



BRAGG CREEK

AREA STRUCTURE PLAN

OCTOBER 2026

DRAFT FOR PUBLIC REVIEW



ROCKY VIEW COUNTY

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PART A: VISION AND CONTEXT

1. PLAN ORGANIZATION

The Bragg Creek Area Structure Plan (the Plan) is organized into three parts, followed by five appendices.

Part A: Vision and Context

Part A outlines the Plan's purpose and any required policy terminology. The boundary of the Plan Area is then outlined, along with an overview of the Plan's alignment with higher-level strategic documents. Part A also contains a description of the development of the Bragg Creek area from its early beginnings to today. Finally, it presents a vision of what Bragg Creek would be like in the future and outlines 10 broad goals that would help achieve this vision.

Part B: Policy Framework

Part B is the core of the Plan, containing policies to guide development in the Plan Area. It sets direction on land use, management of natural and community amenities, transportation and servicing, and community safety for the Plan area. Each section contains a description of its purpose and intent, a list of objectives, and a series of policies addressing the subject matter. Policies within Part B have been separated according to geography in terms of policies relating to the hamlet and those relating to the broader Plan area.

Part C: Implementation and Monitoring

Part C presents the Plan implementation process, covering how the Plan will be implemented, how the Plan will be monitored, and requirements for different planning applications. This Part also includes how phasing in the Plan area will take place and when the Plan should be reviewed.

Appendices

APPENDIX A: DEFINITIONS

APPENDIX B: DESIGN CONTROL PLAN

APPENDIX C: CONCEPTUAL SCHEME REQUIREMENTS

APPENDIX D: LOCAL PLANS IN BRAGG CREEK

APPENDIX E: RESOURCE INVENTORY AND SENSITIVITY ANALYSIS (RISA)

2. PLAN INTERPRETATION

The following describes the meaning of some of the key words that are contained in the policy:

Shall: A directive term that indicates the actions outlined are mandatory and therefore must be complied with, without discretion, by applicants, Administration, the Development Authority, and the Subdivision Authority.

Should: A directive term that indicates a strongly preferred course of action by Council, Administration, and/or applicants, which is to be applied in all situations unless it can clearly be demonstrated to the satisfaction of the County that the policy is not reasonable, practical, or feasible in a given situation.

May: A discretionary term meaning the policy can be enforced by the County if it chooses to do so, depending on the context and conditions of the site and/or application.

3. PLAN PURPOSE

Area Structure Plan

An area structure plan (ASP) is a statutory document adopted by Council through bylaw that establishes a vision and policy framework for the future physical development of an area. It provides direction on matters such as land use, transportation, environmental protection, emergency services, community design, and utility servicing, and guides the consideration of future land use changes, subdivision, and development.

The preparation of an ASP also provides opportunities for residents, landowners, and other stakeholders to participate in shaping the policies that will guide future growth. The vision, goals, and policies of the Plan are intended to balance the interests of the local community with broader County objectives related to growth, servicing, infrastructure, and economic development.

The *Alberta Municipal Government Act* states an area structure plan must describe:

- proposed land uses;
- density of population;
- sequence of development;
- general location of major transportation routes and public utilities; and
- any other matters Council considers necessary.

The policies in an area structure plan form a bridge between the general planning policies contained in the Municipal Development Plan and the more detailed planning and design direction contained in a conceptual scheme or a master site development plan. Area structure plan policies must align with the Municipal Development Plan and applicable County policies. The area structure plan must be based on sound planning principles and respond to the particular natural and built form of the Plan area.

An ASP does not set growth targets; instead, it estimates potential future growth which is guided primarily by market demand for different land uses and development types. Through the process of preparing this Plan, several opportunities were provided to landowners, residents, adjacent jurisdictions, and other

stakeholders for input on the development of policy. It is important that the vision, goals, and policies contained in the Plan address the interests of residents and stakeholders in the ASP area, as well as the interests of those in other parts of the County.

Local Plans

For the purposes of this Plan, the term local plan refers to a conceptual scheme or master site development plan. Local plans are generally non-statutory documents that provide detailed direction for subdivision and development. They shall be prepared in accordance with the Bragg Creek Area Structure Plan and, where applicable, the Municipal Development Plan. Local plans shall demonstrate how proposed development aligns with the overall planning vision of the ASP, integrates with surrounding areas, and addresses location-specific requirements identified in this Plan.

4. RELATION TO OTHER PLANS

4.1 The Municipal Government Act

The Municipal Government Act (MGA) provides the municipal mandate for preparation and adoption of an area structure plan within a County.

- “633 (1) For purposes 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 for 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.”

In addition, the MGA requires that all statutory plans adopted by a County must be consistent with each other.

4.2 Rocky View County Municipal Development Plan

The Bragg Creek ASP is consistent with the policies of the County’s Municipal Development Plan (MDP). The MDP provides an overall policy framework on a variety of matters, ranging from the development of residential and business areas to the provision of emergency services and infrastructure.

A key direction of the MDP is to use land efficiently by directing growth to defined areas, thus conserving the remaining large blocks of land for agricultural use. Greater Bragg Creek is identified in the MDP as a Country Residential Community containing a Growth Hamlet. The purpose of Growth Hamlets is to support diverse employment, institutional and residential uses by co-locating uses in a commercial core. The Municipal Development Plan encourages efficient use of land in such areas by reducing the development footprint and emphasizing the importance of retaining rural character through the use of open space and conservation design principles.

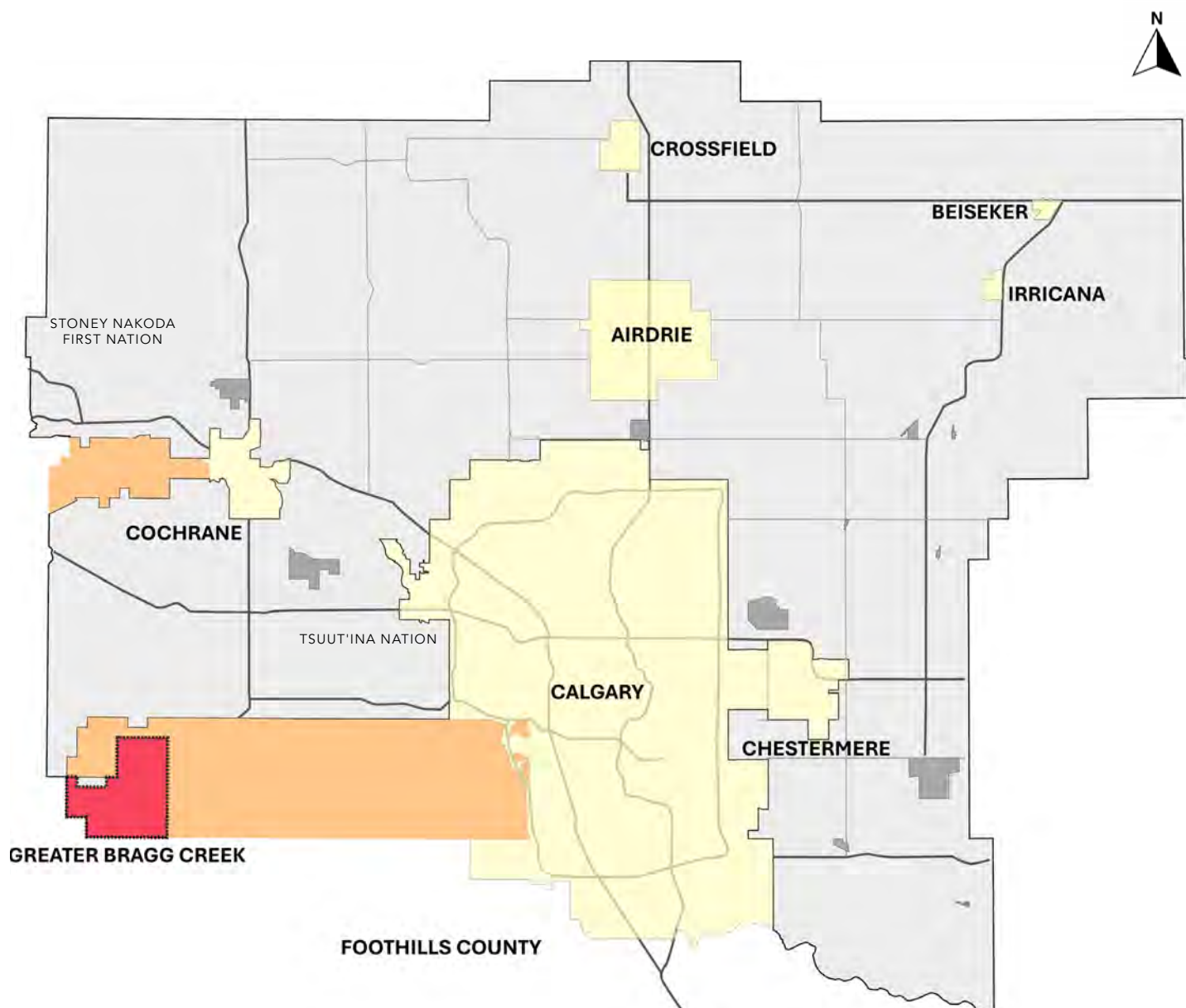
4.3 Interjurisdictional Context

The Greater Bragg Creek area is uniquely situated between the City of Calgary and Kananaskis recreation area, which is a destination recreation amenity administered by the provincial government. Additionally, the community is sharply defined by its common boundaries with adjacent jurisdictions. The Tsuut'ina Nation Reserve #145 lies immediately to the east of Bragg Creek across Highway 22. These lands are currently First Nations reserve lands used for traditional purposes as well as for development, with the Redwood Meadows community and golf course development to the north of Bragg Creek. The portion of Foothills County that is located immediately to the south of the Plan area is populated with low-density country residential development of a scale and nature similar to that found within the Plan area. Kananaskis Improvement District, immediately to the west and south, is under Provincial jurisdiction and contains a mix of land uses including outdoor recreational pursuits and natural resource extraction activities (primarily in the form of forestry).

5. PLAN AREA

The Bragg Creek Plan area applies to the lands contained within Map 1: Plan Area Location, and Map 2: Aerial Photo. Bragg Creek ASP policies are to reference the lands within the Bragg Creek Plan area boundaries. The Plan area measures approximately 4,757 hectares (11,754.80 acres). It is bounded to the west by Kananaskis Country, to the south by Foothills County, and to the north and east by the Tsuut'ina Reserve. Within the Plan area, the hamlet adjoins its eastern boundary.

In terms of its broader, regional context, Bragg Creek lies at the foot of the eastern slopes of the Rocky Mountains, within the upper reaches of the Elbow River. The Plan area contains several notable environmental features, including the Bragg Creek Provincial Park. The Elbow River traverses through the Plan area, bordering the hamlet area to its south. Highway 22, which connects to the eastern border of the Plan area, provides access to the regional highway system. Within the Plan area, it connects to Highway 758 (White Avenue), which traverses through the hamlet to the south.



Map 1: Plan Area Location

6. NATURE OF THE PLAN AREA

6.1 Physical Characteristics

The natural landscape of the Greater Bragg Creek area contains a transition between true prairie grasslands and the parkland vegetation typically found within the eastern slopes of the Rocky Mountains. The structural geology of the Greater Bragg Creek area has defined its characteristic ridge and valley topography, creating an abundance of spectacular vistas traversed by extensive areas of rugged terrain, dense vegetation and natural waterways. Complex drainage patterns form part of the headwaters of the Elbow River, through the Bragg Creek and the Jumping Pound Creek tributary systems. The watershed holds regional significance as it supplies drinking water for approximately one-sixth of the province's population. Extensive riparian habitat supports a diverse array of fish, birds, and mammals.

Both the Elbow River and the Bragg Creek area are subject to periodic flooding, resulting from a combination of late melting snow packs and multiple-day rainstorms that often create unpredictable stream flows. A significant proportion of the Plan area, and more particularly the majority of the hamlet, lies within the 1:100 year Elbow River floodplain. Outside of the floodplain, surface water drains towards lowland areas where soils are typically poorly drained glacial tills, resulting in seasonally high groundwater conditions that can impact opportunities for subdivision and development. Slope instability, high water tables, potential aquifer contamination, and ground water recharge are all issues that need to be addressed in relation to future development.

Much of the Plan area remains in an undeveloped state. While the majority (65%) of the Plan area outside of the hamlet is designated to accommodate agricultural development, the climatic, vegetative, and topographical constraints that characterize the majority of these lands support relatively low-density extensive agricultural pursuits that have not significantly impacted the natural landscape. Privately owned, open, undeveloped and/or undisturbed tracts of land exist in abundance and visually dominate the Plan area. Approximately 800 acres within the Plan area are provincially owned "leased lands" that contribute significantly to the local agricultural base and contain a wealth of undisturbed natural areas. The look and feel of these private open landscapes defines much of the character of the Plan area – a character that is cherished by local residents and sought after by developers who understand the attractiveness of the area to potential acreage owners and recreationists.

The Greater Bragg Creek area is located within a "wildland/community" interface. The existing land uses have developed in and amongst an old growth forest, which extends into the area from the adjacent forestry reserve. Fine fuel moisture content on the forest floor and the fuel loads that have been controlled by man (and not addressed by nature) create a year-round fire risk, with late winter/early spring and the fall (during leaf drop) being the highest risk times. Specialists in the Alberta Forestry Service have identified this fire risk as being equal to or greater than any area in the province. When the often uninterrupted nature of this vegetative cover is coupled with residential and agricultural property improvements, the potential is heightened for local structural fires to spread onto adjacent properties. This wildfire concern is compounded by limited availability of access to lands west of the Elbow River and somewhat lengthy response times for emergency service responders who travel to the area from other locales.

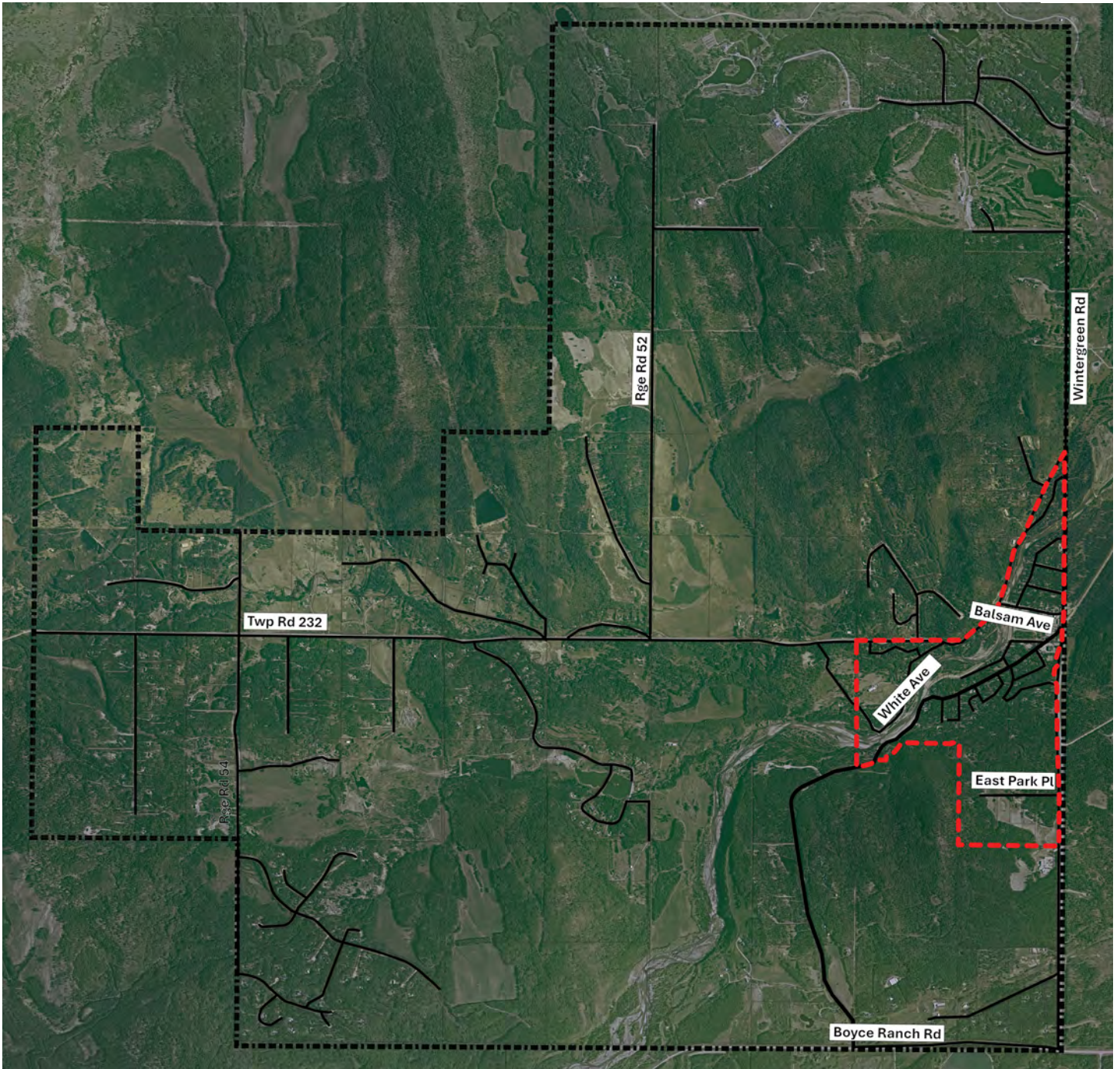
Oil and gas reserves underlie the Greater Bragg Creek and surrounding area. Although extraction activities are not taking place within the boundaries of the Plan area, industry is actively pursuing resources within lands that surround the Plan area.

