced.

### 6.1. Water and Sewer

The parcel sizes are approximately three acres in size. They have been designed to ensure a minimum 1 acre building site, a septic field and an alternative septic field. The Groundwater Assessment, completed by WWR, demonstrates there is sufficient water anticipated for the entire development proposed (both Phase 1 and future development anticipated).

- Policy 6.1.1 The development will be serviced by individual water wells.
- Policy 6.1.2 Each lot will be serviced by an individual water wells, drilled by a journeyman water well driller and licensed and approved by Alberta Environment at time of building permit.
- Policy 6.1.3 When water wells are drilled, it is recommended that an aquifer test consisting of at least a two hours of pumping and two hours of recovery be conducted.
- Policy 6.1.4 Each lot will be serviced by an individual septic system based on the provincial standards of the Private Sewage Waste Management guidelines and following the recommendations of the SubSoil Septic Services report .
- Policy 6.1.5 The features of the soils, as determined by SubSoil Septic Services, indicates the parcels are suitable for simple septic tanks and primary pressure soil based treatment field systems.
- Policy 6.1.6 The landowners will be required to sign a standard deferred servicing agreement with Wheatland County stating that at such time as piped services are available, the lot owners will tie into the available services.

### 6.2. Storm Water Management

Due to the size of the lots, the storm water will be managed on site.

- Policy 6.2.1 Due to the size of the lots, the low site coverage of the buildings, and the well draining soils, storm water will be managed on site to capture 1:100 storm event to the satisfaction of Alberta Environment.
- Policy 6.2.2 Lot owners may create a pond on site to capture rain water.
- Policy 6.2.3 Natural drainage from the site may drain into ditches along the county roads at the same rate as pre development.
- Policy 6.2.4 All development is encouraged to install cisterns to capture the rain water for on site irrigation of gardens and yards.

### 6.3. Shallow Utilities

Shallow utilities include power, telephone, internet, gas and cable.

- Policy 6.3.1 The developer/lot owner is solely responsible for the cost of installing all shallow utilities at time of development permit.



#### 6.4. Transportation

The transportation policies have been developed based on County standards. Bunt Engineering completed a Traffic Impact Assessment was completed for this development.

- Policy 6.4.1 The proposed development for Phase 1 will be accommodated by extending the existing access road off Range Road 254.
- Policy 6.4.2 All new lots will access onto the internal road.
- Policy 6.4.3 Phase 2 development will create a new access road to be looped to create secondary access for Phase 1.
- Policy 6.4.4 Emergency access will be provided through Lot 1, until such time as Phase 2 of the development is approved and developed.
- Policy 6.4.5 Future development beyond Phase 2 will not be allowed an additional access onto Range Road 254 but will access off existing internal roads.
- Policy 6.4.6 While the internal road allowance will be dedicated the full length at time of subdivision of Phase 1, the road construction will extend only far enough to service the last lot with a turnaround bulb with a radius of 15.4 metres, as per County standards.
- Policy 6.4.7 Future road construction along the dedicated right of way will be constructed when required and the cost of constructing the road extensions will be the responsibility of the developer of the day.

## 7. OPEN SPACE AND RESERVES

Wheatland County does not take municipal reserves as land in rural areas and generally do not take environmental reserve lands.

- Policy 7.1.1 As a rural development, it is not recommended that any land be dedicated as Municipal Reserve, parks or pathways.
- Policy 7.1.2 Reserves will be calculated on the land proposed for subdivision in Phase 1 of approximately 13.5 acres (5.5 ha). This will require a cash in lieu dedication of the cash equivalent of 1.35 acres of land. Exact areas will be determined at the time of subdivision and legal plan of survey, and value will be determined by an appraisal as a condition of the approved subdivision.
- Policy 7.1.3 Cash in lieu of municipal reserve will be paid to the County, based on the market assessment of the value of the land prior to redesignation and subdivision.

## 8. PHASING AND IMPLEMENTATION

The development has been divided into two phases. The first phase of development includes four new country residential lots and the subdivision of an existing farmstead. The second phase will include four 3 acre parcels.

By requiring that a landowner must complete an Area Structure Plan for such small developments, the County has provided the platform for the landowner to conduct comprehensive long term planning. This is often more development than originally envisioned by either the municipality or the landowner, but an Area Structure Plan is intended to plan for a 20 year horizon. The background research looks at a variety of elements. The ASP generally looks at the full build out of the land and considers future connections to adjacent lands. In the case of the Abraham Heights property, there was already four country residential lots subdivided. The ASP considers two more phases of development and then identifies the balance as future development. Figure 5 illustrates the proposed phasing of the development. Phase 2 will be guided by the policies of this Area Structure Plan. An amendment to the Area Structure Plan will not be required to proceed with Phase 2 but additional or updated studies will be required.

Based on conservation design principles, the lots are small and clustered to protect the balance of the land for continued agricultural operation in the case of the Abraham Heights ASP.

- Policy 8.1.1 Phase 1 of the development includes a total of four new country residential lots and subdivides the original farmstead as a separate lot.
- Policy 8.1.2 Phase 2 development will require updates to the background reports, but will not require an amendment to the Area Structure Plan.
- Policy 8.1.3 No development may proceed until all appropriate approvals have been received for land use designation and subdivision.
- Policy 8.1.4 Additional development within the Area Structure Plan is considered appropriate, but will be reviewed at time of application on its own merits.
- Policy 8.1.5 Future development will demonstrate road connectivity throughout the Area Structure Plan in general conformance with Figure 5.