6.2 Settlement History

The community of Bragg Creek “officially” began in 1914 with the construction of the first post office near the Saddle and Sirloin subdivision. Local settlers soon moved to the southern shore of the Elbow River where they discovered the frequently disastrous effects of springtime flooding. Ranching activities comprised the dominant local land use until construction of hunting lodges began in the 1920s. The first general store was built in 1921, prior to which supplies were brought into the area from either Calgary or Cochrane. Soon thereafter, construction of numerous cabins began to accommodate affluent retirees and families from Calgary wishing to enjoy the community throughout the summer months. The post World War II era witnessed many property ownership changes; largely resulting from estate and tax sales of properties owned by men who gave their lives in conflict. This wave of new owners included mostly affluent Calgaryans who were interested in pursuing the area’s recreational opportunities.

The community’s tourism economy was established during this time with the establishment of several horse rental operations and riding clubs. In the mid-1950s, the hamlet of Bragg Creek was a tiny residential community with a mix of seasonal and year-round dwellings, while the surrounding countryside contained mostly un-subdivided agricultural quarter sections. During the 1970s, improvements to the provincial transportation system made a daily commute to Calgary possible and gave rise to the creation of numerous country residential subdivisions. Since then, many of the 20-acre subdivisions within West Bragg Creek have been in-filled, with pressures for additional local subdivision and development anticipated to continue.

AERIAL IMAGERY



Map 2: Aerial Photo

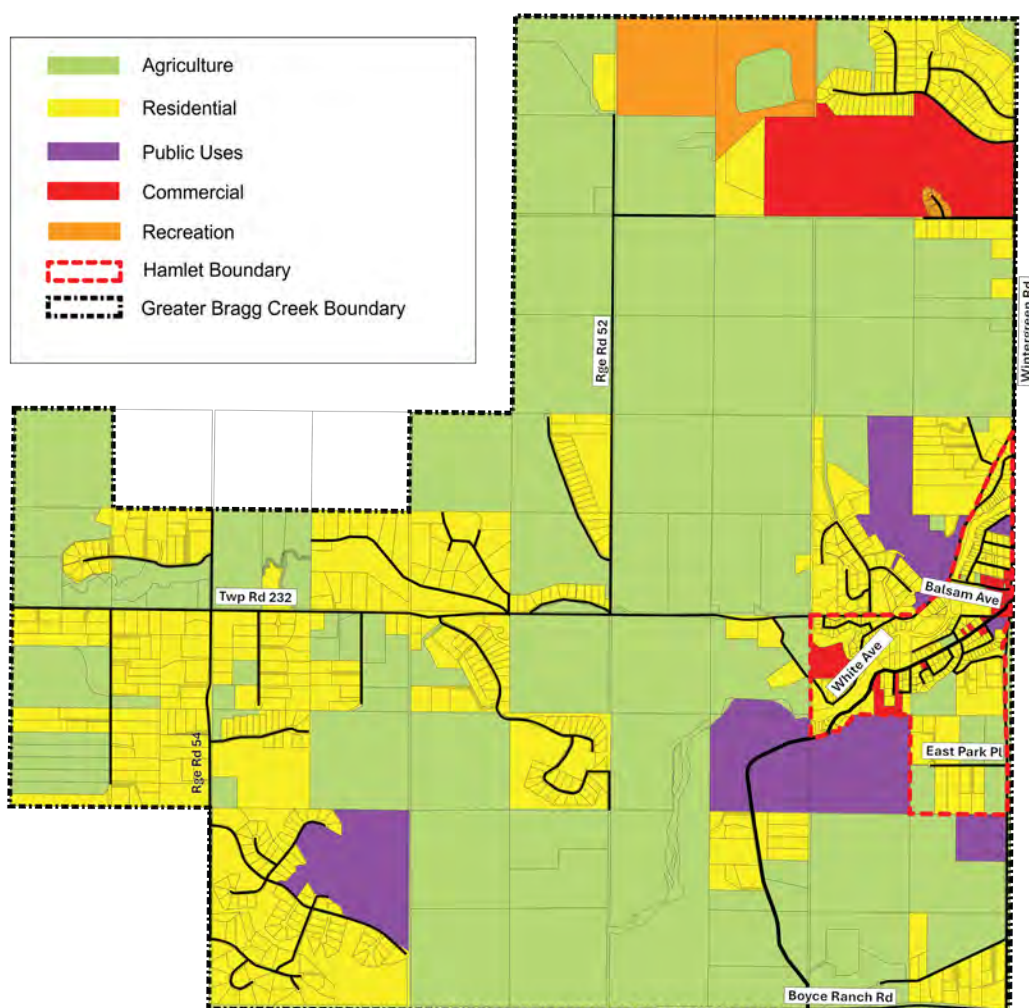
7. LAND USE CONTEXT

7.1 Existing Land Use

Map 3: Existing Land Use Map shows the existing land use types within the Bragg Creek ASP area at the time of plan adoption. The Plan Area includes a distinct commercial core that contains the majority of the businesses and services within Bragg Creek.

The natural landscape of the Greater Bragg Creek area has created opportunities for regional and provincial recreational amenities. The public day use amenity of Bragg Creek Provincial Park and the privately owned and operated Wintergreen golf course are located within the Plan area. Kananaskis Country, a significant year-round provincial recreational area, lies immediately to the west of the Plan area, resulting in Bragg Creek frequently being referred to as “The Gateway to the Kananaskis”.

Outside of the hamlet, approximately 26% of the Greater Bragg Creek area has been subdivided into country residential acreages in a somewhat incremental subdivision pattern that has, over time, responded to natural environmental constraints. These developments are surrounded by privately owned, open landscapes provided by the relatively undeveloped agricultural lands. Resulting from continued changes brought on by development, the look and feel of these open landscapes is expected to evolve over time.



Map 3: Existing Land Use Map

8. VISION AND GOALS

8.1 Vision

The following statement describes the vision that underpins the policy framework within this plan:

The Greater Bragg Creek Area Structure Plan is a forward-thinking and balanced approach to land use planning, development, and stewardship. It upholds the community's core values: living within ecological limits, fostering a connected and inclusive community, supporting a vibrant and innovative economy, promoting an active outdoor lifestyle, and nurturing a profound connection to nature and its surrounding landscapes. By providing clear and actionable guidance for future growth, the plan ensures that new development respects and enhances the character and identity of Bragg Creek. It seeks to balance the opportunities of growth with the responsibility to protect and sustain the unique natural and cultural assets that define the area, safeguarding the health of its ecosystems, and the well-being of its residents for generations to come.

The hamlet is celebrated for its distinct character, strong sense of identity, and regenerative approach to co-existing and enjoying the dynamic forest ecosystem and its wildlife. As it evolves, the Bragg Creek community remains steadfast in its commitment to preserving and enhancing the qualities that make it a beloved destination for residents and visitors alike. Guided by a deep respect for its role within the interconnected landscapes of the foothills, forests, watersheds, and wildlife habitats, Bragg Creek embraces growth as an opportunity to invest in sustainable and adaptive strategies and sustain our fundamental values of community, safety, economy, equity, affordable living, aging in place, learning, and recreating in balance with environmental stewardship, economic vitality, and social well-being, ensuring resilience in the face of change. By championing a holistic and regenerative approach to land use and development, Bragg Creek continues to thrive as a hub of ecological health and regional prosperity, contributing meaningfully to the sustainable future of its natural and human communities and serving as a model for other communities to emulate.

8.2 Goals

There are 10 goals that guide the Bragg Creek ASP. These goals are based on:

1. The Rocky View County Municipal Development Plan;
2. The vision and direction of previous Bragg Creek Area Structure Plans;
3. The existing physical characteristics of the area;
4. Public input; and
5. The key issues, constraints, and opportunities identified during the planning process.

The goals are as follows:

8.2.1 Planning for the future

- a. Ensure that new development aligns with the direction of municipal and regional policies and plans.
- b. Ensure an ordered approach to development through well-defined land use areas and appropriate transition between land uses.
- c. Meet the current and future needs of residents through promoting land uses for community-focused and locally owned businesses.

8.2.2 Live within nature's limits

- a. Demonstrate sensitivity and respect for environmental assets, particularly, forested areas, the Provincial Park, groundwater resources, and the Elbow River watershed.
- b. Demonstrate sensitivity towards wildlife habitat within the hamlet
- c. Preserve connectivity between environmental assets, such as mature forested areas and known wildlife habitat
- d. Encourage a built form that is resilient against winter weather conditions

8.2.3 Support regenerative development

- a. Support holistic approaches towards development that produce net positive environmental impacts in the community.
- b. Preserve and prioritize environmental and heritage assets, including natural areas, wetlands, and riparian areas.

8.2.4 Create high-quality places

- a. Maintain a rural lifestyle within the Plan Area outside of the hamlet.
- b. Encourage high-quality design that reflects the forested setting, low-density scale, and distinct architectural styles prevalent in the hamlet
- c. Expand community focal points, open space connections, and recreational opportunities.
- d. Provide public amenities that foster attractive, vibrant, and welcoming gathering places for residents and visitors.
- e. Promote non-motorized transportation modes within the hamlet through improved pathways and future connections.
- f. Enforce measurable design standards in the Design Control Plan that create high-quality built form

8.2.5 Provide adequate servicing

- a. Identify appropriate servicing and transportation upgrades that will address current and future growth needs.
- b. Ensure that appropriate potable water, wastewater, stormwater, and transportation infrastructure is provided within the Plan area in a safe, cost-effective, and sustainable manner.
- c. Prioritize non-motorized transport modes within the Hamlet, while providing efficient vehicular network as necessary.
- d. Provide public amenities and gathering places that are accessible, inclusive, and barrier-free for people of all ages and abilities

8.2.6 Sustainable visitor economy

- a. Support appropriate retailers, services, and amenities in the Hamlet Core that provide for the community's needs
- b. Encourage unique home-based businesses and artisanal uses within the Hamlet Village.
- c. Ensure that tourism development is sensitive to Bragg Creek's natural assets and the existing residential community.

8.2.7 Support agricultural practices

- a. Support agricultural uses outside of the hamlet until alternative forms of development are determined to be appropriate.
- b. Provide for diversification of agricultural operations as a means of maintaining an agricultural land base.

8.2.8 Build Resilience Against Natural Hazards

- a. Promote the implementation of FireSmart principles in the community.
- b. Bolster community resilience against fire events by requiring new development to meet fire resistant design standards.
- c. Recognize flood risks from the Elbow River and limit development accordingly

8.2.9 Promote Strong Governance

- a. Collaborate with government agencies, adjacent municipalities, and other stakeholders to address regional growth in accordance with the region-level planning framework
- b. Collaborate with neighbouring municipalities and provincial agencies to promote a safe and efficient regional transportation network.

8.2.10 Build inclusive communities

- a. Support diverse and affordable housing options to support the needs of varying life stages
- b. Promote accessible spaces and amenities for people of all ages and abilities
- c. Design places that facilitate the healthy development, wellbeing, and mobility of the youth community

PART B: POLICY FRAMEWORK

9. LAND USE STRATEGY

The community of Bragg Creek is centred on the Hamlet, which serves as the primary focus for residential, commercial, institutional, and community activity. Over time, the Hamlet has developed with a more compact and urban form than the surrounding rural and country residential areas. Recognizing its distinct character, development pattern, and role within the broader community, the Hamlet is guided by more detailed land use and development policies provided in Section 10 of this Plan.

Purpose

The land use strategy implements the vision for the Bragg Creek ASP by detailing the physical organization of land uses in the Plan area as identified on Map 5: Greater Bragg Creek Development Policy Areas as well as Map 6: Neighbourhood Map. The strategy identifies general land uses, the approximate boundaries of the land use area, and the policies that inform the development in each area. The land use strategy seeks to retain the vision of the existing area structure plan—an underlying objective is to continue the rural lifestyle enjoyed by residents while guiding housing growth to support current and future needs in the community. As such, the majority of the Plan Area in Bragg Creek will continue to provide opportunities for rural living, whereas future population growth will primarily be accounted for in the Hamlet.

Housing growth in Bragg Creek has historically occurred at a slower rate than the rest of the County on average; this can be attributed to limitations with existing servicing infrastructure, which has been subject to further technical analysis as part of this updated ASP. Growth envisioned within the Hamlet will be supported by short and long-term upgrades to the water and wastewater distribution systems to enable effective servicing delivery.

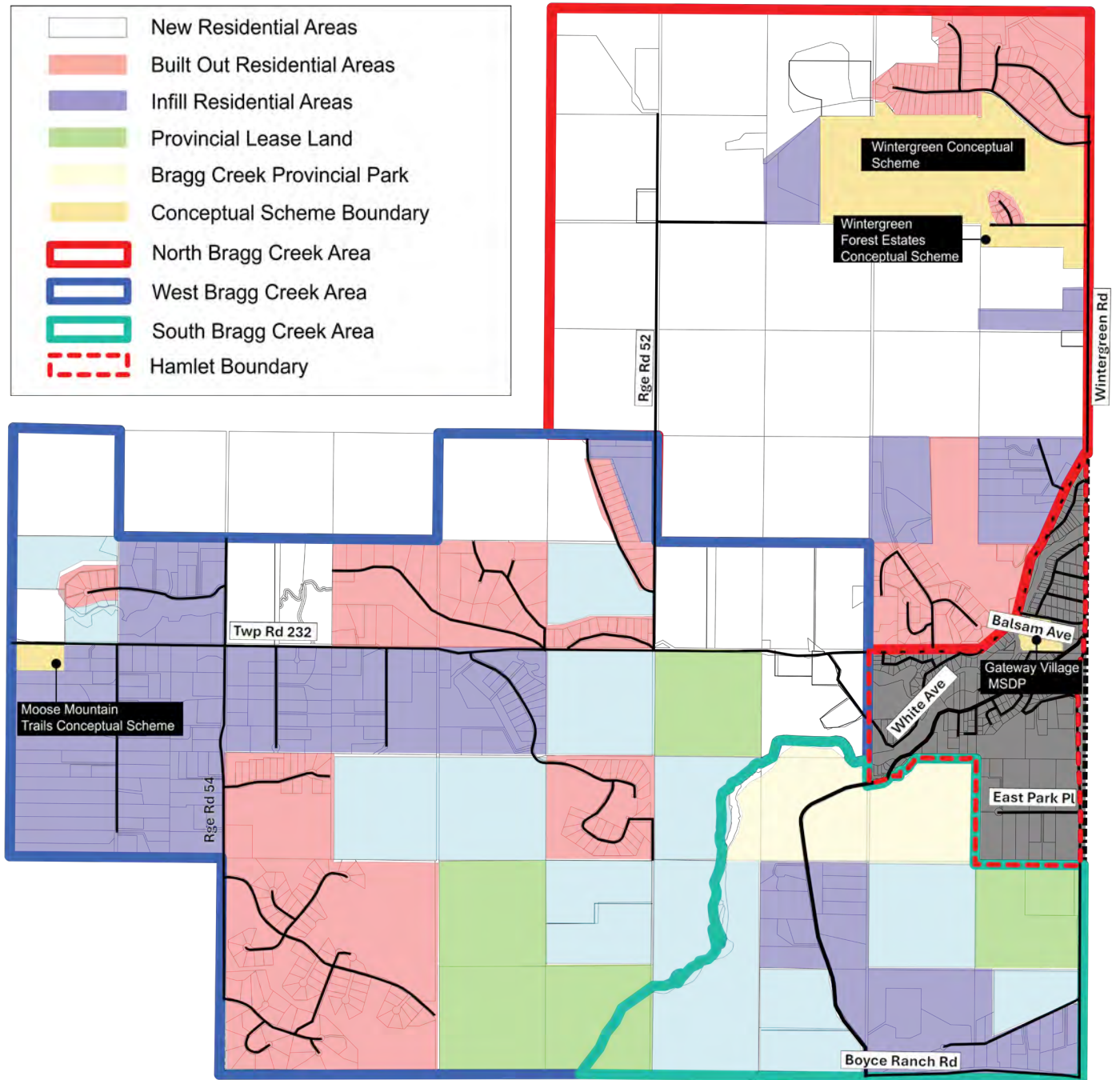
Overall, new dwellings have been planned to meet a variety of needs within the community. Multi-unit dwellings are envisioned within both the existing hamlet and new Hamlet Woods neighbourhood. New dwellings in the hamlet will co-locate with services and amenities, while those in the Hamlet Woods will present an opportunity for rural living. Final densities throughout the Plan Area will be determined at the local plan stage in alignment with this ASP. Growth expectations can be found in Table 2.

Growth Expectations

According to the County's most recent Land Use Inventory Report (2022 data), residential development in Bragg Creek occurred at an average rate of approximately four dwellings per year between 2001 and 2022, representing an average annual growth rate of approximately 0.65%. This rate is significantly lower than the average growth rate experienced across Rocky View County during the preceding decade. Population growth in the Hamlet is estimated to reach approximately 2,035 people by 2051, with a housing need of approximately 603 units. Over the much longer term, and beyond the 2051 planning horizon, the ASP identifies an eventual build-out potential of approximately 1,140 new dwellings across the Hamlet and infill areas. This represents a long-term development framework rather than an expectation that all identified units will be developed within the 2051 horizon.

Phasing

Growth within the Plan area will primarily be accounted for within the three neighbourhoods within Map 6: Neighbourhood Map. Outside of infill growth occurring via subdivision over time, intensification within the existing hamlet and the Hamlet Woods is envisioned to absorb the housing growth needed in the community.



Map 4: Greater Bragg Creek Development Policy Areas

9.1 Economy

Bragg Creek's economic future relies on a thriving natural environment. This place-based model for the economy recognizes the inextricable link between place, people, and prosperity. The economy of Bragg Creek thrives on a diverse model of locally owned store fronts, home based businesses, and tourism and residential services. Bragg Creek will continue to be a place where artistic and recreational-based businesses can flourish along with new opportunities that align with the community's values.

Building on this foundation, business uses within the Plan area are currently concentrated within the Hamlet, where a range of restaurants, cafés, retail shops, and services form a vibrant hub for both residents and visitors. The Hamlet Core is envisioned as a central node for transportation, commerce, and community activity—fostering vitality, supporting local business needs, and strengthening the resilience of the local economy. Policies in Sections 10 of this Plan provide guidance for business and commercial development in the Hamlet Core, including the delineation of the three neighbourhoods within the Hamlet. This role is consistent with the County's broader Economic Development Strategy, which recognizes tourism and hospitality as important components of the County's economy and identifies Bragg Creek as an important destination and service node within this broader framework. The ASP supports this direction by providing opportunities for tourism, hospitality, recreation, and locally oriented commercial uses in appropriate locations.

To complement the role of the Hamlet, bed and breakfast homes offer overnight accommodations outside the core while maintaining the peace and quiet of surrounding residential areas. Home-based businesses also remain an essential component of the local economy, providing commercial and light industrial services throughout the Plan area. These businesses are designed to operate unobtrusively within residential settings, balancing the rights of business owners with the expectations and comfort of neighbouring residents.

Objectives

1. Provide for the growth of local and regional business development that preserves and celebrates the character, heritage, and environmental assets of Bragg Creek.
2. Provide appropriate locations for business, commercial, and institutional uses that serve the local community, and promote the Hamlet Core as a central location for community gathering and social interaction.
3. Guide the development of appropriate mixed-use development within the hamlet.
4. Facilitate appropriate tourism activities that add to the vitality of the hamlet.
5. Outline provisions for commercial development outside of the hamlet.
6. Strive for a sustainable economy that integrates environmental stewardship and remains resilient to the changes of seasons.

Policies

9.1.1 Commercial uses located on lands within the Hamlet Core shall refer to policies located in Section 10.2 of this Plan in addition to policies within this section.

9.1.2 Commercial uses located on lands within the Hamlet Village shall refer to policies located in Section 10.3 of this Plan in addition to policies within this section.

9.1.3 New commercial and business development within the Hamlet shall connect to piped water and wastewater services.

9.1.4 Site design should incorporate Crime Prevention Through Environmental Design Principles according to policies of Section 2.4 of Appendix B.

9.1.5 Developers shall submit a traffic impact assessment in support of future subdivision and/or development within the hamlet to evaluate both vehicular and pedestrian circulation patterns and provide recommendations on necessary upgrades to both municipal and provincial road systems.

9.1.6 To tie the business activity of area to the surrounding natural environment, the use of patios, outdoor seating areas, and outdoor gathering spaces is encouraged. Various policies throughout this plan and the Design Control Plan provide further detailed design considerations.

9.1.7 Parking for business and commercial uses shall be provided in accordance with the County's Land Use Bylaw.

Businesses Outside of the Hamlet

9.1.8 Indoor and outdoor recreation facilities may be developed throughout the Greater Bragg Creek area, provided that:

- a. they are dealt with on a case by case basis through redesignation to a site-specific direct control land use district; and
- b. support for the use is provided from a majority of adjacent landowners at the time of redesignation.

Home-Based Businesses

9.1.9 Development of type I and type II home-based businesses should be encouraged. To increase the viability of type II home-based businesses:

- a. employment of non-resident staff should be allowed to a maximum of two permanent employees at any one time;
- b. Home-based businesses shall remain secondary and subordinate to the primary residential use of the dwelling or lot, in accordance with the Land Use Bylaw. The Development Authority may review the operation of a home-based business and require renewal or additional conditions where warranted based on the nature, scale, or impacts of the use.; and
- c. in all other aspects, type I and type II home based businesses shall be governed by relevant policies in the Land Use Bylaw

Tourism

Bragg Creek is uniquely situated on the Elbow River, in the foothills of the Rockies, along the primary highway network that travels west into Kananaskis Country. Originally developed as a vacation destination, Bragg Creek has grown into a hamlet that has become home to many permanent residents, while continuing to function as a gateway to the mountains.

Tourism plays a vital role in the local economy, providing significant support to small businesses, including cafes, restaurants, and boutique stores. Tourism demands also continue to shape the nature of businesses needed in the community, influencing the offerings available. For instance, this may translate to an increased need for tour operators, bike rentals, etc.

While tourism contributes to the vibrance of the local community, it presents challenges such as traffic congestion, waste management, and pressure on local trails and wildlife. As Bragg Creek grows, it is important to balance the benefits of tourism activity with sustainability to preserve the natural assets and small-town character of the community. Many of the aspects of this Plan work to either directly or indirectly grow and refine the tourist experience in Bragg Creek – particularly the land use strategy itself, and the Design Control Plan.

Objectives

1. Support development that promotes winter activities and amenities, promoting Bragg Creek as a year-round hub for outdoor recreation and tourism
2. Strengthen the Hamlet Core and Hamlet Village as a vibrant visitor destination that retains the distinct character of the Hamlet, and that prioritizes accessibility for all people.
3. Encourage the establishment of new retailers, services, and businesses that meet the evolving needs of the residents and visitors.
4. Provide for more overnight accommodation to provide opportunities for multi-day visits.
5. Support the inclusion of new tourism experience operators to diversify and enhance the visitor experience in Bragg Creek.
6. Promote sustainable tourism practices that preserve Bragg Creek's natural assets, landscapes, and distinct local character.
7. Provide for a utility servicing framework that supports development within Bragg Creek.

Policies

Visitor Experience

9.1.10 All development in the hamlet shall conform to Appendix B, to ensure a cohesive and consistent architectural character that retains the historic nature of the hamlet.

9.1.11 The nodes at the Hamlet Core and Hamlet Village shall function as staging areas for visitors, and shall be developed as destinations that complement each other in terms of experiences, business and accommodation options, and transportation modes.

9.1.12 Proposed business uses within the hamlet shall contribute towards its vitality as a hub for outdoor recreation and nature-based tourism.

9.1.13 The County should explore opportunities to implement street furniture along the Village Loop that encourages gathering and interaction.

9.1.14 Large-scale or “big box” commercial developments are not compatible with character of the Hamlet; instead, the development form should prioritize local, small-scale businesses.

9.1.15 Tourism initiatives that celebrate local culture and history are encouraged.

9.1.16 The County should explore opportunities to collaborate with local environmental groups to erect educational signage for trail users at key nodes along the trail network.

Local Business Support and Collaboration

9.1.17 The County should explore opportunities to collaborate with the Bragg Creek Historical Society to prepare a registry of key heritage items in hamlet. These buildings should be identified in a Heritage Conservation Overlay in the Land Use Bylaw.

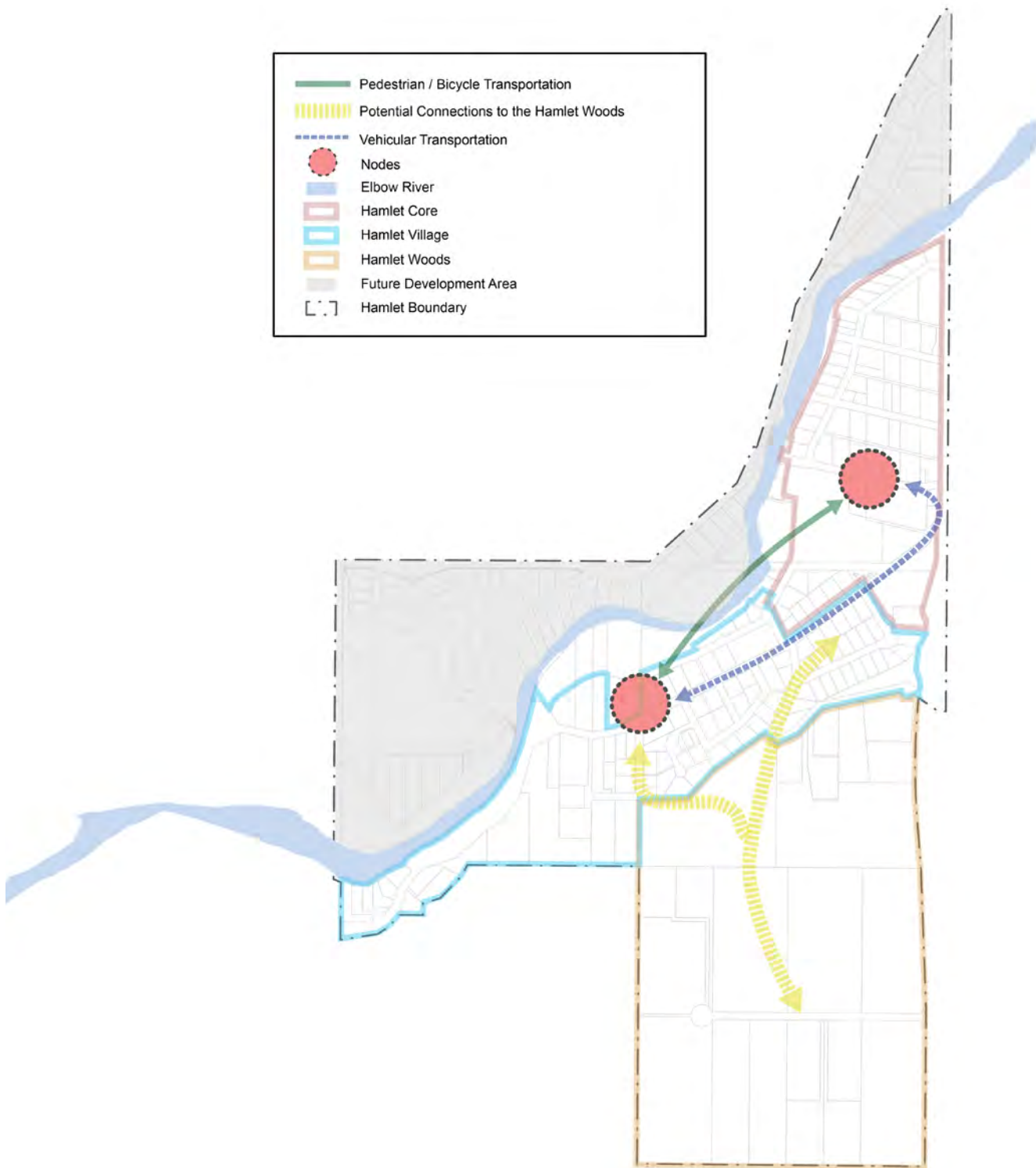
9.1.18 The County should strengthen its partnership with Travel Alberta, Foothills Tourism Association, and neighbouring communities to facilitate collaborative and integrated tourism experiences.

9.1.19 Encourage local business associations to form a Bragg Creek Tourism Working Group to coordinate marketing, events, and visitor management strategies.

Sustainability

9.1.20 Wildlife-resistant waste receptacles should be located at key locations within the Hamlet Core and Hamlet Village, including viewpoints, nodes, trailheads, and parking lots as identified on Map 7 and Map 8.

9.1.21 Tourism businesses should incorporate best practices in environmental design, including energy efficiency, water conservation, and waste reduction.



Map 5: Node Connections

Regenerative Tourism

This section gathers and reiterates policies found in other sections of the ASP that promote regenerative tourism. Policies below can be found in the Natural Environment/Wildlife, Transportation, and Stormwater sections in the ASP as well as the Landscaping and Business sections in the DCP. As shown in Table 1, the policies are not exclusively tourism-related, but have been prepared in thorough consideration of regenerative tourism. Recognizing the limitations of this document as a land use plan, the definition of “regenerative tourism” below represents an ideal vision that future development should strive to achieve.

Regenerative tourism is a sustainability practice that actively restores and enhances the natural environment, resulting in net-positive outcomes for local ecosystems and communities. In essence, regenerative tourism treats tourism as an integrated system rather than a stand-alone economic activity.

Green Infrastructure refers to natural vegetative systems and technologies that provide environmental, social and economic benefits. Examples of green infrastructure include elements such as urban forests, bioswales, green roofs/walls, parks, and urban agriculture.

Table 1: ASP and DCP Policies Related to Regenerative Tourism summarizes key policies from the ASP and Design Control Plan that support the principles of regenerative tourism. The policies are organized by topic to illustrate how land use, environmental protection, wildlife management, mobility, stormwater, public realm design, and local economic development collectively contribute to a more sustainable visitor economy. While these policies are not exclusively tourism-related, they have been identified because they help protect and enhance the natural, cultural, and community assets that support Bragg Creek as a destination. The table is intended to demonstrate how regenerative tourism principles are integrated throughout the Plan rather than addressed through a single stand-alone policy section.

Topic	Policy number(s)	How it supports regenerative tourism
Local economy, heritage and community identity	ASP 9.1.10, 9.1.14–9.1.19	These policies retain Bragg Creek’s distinct architectural and cultural character, prioritize local and small-scale businesses, support heritage conservation, and encourage community-led tourism partnerships. This helps tourism strengthen local identity and keep economic benefits connected to the community.
Nature-based tourism and environmental education	ASP 9.1.12, 9.1.16, 11.3.27	These policies reinforce Bragg Creek’s role as a nature-based recreation destination while using environmental and trail-head education to promote responsible visitor behaviour, trail etiquette, and greater awareness of local ecosystems.
Natural features, forest character and tree retention	ASP 11.1.3–11.1.6, 11.5.2–11.5.4 \nDCP 3.1.1(2)–(3), 5.1.2(3)–(6)	These policies require development to retain connected natural features, minimize fragmentation and tree removal, protect mature vegetation, and replace removed trees with native or hardy species. This preserves and restores the forested landscape that is central to Bragg Creek’s ecological health, community character, and visitor experience.
Wildlife connectivity and conflict reduction	ASP 9.1.20, 11.1.9–11.1.17, 12.4.3, 12.4.6 \nDCP 2.3.1(4), 2.3.2, 2.3.3(1), 2.3.4(2), 7.1.2(2)–(6)	These policies protect wildlife corridors, reduce habitat fragmentation, require replacement planting where corridor vegetation is removed, promote wildlife-friendly fencing, and require wildlife-resistant waste infrastructure. Together, they reduce human-wildlife conflict associated with development and visitor activity.
Trails, visitor access and visitor management	ASP 11.3.7, 11.3.9, 11.3.11, 11.3.16, 11.3.27 \nDCP 6.1.4, 6.1.8	These policies connect visitors to recreation, heritage and community destinations while requiring trail development to respect environmentally sensitive areas, support wildlife movement, provide visitor education, and organize wayfinding and staging areas. This improves access without separating tourism from environmental stewardship.
Low-impact mobility and year-round visitor movement	ASP 12.1.14–12.1.15, 12.1.43–12.1.45 \nDCP 3.2.2, 5.1.7(8)–(13), 6.1.7(11)–(14), 6.2.1	These policies support Low Impact Development in road design, pedestrian connections between Hamlet destinations, the River Drive Promenade, cycling and micro-mobility facilities, and all-season pedestrian routes. This reduces dependence on vehicle travel while supporting a safer, more accessible, year-round visitor experience.
Green infrastructure, stormwater and watershed health	ASP 12.3.7, 12.3.9, 12.3.14–12.3.15, 12.3.18–12.3.19, 12.3.24–12.3.25 \nDCP 5.1.11	These policies integrate bioswales, rain gardens, permeable surfaces, stormwater reuse, bio-engineering, natural drainage, and other Low Impact Development measures into future development. They reduce runoff, improve water quality, conserve water, support groundwater recharge, and help maintain watershed and wetland functions.
Sustainable tourism operations and resource efficiency	ASP 9.1.21, 12.4.4 \nDCP 5.1.11(7)–(10)	These policies require or encourage tourism and business development to reduce energy and water use, minimize and divert waste, harvest rainwater, use native vegetation, and make sustainable water-management practices visible to the public. This reduces the operational footprint of tourism while using development as an opportunity for environmental improvement and education.

Table 1: ASP and DCP Policies Related to Regenerative Tourism

Accommodation Options in Bragg Creek

The Rocky View Tourism Sector Profile conducted during the preparation of this ASP identifies the need to expand accommodation options across the County as the tourism industry continues to experience growth. Generally, a range of accommodation options may be possible, dependent on the land use district applicable to the parcel. These potential options include hotels/motels, bed and breakfasts, campgrounds, and vacation rentals.

Short-Term Accommodation

Short-term accommodation provides temporary lodging to visitors and contributes to Bragg Creek's tourism economy. Short-term accommodations in Bragg Creek should include a variety of accommodation types, including traditional hotel or inn-style accommodations, campgrounds, cabins and cottages, along with more unique options like yurts, A-frames, garden suites, etc.

9.1.22 The County should update the Land Use Bylaw to ensure that the variety of accommodation types envisioned in this ASP, including bed and breakfast operations, are permitted within appropriate areas of Bragg Creek and that suitable regulations are established to guide their development and operation.

9.2 Residential

The evolution of local subdivision and its resulting settlement pattern within the Plan area outside of the hamlet can be characterized by one of three categories: built out residential areas, infill residential areas and new residential areas. Policies within this section do not pertain to land within the Hamlet.

Built-out Residential

Built out residential areas consist of existing planned subdivisions, with parcels that are 2 acres in size (on average), that were comprehensively developed and are considered “end subdivisions” without potential for further subdivision. Further subdivision can occur where parcels currently have a land use designation that allows subdivision; otherwise, no further subdivision is allowed.

9.2.1 Built-out residential areas are defined on Map 4: Greater Bragg Creek Development Policy Areas.

9.2.2 No further subdivision for residential purposes, and no redesignation to an alternative land use district, shall be permitted for lands within areas identified as built-out residential areas, unless the subject lands are assigned, at the time of adoption of this Plan, a land use designation under the Land Use Bylaw that permits further residential subdivision. Where existing lots carry such a land use designation, subdivision may be considered, to create lots as small as the minimum parcel size permitted within that land use district.

Infill Residential

Infill residential areas refer to parcels that have already been subdivided greater than eight lots per quarter. These areas typically contain a subdivision pattern that appears somewhat incrementally planned with parcels typically ranging in size between 4 and 20 acres. Future subdivision densities in infill residential areas should be calculated on the basis of a ratio of lots per acre of gross developable area (See Section 9.2.24 for Gross Developable Area – An Explanation and Example).

9.2.3 Infill residential areas are defined on Map 4: Greater Bragg Creek Development Policy Areas.

9.2.4 Except where permitted by the policies of this Plan, conceptual schemes should be required for all redesignation and/or subdivision applications in infill residential areas, within predetermined conceptual scheme boundaries, as defined in Map 4: Greater Bragg Creek Development Policy Areas.

9.2.5 In West and North Bragg Creek, parcel sizes within infill residential areas should not be less than 4 acres with an overall density of not greater than one lot per 4 acres of Gross Development Area (GDA).

9.2.6 In South Bragg Creek, parcel sizes within infill residential areas should not be less than 2 acres with an overall density of not greater than one lot per 3 acres of GDA.

9.2.7 Future subdivision within infill residential areas should:

- a. reflect densities that have been calculated on the basis of a ratio of lots per acre of GDA, as illustrated in the following explanation and example in Figure 1.
- b. address areas that represent constraints to development, yet do not qualify as environmental reserve, by including them within individual lots, provided that they are protected from development. The exact mechanism(s) to ensure protection shall be negotiated between the developer and the County and could include restrictive covenants, use of an environmental land trust and/or conservation easements;

- c. respect the size, configuration, and orientation of the immediately adjacent subdivision pattern;
- d. mitigate potential issues related to access, surface drainage, vegetation removal and sight line conflicts by encouraging collaboration amongst all directly affected landowners; and
- e. have frontage onto a developed municipal road. Construction of new municipal roads within infill residential areas should be discouraged

New Residential

In most cases, new residential areas consist of unsubdivided quarter sections; in others, they represent the remainder of a quarter where some subdivision, generally of a comprehensive nature, has already occurred. Future development in these areas should follow policies established in this Plan to create and protect open space. The policies in this section pertain to future residential development within Infill Residential and New Residential development areas, and do not pertain to land within the Hamlet.

9.2.8 New residential areas are defined on Map 4: Greater Bragg Creek Development Policy Areas.

9.2.9 Except where permitted by the policies of this Plan, conceptual schemes should be required for all redesignation and/or subdivision applications outside the Hamlet.

9.2.10 Isolation of a first parcel or existing farmsteads may continue to be considered, based on the merits of individual applications.

9.2.11 Parcel sizes within new residential areas in west and north Bragg Creek should not be less than 0.25 acres, and not greater than 2 acres, with an overall density of not greater than one lot per 4 acres of GDA.

9.2.12 Parcel sizes within new residential areas in south Bragg Creek should not be less than 0.25 acres, and not greater than 2 acres, with an overall density of not greater than one lot per 3 acres of GDA.

9.2.13 Notwithstanding 9.2.11 and 9.2.12, parcel sizes greater than 2 acres may be considered when it can be demonstrated, to the satisfaction of the County, that a larger parcel size will support agriculture and/or open space planning; however, these parcels shall form part of the gross developable area (GDA).

9.2.14 Future subdivision within new residential areas should be in the form of cluster developments, and should (See Appendix A for Cluster Development definition):

- a. include a variety of lot sizes;
- b. address areas that represent constraints to development, yet do not qualify as environmental reserve, by, to the extent possible:
- c. including them as
 - i. lands identified as open space, and
 - ii. where the amount of these areas is greater than the area available for open space, including them within individual lots, provided that they are protected from development. The exact mechanism(s) to ensure protection shall be negotiated between the developer and the County and could include restrictive covenants, use of an environmental land trust and/or conservation easements;
- d. When planned in proximity to existing agricultural operations, infill residential areas, existing children's ranch (No Ka Oi Foundation), Wintergreen golf course and recreational facility, or Bragg Creek Provincial Park, provide suitable transitioning and buffering to limit potential for land use conflicts;

- e. be designed to provide at least two points of access onto an existing developed municipal road.
- f. be accessed via construction of new municipal roads. To further reduce the removal of vegetation, alternate municipal road design standards may be considered provided that vehicle movements can be safely and efficiently accommodated and the municipal rights-of-way are able to sufficiently accommodate water, wastewater and/or stormwater infrastructure.
- f. Areas that represent constraints to development, either because they are unstable or because they are environmentally sensitive should be protected from development. These areas include slopes in excess of 15%, water bodies and wetlands, and riparian buffer. Where these areas qualify as environmental reserve under the MGA, the land should be dedicated to the County (See Section 11.1 for policies to protect the natural environment).

9.2.15 Future subdivision should:

- a. be evaluated based on the land's ability to accommodate additional development and not negatively impact the natural environment (e.g. riparian areas, wildlife movement corridors, upland forested areas, and existing plant communities). Riparian buffers should be respected adjacent to all surface water bodies;
- b. only permit single detached dwellings;
- c. comprehensively evaluate its cumulative impact on the local and regional transportation network (i.e. capacity of Township Road 232, Centre Avenue, and the single bridge crossing at Balsam Avenue; Highways 22, 66 and 758). Upgrades to municipal collector roads and improvements to intersections of municipal roads with provincial highways may be required to facilitate future development;
- d. limit the removal of existing vegetation to accommodate additional building sites while encouraging implementation of FireSmart design principles; and
- e. dedicate municipal reserves to provide alignments for the defined community pathway system, where appropriate.

9.2.16 In some cases, panhandles should be considered to access new building sites without frontage onto a developed municipal road provided that its alignment:

- a. can accommodate a privately maintained all-weather surface capable of providing year-round access to the building site for emergency service vehicles;
- b. encourages single points of access for multiple building sites to limit the location and frequency of approaches onto municipal roads;
- c. does not impact environmentally sensitive areas; and
- d. can be developed with an approach that meets all applicable municipal standards.

9.2.17 Consultation with existing agricultural operators adjacent to a conceptual scheme shall be undertaken during the preparation of a conceptual scheme to minimize residential impacts on existing agricultural operations through dialogue, buffering, phasing of development, respect for "Right to Farm" legislation and a sensitive development plan.

9.2.18 Keeping of animals on lots greater than or equal to 4 acres in size, subdivided for residential purposes, should be encouraged (in conformity with the Land Use Bylaw) to maintain the rural nature of the Plan area. However, consideration

should be given to their proximity to more concentrated residential development and the need for best management practices to be followed to reduce off-site impacts from manure management and stormwater runoff on the sub-basin.

9.2.19 Subdivision design within new residential areas should follow principles designed to encourage the creation and preservation of open space and to protect areas that represent constraints to development.

9.2.20 For purposes of this section of the Plan, open space means lands that are restricted from development and that, following subdivision, are contained within a title separate from any parcel that allows for residential or public utility development. These lands should represent a large percentage (approximately 50%) of the lands to be developed. They will be held in perpetuity for the benefit and enjoyment of residents in the future through the effective use of such tools as conservation easements, environmental land trusts, or common property within a bareland condominium.

9.2.21 High priority shall be given to maintaining open space in an undeveloped state for such purposes as stormwater management; protection of wildlife movement corridors and areas of significant habitat; and/or retention of biodiversity.

9.2.22 Tools used to implement the creation and preservation of open space should clearly:

- a. identify the maintenance requirements and responsibilities for these areas; and
- b. identify appropriate allowable land uses for each open space area and restrict incompatible uses, in keeping with the policies of this Plan,

9.2.23 Future subdivision design in new residential areas should reflect principles to create and preserve open space.

9.2.24 Gross Developable Area

Gross developable area (GDA) is the amount of land that remains once areas that represent constraints to development have been subtracted from the titled area (gross area). For example, in a quarter section containing 160 acres (i.e. with 160 acres of gross area) that has a water body that affects 8 acres of land, an associated riparian buffer of 7 acres and slopes in excess of 15% that affect 9 additional acres, there is a GDA of 136 acres.

At this point, lands required to be dedicated as municipal reserve and lands required for infrastructure such as roads and public utility lots have not been accounted for. Municipal reserves equal 10% of the parcel area that remains after lands that qualify as environmental reserve under the MGA have been identified and subtracted from the original parcel area. Lands required for infrastructure are dependent on the design and utility servicing requirements of the proposed development. Because these are unknown until the development has been finalized, it is easier to understand the implications of a density policy if gross developable acres are used in the calculations.

The GDA is divided by the overall density allowable on the parcel to determine the maximum lot yield (the maximum number of lots able to be created on the parcel). In infill residential areas in north and west Bragg Creek, at an overall density of one lot per 4 acres of GDA, the quarter section used in the above example would be able to be subdivided to create a total of 34 lots. In south Bragg Creek, where an overall density of one lot per 3 acres of GDA is allowed, the maximum lot yield would be 45 lots. Areas required for dedication of municipal reserve or for internal subdivision roads etc. would decrease the actual number of lots that could be created because the overall density is equal to the minimum parcel size.

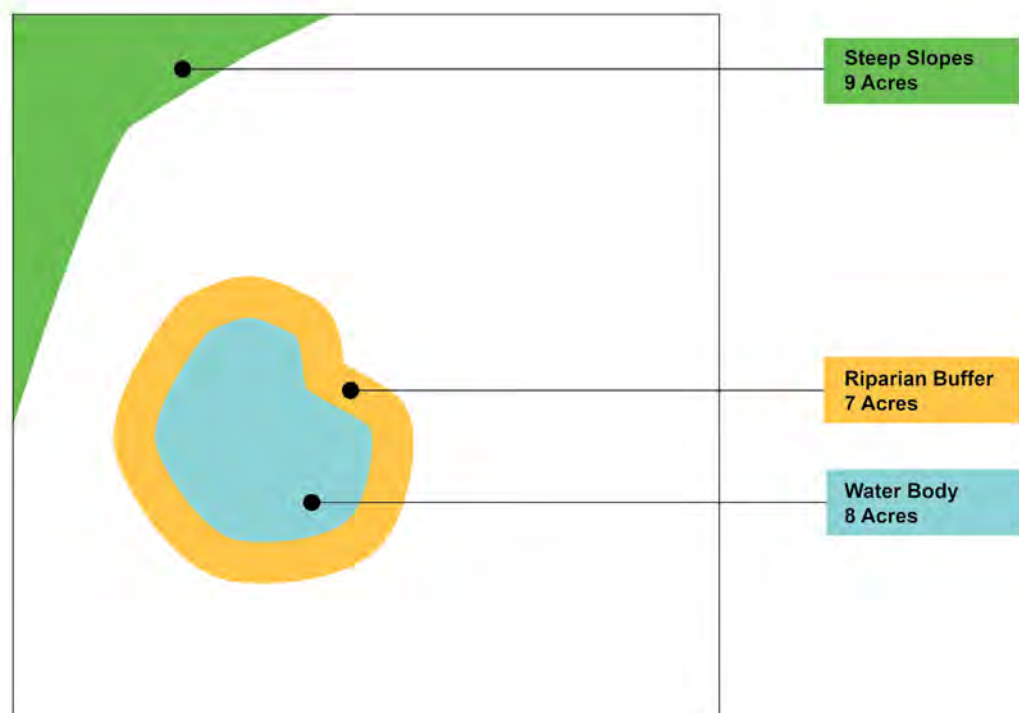


Figure 1: Gross Developable Area Calculation Example

9.2.25 Open Space Design

The maximum residential lot yield for a parcel of land within a new residential area should be calculated according to the gross developable area formula contained above (GDA). Once the maximum number of lots is determined, the following steps should be followed to define and preserve open space areas (See Appendix A for Cluster Development definition):

- a. identify those areas that represent constraints to development. These areas are to be protected from development;
- b. identify those areas that are desirable to preserve as amenities, such as historic features, treed areas, wetlands, areas of contiguous habitat or wildlife movement corridors, etc. To the extent possible, both these areas and areas that represent constraints to development should be included as open space;
- c. identify residential building sites, to accommodate development of lots to the maximum lot yield;
- d. identify the location of applicable municipal reserve lands, in keeping with the policies of this Plan that identify appropriate use of reserve lands;
- e. determine road alignments and location of utility infrastructure facilities required to service the proposed building sites;
- f. determine the area, to be included within each lot associated with a building site. These lot areas shall not contain lands identified for municipal reserve, or areas identified as environmental reserve under the Municipal Government Act;
- g. lands not included in lots, roads, or municipal infrastructure are considered to be open space. Open space lands identified for municipal reserve, or as environmental reserve under the Municipal Government Act will remain in public ownership and will be largely undeveloped. The balance of these open space lands shall be protected from development. The exact mechanism(s) to ensure protection shall be negotiated between the developer and the County and could include restrictive covenants, use of an environmental land trust and/or conservation easements; and
- h. to the extent possible (i.e. to the extent that the area required by lots is less than or equal to the amount of land available for open space), lands that firstly, represent constraints to development and secondly, represent areas that are desirable to preserve as amenities, should be included in open space and not within lots.

Lands required to be dedicated as municipal reserves should be laid out to maximize the objectives of this Plan according to Section 666 of the Municipal Government Act. Road alignments and lands to house water, sanitary and storm sewer facilities required to service this development would be identified. Finally, lot lines could be determined to identify the area to be contained within each residential lot. Lands identified early in the process as either areas that represent constraints to development or desirable to protect as amenities would not be contained within these lots, nor would lands identified as municipal reserve. Lots would be a maximum of 2 acres in size. In West and North Bragg Creek, 68 acres would be contained in residential lots: in South Bragg Creek, 90 acres would be developed for lot purposes.

The balance of the lands (i.e. those not contained in lots, being used as roads, or to house infrastructure) would constitute the open space that is to be protected from development. For the sake of this example, in North and West Bragg Creek, the 34 two acre lots would account for 68 acres. If, in addition, an estimate of 10% of the area developed for lots (6.8 acres) is required for roads and infrastructure, there would be 53% (85.2 acres) of the 160 acre parcel protected as open space. In South Bragg Creek, the 45 two acre lots would account for 90 acres. If an additional 10% of the area developed for lots (9 acres) is required for roads and infrastructure, there would be 38% (60 acres) of the 160 acre parcel protected as open space.

9.3 Agriculture

Agricultural development plays an important part of the lifestyle within Bragg Creek. The Rocky View County Agriculture Master Plan (AMP) 2025 provides a long-term framework to meet the agricultural needs of communities across the County. Agricultural lands within Bragg Creek will continue to offer environmental benefits, such as stormwater management, ground and surface water filtration and recharge, wildlife movements, wildfire risk reduction, and the economic sustainability of environmentally sensitive lands. Policies within this section align with the vision of the AMP and aim to promote a balance between agricultural preservation with economic diversification. Future development will be sited and designed with sensitivity to existing agricultural uses, minimizing any impacts that could have a negative effect on these uses.

Objectives

1. Support Agriculture Right to Farm Policy and the Agricultural Operations Practices Act through appropriate transition policies and measures set out within the Agricultural Boundary Design Guidelines.
2. Support opportunities for diversification of agricultural uses and the blending of agricultural practices with compatible non-agricultural uses (business, institutional and residential).
3. Continue to support agricultural uses and agricultural subdivisions (including first parcels out, farmsteads, and new or distinct agricultural use) until alternative forms of development are determined to be appropriate.

General

9.3.1 In support of the Province's 'Right to Farm' legislation, local plans shall acknowledge and strive for compatibility with adjacent agricultural lands and operations.

9.3.2 Agricultural land uses should be promoted and encouraged to continue within the Plan area. In consultation with the landowner, land should be protected and enhanced through land conservation programs that improve their economic viability, such as land trusts, conservation easements and transfer of development credits (if endorsed by the County).

9.3.3 Redesignation and subdivision for agricultural purposes may be considered if the purpose of the proposed subdivision is to create a new or expanded agricultural operation.

9.3.4 Agricultural land uses should:

- a. incorporate and implement best management practices for all agricultural operations; and

- b. participate with Provincial and County initiatives to improve and implement methods of best management practices.

9.3.5 Redesignation and subdivision for agricultural purposes may be considered if the purpose of the proposed subdivision is to create a new or expanded agricultural operation.

9.3.6 Introduction of new or expanded agricultural uses within the Greater Bragg Creek area should be evaluated in accordance with the following criteria:

- a. compatibility with the character of the area;
- b. ability of the land to accommodate the type, scale, size, and function of the proposed agricultural use;
- c. minimization of negative impacts on adjacent lands;

- d. minimization of negative impacts on local municipal infrastructure (e.g. road network, stormwater management, etc.); and
- e. minimization of negative impacts on the environment (e.g. air quality, natural drainage systems, disturbance of riparian areas, wildlife movements, etc.).

9.3.7 Existing agricultural operations within the Plan area should continue to be supported until such time as development of those lands to another use is deemed to be appropriate, in accordance with the policies of this Plan.

9.3.8 Redesignation, subdivision, or development permit applications facilitating agricultural uses and development shall demonstrate:

- a. compatibility with the surrounding character of the area;
- b. the site can sustain the proposal as it relates to the type, scale, size, and function of the use;
- c. the compatibility of the proposed use with the adjacent existing land uses;
- d. alignment with the provisions of the Municipal Development Plan and the Land Use Bylaw;
- e. minimal impact on the environment, including air quality, and surface and groundwater hydrology;
- f. compliance with any other matter the County deems appropriate.

9.3.9 Any development that shares a boundary with agricultural operations shall address and adhere to the County's Agricultural Boundary Design Guidelines within any local plan, redesignation, subdivision, or development application.

9.3.10 Agricultural heritage buildings and cultural landscapes should be integrated wherever possible into future land use and development changes.

9.3.11 Introduction of new agricultural activities with potential to create significant negative off-site impacts should not be permitted.

9.3.12 Introduction of confined feeding operations shall not be permitted.

Redevelopment of Agricultural Land Uses

9.3.13 Sensitive integration of existing agricultural land uses should be a primary consideration when evaluating proposals for non-agricultural developments.

9.3.14 Redevelopment of existing agricultural lands should identify and mitigate any resulting changes to stormwater management, wildlife movements and view sheds.

9.3.15 Where development of agricultural lands with non-agricultural uses is deemed appropriate, the resulting subdivision design shall accommodate an appropriate transition and buffer from any existing agricultural operation.

9.3.16 Wherever possible, redevelopment of agricultural lands with non-agricultural developments should proceed in a logical fashion on lands that are contiguous to existing non-agricultural developments and should not negatively impact existing agricultural operations.

9.3.17 Agricultural buildings with local significance should be integrated, wherever possible, within future non-agricultural land uses.

10. PLAN POLICIES: HAMLET OF BRAGG CREEK

10.1 Hamlet Areas

The Hamlet of Bragg Creek is the commercial and community heart of the Plan area and contains the majority of businesses and services that serve residents and visitors. Within the Hamlet, distinct neighbourhood areas have developed with different land use patterns, built forms, and character. The Hamlet Core, Hamlet Village, and Hamlet Woods recognize these differences and provide more detailed direction for the future development of each area, as shown on Map 6: Neighbourhood Map.

The Hamlet is intended to accommodate a diverse mix of residential, commercial, tourism, institutional, cultural, and community uses that contribute to a complete and vibrant community. Local-serving businesses, small-scale retail and services, arts and cultural uses, tourism-related activities, home-based businesses, overnight accommodations, and a range of housing options are generally appropriate where they are compatible with the character and function of the applicable neighbourhood area. The specific uses permitted on individual parcels will continue to be determined through the Land Use Bylaw.

Development within the Hamlet should reinforce a pedestrian-oriented, small-town environment. Large-scale, vehicle-oriented, truck-related, or intensive outdoor-storage uses that detract from pedestrian activity or the established character of the Hamlet are generally not appropriate, particularly within the Hamlet Core. Development should instead contribute to active streets, comfortable pedestrian connections, gathering spaces, and a built form that responds to Bragg Creek's existing scale and character.

The Hamlet is intended to remain active and welcoming throughout the year. Public spaces, streetscapes, and new development should respond to winter conditions through pedestrian comfort, weather-responsive design, flexible gathering areas, and opportunities for seasonal markets, events, outdoor seating, and other temporary community activities. More detailed winter-supportive design requirements are provided in Section 6.2 of the Design Control Plan.

Future development throughout the Hamlet should preserve its forested setting, support pedestrian connectivity, minimize unnecessary disturbance to the natural landscape, and incorporate appropriate wildfire and flood-resilience measures. More detailed land use and development direction for the Hamlet Core, Hamlet Village, and Hamlet Woods is provided in Sections 10.2, 10.3, and 10.4.

Objectives

1. Preserve local identity in the hamlet and ensure appropriate future development.
2. Facilitate diverse housing options to promote affordability.
3. Preserve the environmental assets of the community through thoughtful design and planning.
4. Maintain the forested character of the Hamlet through the preservation of mature trees along key corridors.
5. Enhance the tourist experience in the hamlet by creating pedestrian-friendly environments.
6. Ensure that the visual and ecological character of Bragg Creek is preserved through context-sensitive, low-impact development.
7. Provide opportunities for a small-town environment that supports a strong sense of community.
8. Promote subdivision and building forms that minimize land disturbance and maintain a strong connection to the natural landscape.
9. Require the application of best practices in fire and flood mitigation through site and building design.
10. Ensure new subdivisions preserve the natural landscape and integrate with the existing community form.

Nodes are key places within a neighbourhood where multiple activities and transport modalities converge. They typically combine business, recreational, and tourism functions such as shopping, dining, parking, and bicycle or pedestrian paths, making them a nexus of activity and movement. Each of the three neighbourhood areas in Bragg Creek has a central node that act as natural destinations that people gravitate to.

1. The Hamlet Core Node (on Map 7) is primarily focused on commercial activity, featuring shopping amenities, a main street, and convenient parking that supports retail and services.
2. Hamlet Village Node (on Map 8) emphasizes pedestrian oriented experiences, with bike racks, dining, and a network of trails and loops that connect to surrounding natural pathways and the orchid park, encouraging walking, biking, and outdoor recreation.
3. The Hamlet Woods does not have a node that has developed yet. The node in this area will be determined at the time of conceptual scheme.

10.1.1 Nodes are supported primarily by the transportation, land use, and design policies set out within this plan. Local Plan applications within node areas shall include a description of how the proposed development will support the intent of the node.

10.1.2 Home-based businesses with limited outside storage should be encouraged within the hamlet, and shall demonstrate compliance with Appendix B: Design Control Plan in this Plan.

10.1.3 Recognizing the desire to create and to maintain a pedestrian friendly environment, the following uses should not be supported in the hamlet core:

- a. Amusement and entertainment services;
- b. Auctioneering services;
- c. Automotive, equipment and vehicle services;
- d. Outdoor storage, truck trailer;
- e. Restaurant, drive through;
- f. Truck trailer services; and
- g. Warehouse stores

Overnight Accommodations

10.1.4 Continued development of bed and breakfast operations is encouraged in conformity with requirements of the Land Use Bylaw.

Year-round Hamlet Activation

10.1.5 Public realm features should be designed to promote pedestrian safety and comfort during winter conditions.

10.1.6 The County should prioritize winter activation initiatives in the Hamlet Core to support year-round local commercial activity.

10.1.7 New development within the hamlet should incorporate winter-supportive design measures in compliance with Section 6.2 of the Design Control Plan.

10.1.8 Flexible gathering spaces are encouraged within the hamlet, allowing for year-round use while maintaining an active and attractive winter presence.

10.1.9 Public and semi-public spaces within the hamlet should be designed to accommodate temporary, pop-up uses such as:

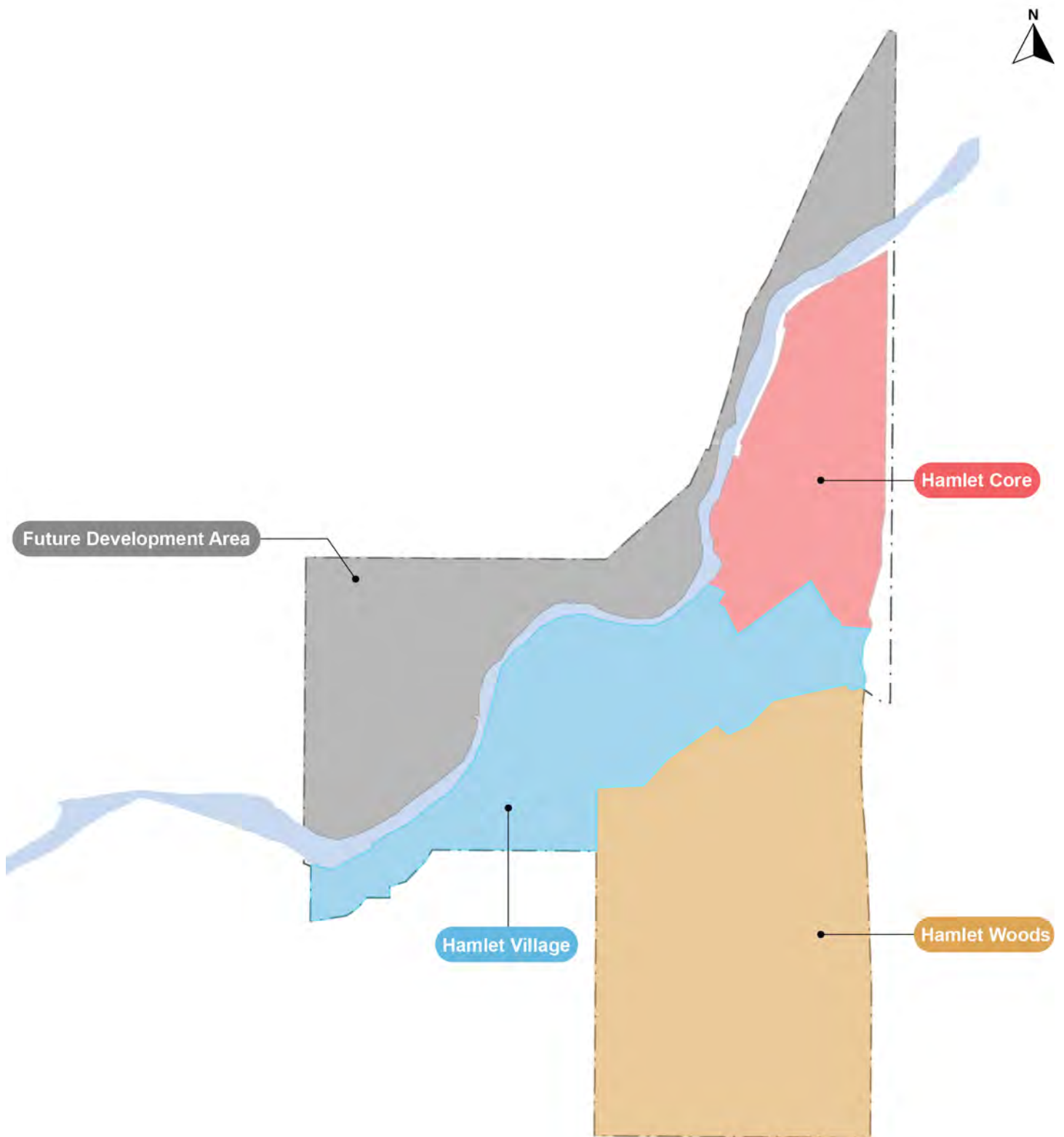
- seasonal markets;
- small performances;
- holiday programming;
- outdoor seating;
- community gathering;
- temporary installations and displays.

Development Area	New Units	Existing	Total	GDA (ac)	Density (UPA)
Hamlet Core	180	80	260	80	3.25
Hamlet Village	40	79	119	95.4	1.25
Hamlet Woods	850	14	864	221	3.91
Infill Residential	70	-	70	-	-
Total New Dwellings	1140	173	1313		

Note: average density is calculated using total anticipated units (existing + new) divided by GDA.

Table 2: Hamlet Dwelling Unit Forecast

Table 2 provides the anticipated residential unit yield and density framework for the Hamlet and is intended to guide the evaluation of future residential growth and development in the Hamlet. The average densities identified in the table should be considered when reviewing land use redesignation, subdivision, conceptual scheme, and other development proposals within the Hamlet. The table is intended to guide the overall pattern and intensity of residential development and does not require every individual parcel or development to achieve the identified average density. More detailed policies applicable to specific areas of the Hamlet are provided in the following sections and should be read together with Table 2.



Map 6: Neighbourhood Map

10.2 Hamlet Core

The Hamlet Core is the commercial and community heart of Bragg Creek. It contains a mix of shops, services, gathering spaces, and residential uses that serve both residents and visitors. Future development should strengthen its walkable, village-style character while respecting the Hamlet's forested setting and connection to the Elbow River. The Hamlet Core is envisioned to have a compact, walkable form and contribute to the overall density framework identified in Table 2, while remaining compatible with the mixed-use character of the core.

The node identified on Map 7: Hamlet Core functions as the primary hub of commercial development in the Hamlet. It represents a destination gathering place for hamlet residents, and is the natural "landing place" for tourists who are traveling to Bragg Creek and passing through to the West Bragg Creek Recreation area. A primary function of this node is as a staging area, where vehicles can be parked upon arrival to the hamlet, and visitors access the destinations within the hamlet primarily by walking or cycling.

A staging area should include the following features

1. Provision for public parking
2. Easily accessible pedestrian routes that are connected directly to parking area(s).
3. Wayfinding maps that are easily visible and protect viewers from weather.
4. Public amenities such as benches, tables, wayfinding information, public washrooms, and waste receptacles.

Policies

10.2.1 The policies within this section apply to the area identified as the Hamlet Core on Map 7: Hamlet Core.

10.2.2 Commercial uses should be the predominant development form within the Hamlet Core, with mixed use and medium-rise residential housing to be incorporated via sensitive design and density framework provided in Table 2.

10.2.3 All new medium-rise housing developments shall comply with controls outlined in Section 4.2 Multiple Unit Residential of Appendix B Design Control Plan of this Plan.

10.2.4 All proposed development within the Hamlet Core shall comply with Section 2.1 in Appendix B Design Control Plan of this Plan.

10.2.5 Commercial development shall be attractively designed, fit with existing development, and address the County's Commercial, Office, and Industrial Design Guidelines and the design requirements of Appendix B.

10.2.6 Commercial areas shall be designed and oriented in such a way that ensures safe and efficient access from adjacent roadways.

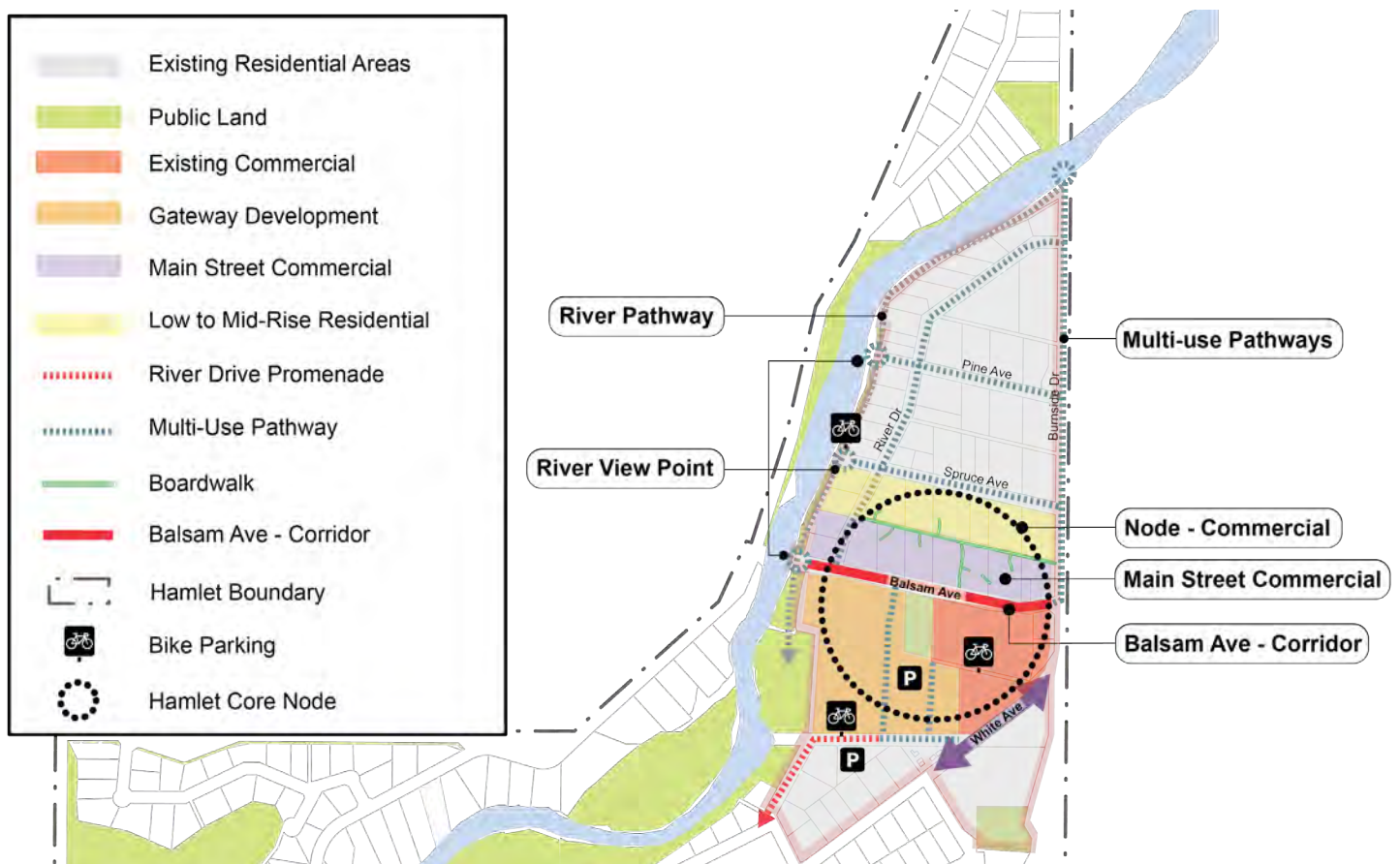
10.2.7 Commercial development shall provide for convenient, attractive, and efficient pedestrian and bicycle-friendly linkages between building entrances, sites, and, where applicable, adjacent areas.

10.2.8 All lighting, including security and parking area lighting, shall be designed to limit overall light pollution and sky glow, conserve energy, reduce glare, and minimize light trespass onto surrounding properties in accordance with the Land Use Bylaw and other relevant County policies and standards.

10.2.9 Buildings on Balsam Avenue should generally maintain a consistent pattern of spacing and create active street frontages to attract pedestrian traffic.

10.2.10 The County should consider endeavours to encourage public art, cultural markers, and interpretive storytelling at major viewpoints along the River Pathway.

10.2.11 The County should erect wayfinding maps and signage at viewpoints at critical intersections and along the River Pathway. Wayfinding signage should be prioritized for Balsam Avenue, particularly at its intersection with River Drive North and Burnside Drive.



Map 7: Hamlet Core

10.3 Hamlet Village

The Hamlet Village neighbourhood is generally located to the south of the Hamlet Core and the Elbow River, and north of the Hamlet Woods as depicted in Map 8: Hamlet Village. Developed primarily between the 1950s-1980s, the existing built form is primarily single-detached houses on lots approximately 0.5 acres on average.

On the west end of White Avenue, the Trading Post is a destination that will draw tourists from the Hamlet Core. The transportation network encourages people to travel there on foot or by bicycle using pathways along the river and a pedestrian-oriented shared street along River Drive South.

Future development will preserve the serenity of the forested neighbourhood character and continue the existing low-density built form, consistent with the overall density framework identified in Table 2. Artisanal uses and home-based businesses are encouraged, particularly along River Drive South. The Hamlet Village Node will serve as a gathering spot connecting various active transportation routes for residents and visitors.

Policies

General

10.3.1 The policies within this section shall apply to the area identified as the Hamlet Village on Map 8: Hamlet Village.

10.3.2 All development shall comply with Section 3.2 in Appendix B Design Control Plan.

Residential

10.3.3 Residential built form shall be single detached or semi-detached.

- a. Despite the above, multiple residential units may be developed on a single lot for developments that cater to seniors. Multi-unit development shall be comprehensively planned through a Master Site Development Plan.

10.3.4 Overnight lodging shall be secondary to a principal residential use. In the Village node, overnight lodging may be a principal use on a lot.

Business Use

10.3.5 Home-based businesses shall be supported within the Hamlet Village, and particularly encouraged along parcels fronting the River Promenade.

Village node

10.3.6 Standalone businesses, particularly artisanal retail, home-based businesses, and other small-scale unique businesses, are encouraged within the Village Node to form a secondary point of interest within the hamlet.

10.3.7 County reserve lands within the Village Node would be developed as park spaces that function as a destination gathering place for the community and for patrons of businesses in the village. The County may consider discharging some or all of the reserve lands along park place to support development of local-focused commercial or institutional uses.

River Promenade

10.3.8 River Drive South shall generally be developed as a River Promenade, within the portion identified on Map 8: Hamlet Village, prioritizing pedestrian activity while allowing vehicular access for residents.

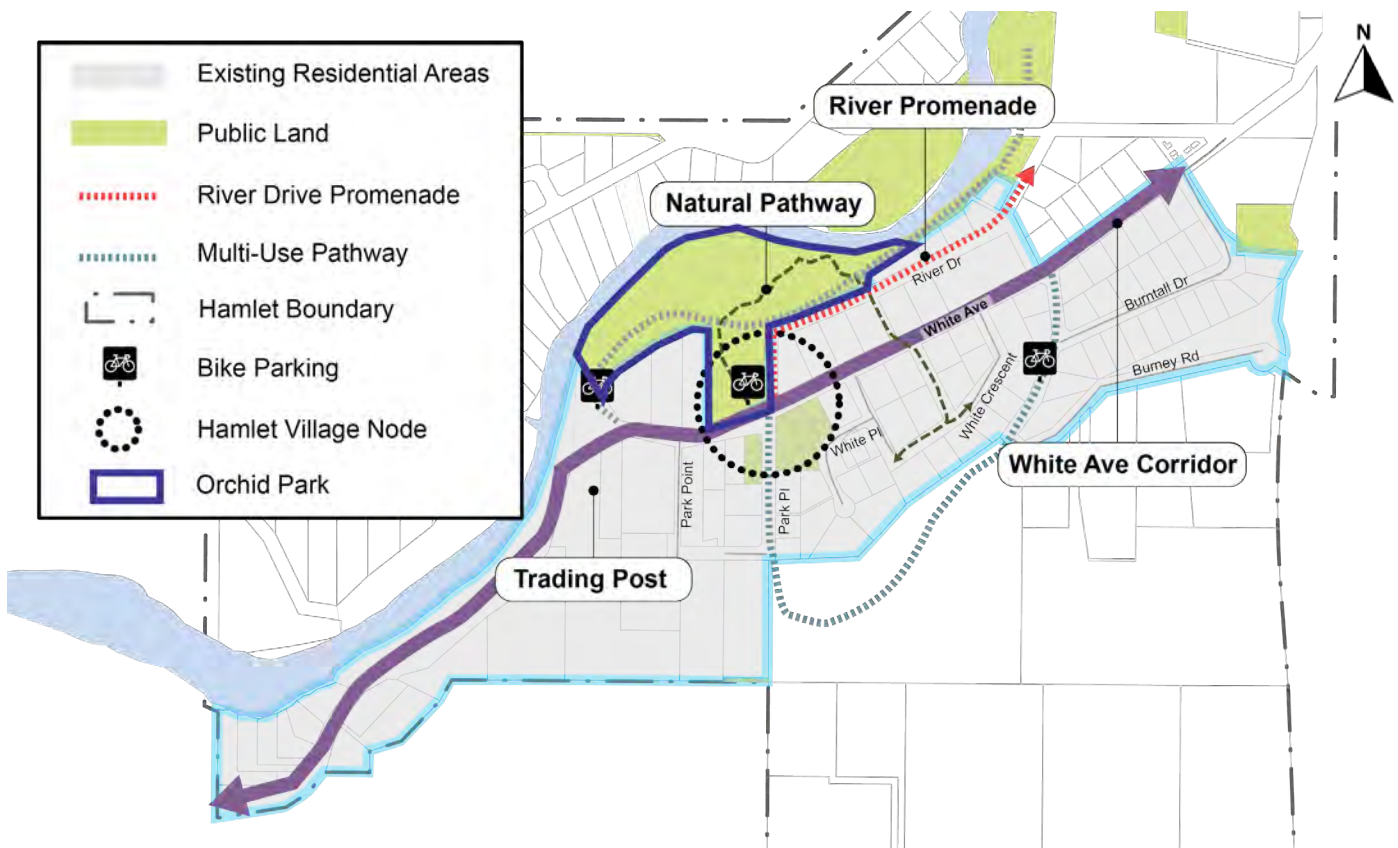
10.3.9 The redevelopment of River Drive into a River Promenade may be developed in phases along with the general redevelopment of the Hamlet Village and Hamlet Core. This phasing should occur from east to west, ensuring continuous and progressive connection from the Hamlet Core to Hamlet Village.

River Promenade is envisioned as a shared street designed to function as a pedestrian-focused connector linking the Hamlet Village to the Hamlet Core. This supports multi-modal access while prioritizing pedestrians and enhancing connections to community and retail areas.

The primary intent of River Promenade is to create a comfortable and inviting pedestrian environment that supports home-based businesses, seamlessly connecting to both the Hamlet Core and the River Pathway network. In addition, River Promenade may accommodate occasional temporary closures where appropriate and subject to approvals to vehicular traffic during festive occasions, allowing the community to host markets, music performances, art exhibitions, and other public events. Visitor parking is anticipated to be provided within the Hamlet Core to support these activities.



Illustration of River Promenade



Map 8: Hamlet Village

10.4 Hamlet Woods

The Hamlet Woods is located to the south of the existing hamlet, west of Highway 22, east of the Bragg Creek Provincial Park, and north of Banded Peak School as shown in Map 9: Hamlet Woods. It is characterized by continuous mature forest canopy, which forms both an ecological and visual continuation of the Provincial Park to its west. Future development will integrate fire resilience and conservation measures, being sensitive to its interface with Bragg Creek Provincial Park.

The Hamlet Woods have been identified for future residential development to accommodate population growth and changing needs in Bragg Creek. New residential development in this area will occur through a local plan to deliver streamlined, cohesive, and environmentally sensitive development. While the densely treed landscape contributes to the “nestled in the forest” feel, buildings need to be protected from wildfire risk by FireSmart vegetation management. In order to accommodate FireSmart clearance area while maintaining substantial forest, residential built forms within forested areas are encouraged to share property lines, so that FireSmart buffers can overlap. To further facilitate this vision, pocket neighbourhoods are encouraged as a design concept.

Policies

10.4.1 A conceptual scheme shall be required prior to the approval of any land use redesignation within the Hamlet Woods.

10.4.2 Subdivision in the Hamlet Woods may be considered prior to approval of a Conceptual Scheme where it can proceed under the existing land use designation.

10.4.3 Applications for conceptual schemes for lands within the Hamlet Woods shall address requirements listed under Appendix C: Conceptual Scheme Requirements.

10.4.4 Applications for conceptual schemes for lands within the Hamlet Woods shall address requirements within the County’s Servicing Standards for secondary access connections.

10.4.5 Development within the Hamlet Woods should generally contribute to the anticipated residential unit yield and average density framework identified in Table 2. Final densities shall be determined through the local plan process.

10.4.6 All new residential developments shall conform to Appendix B: Hamlet of Bragg Creek Design Control Plan.

10.4.7 Residential development within the Hamlet Woods should provide a range of compatible building typologies, including single-detached dwellings, semi-detached dwellings, duplexes, and townhouses.

10.4.8 Residential buildings within the Hamlet Woods shall be limited to a maximum height of 12.0 metres.

10.4.9 All site designs shall minimize vegetation clearing and grading.

10.4.10 Where significant areas of vegetation or natural open space are retained as part of a development, the local plan shall identify an appropriate long-term ownership, management, and maintenance mechanism. This may include common ownership through a condominium corporation, homeowners’ association, or other suitable legal mechanism to support coordinated vegetation management.

10.4.11 Proposals for landscaping shall include native species to maintain a natural appearance.

10.4.12 All utilities should be installed underground wherever feasible to preserve visual aesthetics and reduce wildlife risk.

10.4.13 Applications for development permits shall include a site-level tree retention plan.

Phasing

10.4.14 Development phasing and site layout within Hamlet Woods shall be determined through the Conceptual Scheme process based on servicing, transportation access, environmental constraints, drainage, topography, and vegetation conditions.

Non-Residential Uses

10.4.15 Non-residential uses shall be limited to local-focused commercial and institutional uses.

10.4.16 Non-residential uses shall be clustered in a single area within the Hamlet Woods, and should be located adjacent to Highway 22 wherever feasible.

The Hamlet Woods are envisioned to develop in a way that maintains their forested character and responds sensitively to the natural landscape. Figure 2: Built Forms in Hamlet Woods provides examples of how future development could achieve this through building placement, clustering, shared setbacks, and other design approaches that help reduce unnecessary vegetation removal.

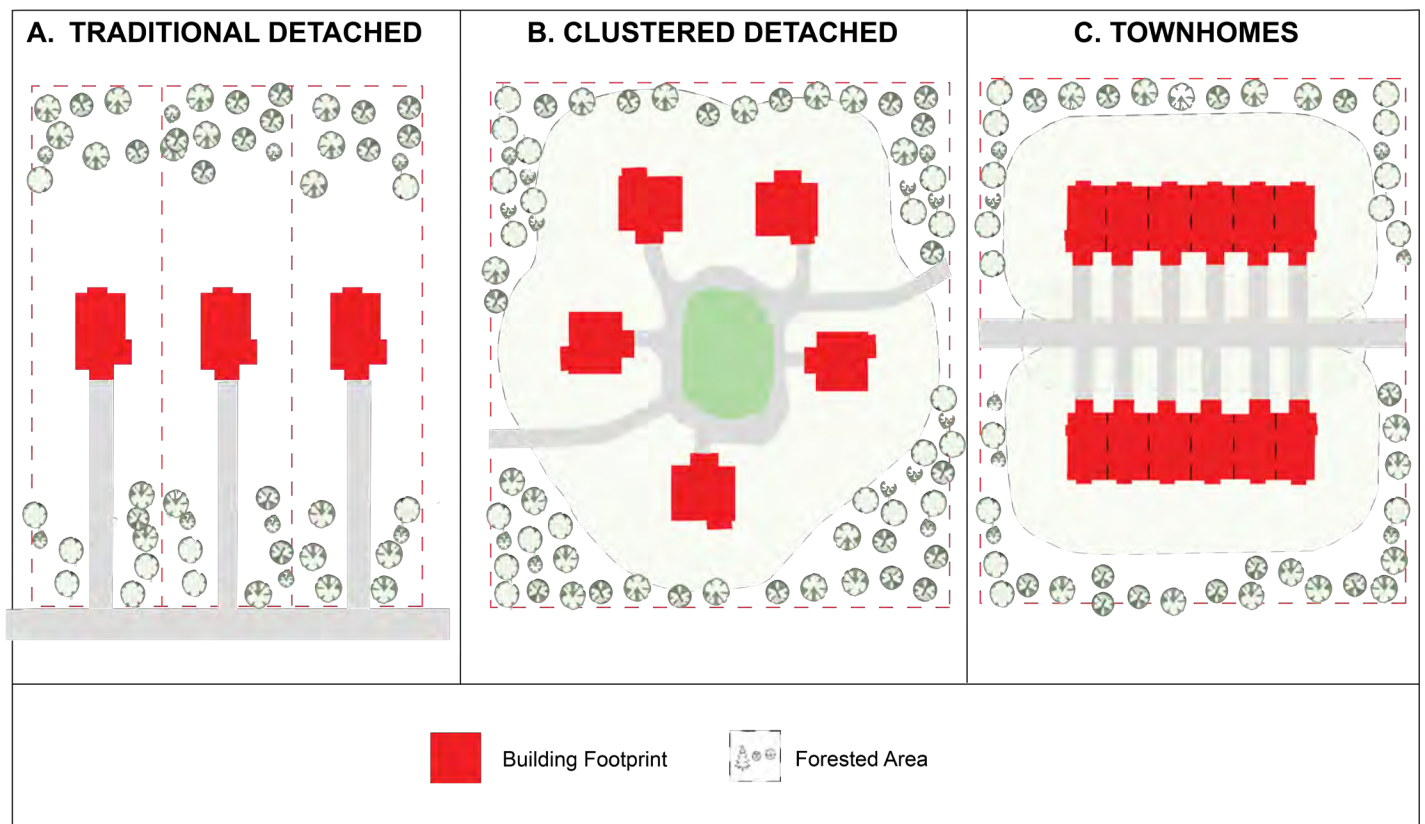
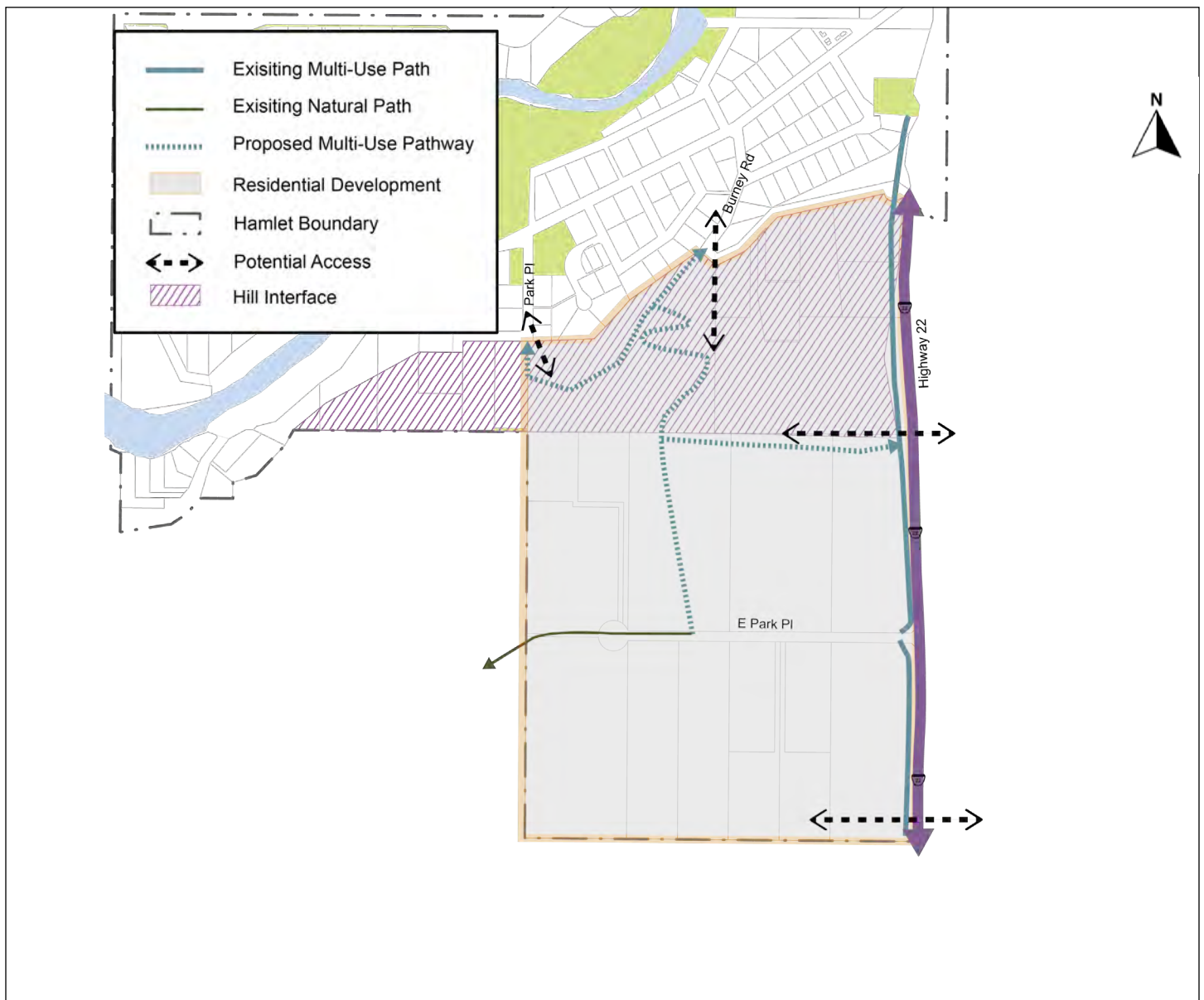


Figure 2: Built Forms in Hamlet Woods

Hill Interface

10.4.17 The following policies apply to those lands identified as “Hill Interface” on Map 9:

- a. The Conceptual Scheme shall identify the minimum percentage of existing tree canopy to be retained within the Hill Interface. The percentage shall be supported by a site-specific tree inventory and environmental analysis.
- b. In alignment with Section 11.1: Natural Environment and Wildlife, the Hill Interface shall maintain a contiguous natural area to facilitate wildlife movement between the Two Pine area and Bragg Creek Provincial Park. This area may contain multi-use paths, but should otherwise consist of undisturbed natural features.



Map 9: Hamlet Woods

10.5 Future Development Area

The Future Development Area is characterized by country residential uses on lots generally 0.5 to 1 acre in size. This area is situated on the west side of Elbow River, with Balsam Bridge being the only access to and from the area as shown in Map 6: Neighbourhood Map. Until a secondary emergency access route is available for West Bragg Creek, intensification west of the Elbow River is discouraged. Subdivision and development may continue under existing zoning.

Policies

10.5.1 The Future Development Area is defined as per Map 6: Neighbourhood Map.

10.5.2 Policies 9.2.1 and 9.2.2 for Built-Out Residential Areas shall apply to the Future Development Area.

10.5.3 Upon the completion of a secondary egress road to lands west of the Elbow River, the County may undertake a review of policies within this section with respect to density and subdivision.

10.5.4 Water servicing shall be provided in accordance with Section 12.2 of this Plan.

11. PLAN POLICIES: NATURAL AND COMMUNITY AMENITIES

11.1 Natural Environment and Wildlife

Bragg Creek is home to a rich abundance of biodiversity. Residents of Bragg Creek deeply value living in proximity to nature, and appreciate the views, landscape, and glimpses of wildlife. Preservation of the beauty and integrity of the natural environment is a key value of residents and visitors alike. The sublime character of Bragg Creek is defined by a continuous, mature forest landscape. Development will continue to occur in harmony with the natural environment to a scale and character that blends with, rather than dominates the landscape, and in a manner that respects the carrying capacity of the land. To understand more completely the contribution that the Greater Bragg Creek area makes to the broader ecosystem within which it lies, a resource inventory and sensitivity analysis (RISA) was completed and attached as Appendix E in this plan. Wildlife habitat in the Plan area represents a core component of the area's ecological health, community character, and long-term environmental resilience. Bragg Creek supports a rich variety of wildlife species, such as elk, deer, moose, bears, cougars, and a wide range of birds and small animals. Intact habitat provides essential wildlife corridors that allow animals to move safely, reduces human-wildlife conflict, and maintains healthy population dynamics. For residents and visitors, the presence of wildlife contributes to the community's identity, recreational appeal, and tourism economy, making habitat protection a key element of sustainable land use planning.

Objectives

1. Ensure that future development identifies and considers biophysical and heritage assets within the Plan Area.
2. Minimize the disturbance caused by development to the topography, landscape features, and natural assets.
3. Support development that preserves wetlands, watercourses, riparian areas and forested lands,
4. Identify existing natural amenities, such as wetlands, watercourses, riparian areas, and forested land,
5. Identify and conserve ecologically sensitive and high-value wildlife habitats, including riparian zones, forested areas, and known movement corridors.
6. Guide land use patterns, development forms, and recreational activities to reduce undesired human-wildlife contact.

Policies

Natural Environment

11.1.1 At the time of Conceptual Scheme or Master Site Development Plan preparation, a Biophysical Impact Assessment (BIA) shall be submitted in accordance with the County's Servicing Standards. The BIA shall study the existing environment, and shall assess the impact of the proposed development, with an emphasis on wetlands, vegetation, and wildlife. The BIA shall also include a survey of any historic resources on the site.

11.1.2 At the time of Conceptual Scheme or Master Site Development Plan preparation, a study to delineate and classify the Environmentally Sensitive Areas to properly determine setbacks and future protection steps, such as Environmental Reserves,

shall be submitted in accordance with the County Servicing Standards.

11.1.3 Conceptual Scheme or Master Site Development Plans shall demonstrate the connectivity and function of retained natural features.

11.1.4 Development shall be designed to minimize disruption to, and fragmentation of, natural areas and wildlife habitats by:

- a. Incorporating ecological features such as natural vegetation, topography, and water bodies into the design at the Conceptual Scheme or Master Site Development Plan, Land Use Amendment, and Development Permit stages;

- b. Utilizing environmentally-friendly landscaping where practical; and
- c. Preventing the spread of invasive non-native species in Environmentally Sensitive Areas.

11.1.5 Subject to municipal budget considerations, the County should maintain an ongoing inventory of the vegetative biodiversity within the Greater Bragg Creek area, to measure the cumulative impact of development on the area and age class composition of major plant communities. This inventory should be updated at least every five (5) years and integrated with the County's asset management practices.

11.1.6 According to the discretion of the County, the Land Use Bylaw should be amended to require approval for the removal of significant areas of trees within the Plan area.

11.1.7 The County should explore opportunities to collaborate with local environmental groups and incentivize citizen science efforts to improve data collection on natural assets.

11.1.8 The County should review opportunities to support private land stewardship initiatives for landowners.

Wildlife Habitat and Corridors

11.1.9 Wildlife movement occurs within the undisturbed natural areas that link upland vegetation with riparian areas. In order to preserve and maintain opportunities for wildlife movements throughout the Plan area and to minimize fragmentation of the natural environment by providing contiguous habitat, environmental reserves shall be dedicated to preserve and maintain habitat and natural connectivity between riparian edges and upland forested areas.

11.1.10 Where identified contiguous habitat areas and/or wildlife movement corridors do not qualify as environmental reserve or environmental reserve easement, consideration shall be given to other mechanisms to preserve and maintain wildlife habitat and connectivity.

11.1.11 Where such opportunities for connectivity cannot be acquired through dedication of either environmental or municipal reserves, landowners shall be encouraged to voluntarily register conservation easements to preserve and maintain wildlife movement corridors.

11.1.12 The County should review opportunities to partner with local organizations to create mapping of wildlife habitat and connectivity across the Plan area. This mapping should integrate local, known wildlife corridors and linkages.

11.1.13 Where possible, known wildlife corridors and linkages should be integrated with proposed developments at the local plan level.

11.1.14 Development siting and building envelopes shall be sited to minimize habitat fragmentation and clearing to the highest extent possible.

11.1.15 At the local plan and development permit stages, development shall be designed to allow wildlife movement through and around the overall community, such that wildlife is attracted to areas designed to allow safe movement (e.g. wildlife corridors) and detracted from residences and roads to reduce interactions with people and vehicles.

11.1.16 Local plans shall identify policies on the use of appropriate buffers between known high wildlife use areas (e.g. wildlife corridors) and developed areas and the strategic use of fencing within development proposals to reduce obstructions to wildlife movement, but to also limit road collisions.

11.1.17 Local plans shall identify policies to minimize removal of vegetation within wildlife corridors and, where removal is necessary, to provide replacement planting of equal or greater ecological value elsewhere within the site.

Wetlands

11.1.18 Wetland protection shall be guided by County, regional, and Provincial policy.

11.1.19 Local plans shall identify wetlands within the local plan area using the Alberta Wetland Classification System to determine wetland classification and relative wetland value.

11.1.20 Local plans shall determine, through consultation with the Government of Alberta, whether wetlands are Crown owned land.

11.1.21 Wetlands not claimed by the Crown that have a high relative value, as per the Alberta Wetland Classification System, shall be dedicated as environmental reserve or covered by an environmental reserve easement.

11.1.22 Where wetlands are not retained, appropriate compensation shall be required, in accordance with Provincial policy.

Riparian Areas

11.1.23 A riparian buffer policy shall be implemented within the Plan area in order to restrict and/or regulate development within the riparian buffer of all surface drainage features (including wetlands).

a. For lands outside of the hamlet, the riparian buffer for the Elbow River is a 50-metre strip that extends outside of the active flood plain. For all streams, tributaries and wetlands, the riparian buffer is defined as a 30-metre strip on both sides of the stream or edge of the wetland, measured from the high water mark as shown in the Map 10: Environmental Features.

b. Within the hamlet of Bragg Creek, the riparian buffer for the Elbow River is a 50-metre strip that extends beyond the floodway.

11.1.24 Subdivision that is approved within a riparian buffer shall be undertaken in a manner that ensures the protection of the riparian buffer. The exact mechanism(s) to ensure protection shall be negotiated between the developer and the County and could include restrictive covenants, use of an environmental land trust, dedication as environmental reserve, or some other permanent protective solution.

11.1.25 The riparian buffer policy shall be consistent with the directives and objectives of Alberta's longterm water strategy and shall be implemented in a manner that recognizes the Elbow River and its aquifers as an important source of water for human consumption. Rocky View County shall undertake consultation with relevant watershed management groups as part of any future amendment process respecting the riparian buffer policy.

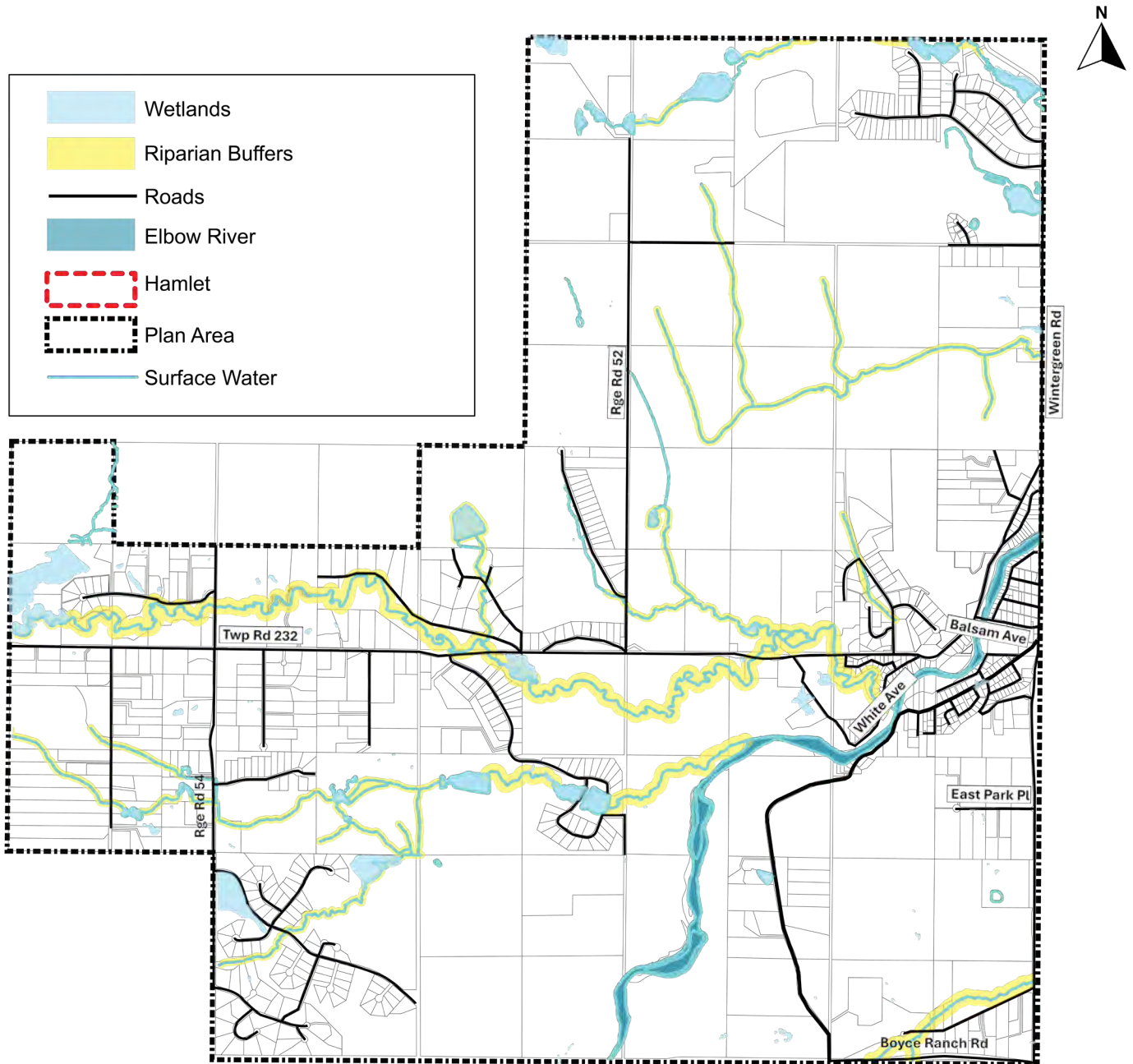
11.1.26 The Land Use Bylaw shall be amended to regulate development within the riparian buffers identified in this ASP. For lands outside of the hamlet, within the riparian buffer, Land Use Bylaw regulations shall address land use and the redevelopment of existing structures and shall prohibit the development of new structures. Within the hamlet, Land Use Bylaw regulations shall regulate development within the riparian buffer by requiring development permits for all developments within the riparian buffer, and by regulating site design, coverage and grading, as well as tree removal, landscaping, land use,

setbacks, and flood proofing, so as to promote the protection and enhancement of the riparian buffer's natural qualities. Land Use Bylaw regulations, which apply to the riparian buffer within the hamlet, may take the form of new land use district(s).

11.1.27 New residential subdivisions shall not be permitted within the riparian setback of the Elbow River within the hamlet.

11.1.28 Subject to municipal budget considerations, a monitoring station should be constructed within the Plan area to provide ongoing data regarding rainfall, stream flows, and water quality. The monitoring station should be funded, operated, and maintained via a partnership between Alberta Environment and Protected Areas and the County.

11.1.29 Developments shall comply with provincial and federal regulations that restrict development activities that are likely to impact fish and fish habitat.



Map 10: Environmental Features

11.2 Reserves

As defined by the Municipal Government Act, reserves are required to support a wide range of public purposes, such as parks, schools, recreation, and protection of environmentally significant areas. Reserves may take form of municipal reserve, school reserve, municipal and school reserve, environmental reserve, and conservation reserve. Reserves may be dedicated to the County as public land during the subdivision process, given as cash-in-lieu, or a combination of the two.

Objectives

1. Provide for the dedication of reserves to meet the documented educational, recreational, cultural, social, and other community service needs of the community.
2. Provide for the identification and protection of environmentally significant land or hazard land through the dedication of environmental reserve or environmental reserve easements

Policies

11.2.1 The dedication of all reserve land shall be in accordance with provisions of the Municipal Government Act.

11.2.2 Reserve requirements may be satisfied through:

- a. Municipal reserve, school reserve, or municipal and school reserve;
- b. money in place of reserve land; or
- c. a combination of land and money.

11.2.3 Environmental reserves and conservation reserves shall be dedicated through land only.

11.2.4 Provision and allocation of reserves shall be determined in the adopted local plan, where required, and implemented at subdivision stage by the Subdivision Authority.

11.2.5 The dedication of reserves should meet the present and future needs of the Plan area by considering the recommendations of this Plan and other County plans and standards relating to pathways, recreation, and school board.

11.2.6 Where the opportunity exists to provide connections to an existing or planned active transportation route, municipal reserve dedication in residential areas should be provided by a full dedication of land to facilitate the establishment of fully functional pathways and open space areas within a development.

11.2.7 The amount, type, location, and shape of reserve land shall be suitable for public use and readily accessible to the public.

11.2.8 Where a Tentative Plan of Subdivision proposes a recreation business use, the County shall not consider the proposed recreational use as satisfying the requirements for Reserve dedication and shall require reserves in accordance with the Municipal Government Act.

11.2.9 Environmental reserves should be determined by conducting:

- a. a biophysical impact analysis report;
- b. a geotechnical analysis; and/or
- c. other assessments acceptable to the County.

11.2.10 Dedication of municipal reserves may be considered to:

- a. protect prominent rural vistas and/or culturally significant points-of-interest;
- b. provide a visual buffer between existing and new developments; and/or
- c. provide appropriate separations between potentially conflicting land uses (e.g. separation of proposed non-agricultural uses in proximity to the Bragg Creek Provincial Park and/or the provincial lease lands north of the Plan area).

11.2.11 Developments on slopes steeper than 15% shall be discouraged. Areas of unstable slopes should be dedicated as environmental reserve (or environmental reserve easement).

11.2.12 To preserve the land's natural ability to provide for groundwater recharge, stormwater management, and to reduce negative impacts of erosion and siltation within downstream areas, significant removal of vegetation within upland areas should be discouraged.

11.2.13 In conformity with the provisions of the Municipal Government Act (MGA), public open space (environmental and/or municipal reserves) should be dedicated to preserve and/or integrate environmentally significant areas.

11.2.14 For purposes of this Plan, environmentally sensitive lands within private open landscapes include riparian areas and upland areas with steep or unstable slopes, as well as any other lands that qualify as environmental reserve under the MGA. These lands should be protected and/or enhanced through implementation of various mechanisms, which are at the discretion of the County, that create areas of open space and restrict development from these lands (e.g. conservation easements and land trusts).

11.2.15 Unless identified for active recreational amenities, public open spaces should remain in their natural "undisturbed" state. Strategies should be implemented to appropriately maintain public open spaces should they become a nuisance (e.g. risk of fire, weeds, etc.).

11.2.16 Development occurring in proximity to the provincial lease lands located north of the Plan area should respect and buffer the natural integrity of these lands.

Community Recreational Amenities

11.2.17 Municipal reserves should be dedicated as land rather than cash-in-lieu of land when subdivision occurs on lands that have not already experienced non-agricultural developments.

11.2.18 Outside of the hamlet, when subdivision occurs on lands that have already experienced nonagricultural developments, municipal reserves should be dedicated as land rather than payment of cash-in-lieu of the land.

11.2.19 When considering dedication of municipal reserves, the location and function should be carefully considered to maximize opportunities for improving or enhancing the communal recreation benefit provided by existing open spaces and public facilities.

11.2.20 Public open spaces (municipal reserves) intended to provide for organized recreational activities should be located within close proximity to existing public facilities.

11.2.21 In order to maximize their recreational utility and value, the ongoing use and maintenance of municipal reserve lands should be addressed through a variety of cooperative initiatives, between the County, the local recreation board and local community associations.

11.2.22 The long-term capital needs of existing recreational facilities should be evaluated when considering cash-in-lieu funding requests within the Plan area.

11.2.23 The Rocky View School Division's educational interests are anticipated to expand onto the adjacent 40 acres located directly south of the existing Banded Peak Elementary School site. In consultation with the Joint Use Coordinating Committee (JUCC), consideration should be given to the development of a joint use municipal reserve/school reserve at this location to enhance and broaden recreational opportunities within the community.

11.2.24 An integrated public open space system should include access for local residents to provincial recreation areas located adjacent to the Plan area."

11.3 Trails and Open Spaces

Bragg Creek's recreation amenities and open space network are a defining feature of the community's identity and lifestyle. Surrounded by foothills, forests, and the Elbow River, the area offers a unique interface between settlement and natural landscapes. This setting supports a wide range of outdoor activities, enhances local quality of life, and attracts regional visitors seeking accessible nature-based experiences.

The natural environment provides rich recreational amenities and plays an integral role in community life for residents. In particular, the trail network provides for year-round activities, such as hiking, mountain biking, snowshoeing, forming a key recreational asset in Bragg Creek. Maintaining the connectivity between trails and open spaces is imperative towards recreational amenity. In the context of public recreation, environmental reserves are intended to preserve the natural features of the land while providing appropriate public access. The intent is to provide limited recreation opportunities while ensuring ecological conservation.

As Bragg Creek continues to evolve, a thoughtful approach to recreation and open space planning is essential. Future development should integrate natural features, maintain public access to open spaces, support trail connectivity, and preserve the community's strong relationship with the surrounding landscape. Policies in this section aim to promote a high-quality network of trails, parks, and open spaces that provide key linkages throughout the community and to its surrounds.

Objectives

1. Provide public and private space for recreation uses on appropriate sites that are compatible to the natural features.
2. Prioritize pedestrian connectivity within the hamlet by connecting existing sidewalks and trails.
3. Identify future linkages for the trail network that support active transport and recreation.
4. Minimize the physical and visual impacts of recreational opportunities to the natural areas and views.
5. Emphasize recreational and cultural opportunities by providing access for a variety of pedestrian and non-motorized activities
6. Provide access to areas that offer interpretive and natural experiences (e.g. environmental reserves)

Policies

General

11.3.1 The Greater Bragg Creek Trails System should encompass a hierarchy of four pathway connections shown conceptually on Map 11: Conceptual Trails Network and described in Table 3: Trail Hierarchy.

11.3.2 Trail alignments and future linkages shown on Map 11: Conceptual Trails Network and Map 12: Hamlet Pedestrian Network are conceptual and are intended to identify desired connections within the broader trail network.

11.3.3 Final trail alignments shall be determined through future planning, subdivision, or development processes, having regard to land availability, environmental conditions, landowner interests, and other applicable approvals.

11.3.4 All upgrades and improvements to trails and pathways within the hamlet shall refer to requirements outlined in Section 6: Public Amenities and Infrastructure in Appendix B Design Control Plan.

11.3.5 Looped pathway connections should be encouraged.

11.3.6 Implementation of pedestrian crosswalks should be considered at key intersections throughout the Plan area.

11.3.7 The trails system should be developed using a common design theme (e.g. bear-proof garbage cans, uniform benching, directional, interpretive and informational signage, acknowledgment plaques, etc.).

Future Works

11.3.8 Future works to build and/or improve existing trails and pathways within the Hamlet shall align with the conceptual network shown in Map 12: Hamlet Pedestrian Network. Future works shall also refer to design requirements outlined in Section 6 of Appendix B Design Control Plan.

11.3.9 Where fencing is required as part of future trail works, fencing shall refer to requirements under Section 2.3: Fencing and Walls of Appendix B to facilitate wildlife movement.

11.3.10 Future comprehensive development within the Hamlet Woods shall require a secondary vehicular road connection to Highway 22. This shall comply with the County's Servicing Standards.

11.3.11 The environmental integrity of the Elbow River, the Bragg Creek, other natural water features and other environmentally sensitive areas should be respected. Trail construction should result in "no net loss" within environmentally sensitive areas.

Phasing and Implementation

11.3.12 Construction of the trails system should generally be guided by a phased implementation strategy that begins with the Regional Trails first, the Community Pathways second and the Nature/ Interpretive Walks third. Refer to Map 12: Hamlet Pedestrian Network and Table 3 and Table 4 for further details.

11.3.13 Development of the trails system should generally begin in the Hamlet, extending outward into the adjacent areas.

11.3.14 Opportunities to develop "out of sequence" should be considered, provided that any "new" trail eventually connects with an "existing" trail and with the conceptual trail network.

11.3.15 Alternatively, opportunities for an appropriate pathway alignment to be acquired, as an MR dedication, should be considered, even if out of sequence.

Trail Alignment

11.3.16 The trail system should link:

- a. the entire community together (i.e. residential, commercial and agricultural areas). Wherever possible, residential subdivisions accessed by municipally owned internal subdivision roads should be linked directly together;
- b. the hamlet with lands west of the Elbow River via a pedestrian bridge crossing;
- c. the hamlet with Banded Peak Elementary School;
- d. local pathways with those in other communities (e.g. Redwood Meadows, Springbank, Calgary, Canmore), providing for connections between the jurisdictions that are safe and beneficial to all affected jurisdictions;
- e. the community to local historical sites (e.g. local history boards, the Roundhouse, old schools, the Trading Post, the Hostel Trail Loop, historic Pioneer lands, the TsuuT'ina First Nation, etc.) and existing and future local community and recreational amenities (e.g. community centers, churches, museums, art galleries, etc.);

- f. to other adjacent recreational amenities (e.g. Bragg Creek Provincial Park, Kananaskis Country, TransCanada Trail, etc.); and
- g. Trail alignment shall not disturb the existing orchid beds.

11.3.17 All sources of land access and rights-of-way should be considered when determining trail alignments. At Council's discretion, the trail system should utilize Reserve lands, municipally owned land and road allowances for trail development.

11.3.18 Retaining options that may provide for pathway alignments should be a priority for the County. Existing and future Municipal Reserve lands and statutory road allowances should be retained and considered for present and future trail alignments.

11.3.19 Proposed trails alignments within provincial road rights-of-way are discouraged.

11.3.20 Wherever possible, trail alignments should parallel the municipal road network.

11.3.21 Trail alignments may be considered within municipal road rights-of-way provided they do not compromise the safety and operational efficiencies of the road network.

Partnerships

11.3.22 Opportunities for partnerships between various levels of government, industry and local Community groups should be encouraged to promote the construction of local trails.

11.3.23 Implementation should be locally driven and utilize cooperative partnerships between the local Recreation Board; various Community groups; developers; and municipal, provincial and federal governments.

11.3.24 The County, the Bragg Creek Trails Association, in consultation with the Recreation Governance Committee, should coordinate efforts regarding planning, funding, implementation and maintenance of the trails system.

11.3.25 The Greater Bragg Creek residents/landowners should help support the trails system through locally based funding mechanisms (e.g. Community Recreation Levy, local fundraising, charitable donations, etc.)

11.3.26 Community groups may construct portions of the trails system in coordination with the County, the Recreation Governance Committee, the Bragg Creek Trails, and others.

11.3.27 The County should collaborate with community groups to erect educational signage at trailheads to promote trail etiquette and tourist education.

Developers

11.3.28 Whenever required under the provisions of the MGA, new subdivisions within the Greater Bragg Creek area should contribute to development of the trails system through the dedication of land as Municipal Reserves.

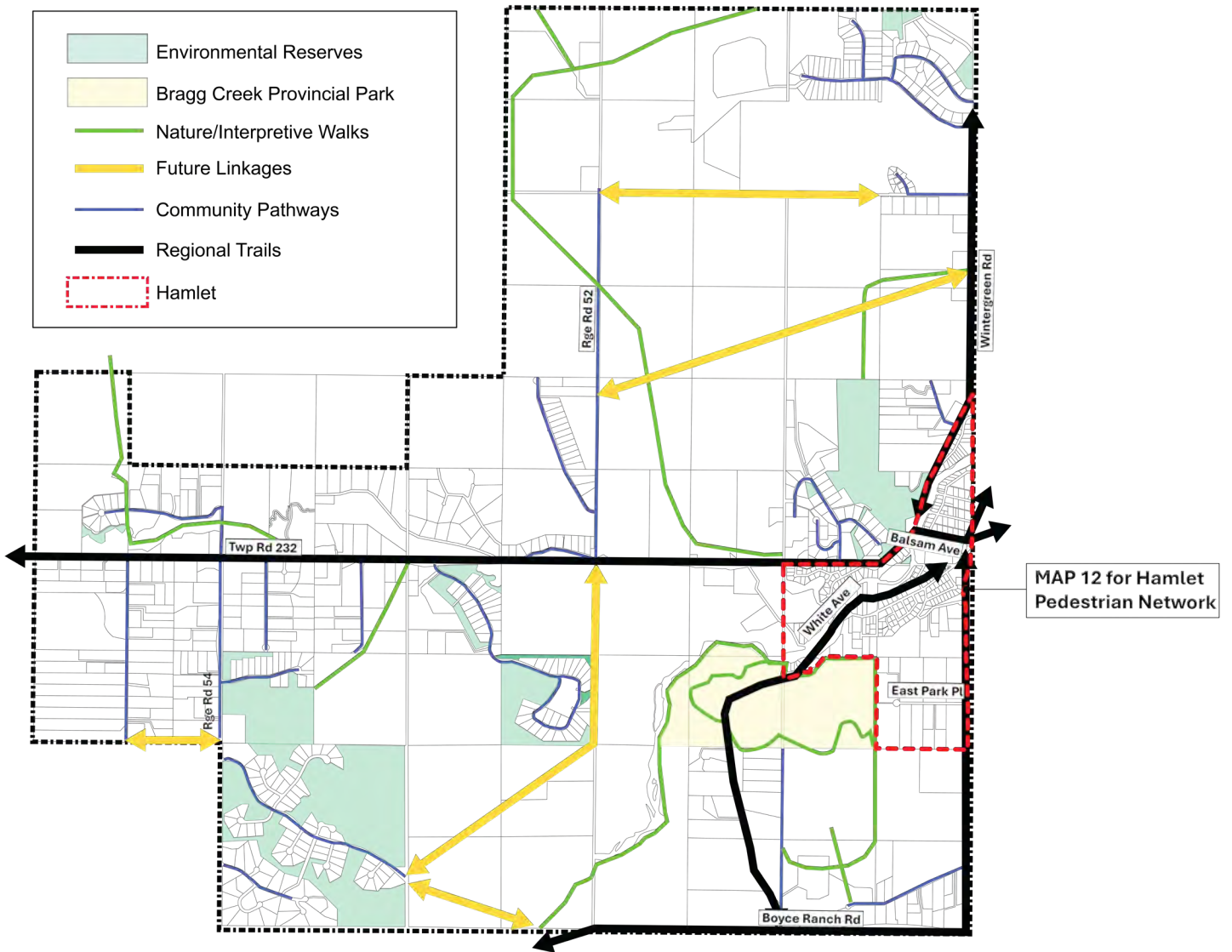
11.3.29 Individual developers are expected to construct portions of the trails system within their project, as a requirement of the subdivision and development processes. Developers should be required to provide financial securities to ensure pathway construction complies with municipal standards.

11.3.30 Individual developers should be encouraged to consider development of Regional Trails that may be external to their individual projects.

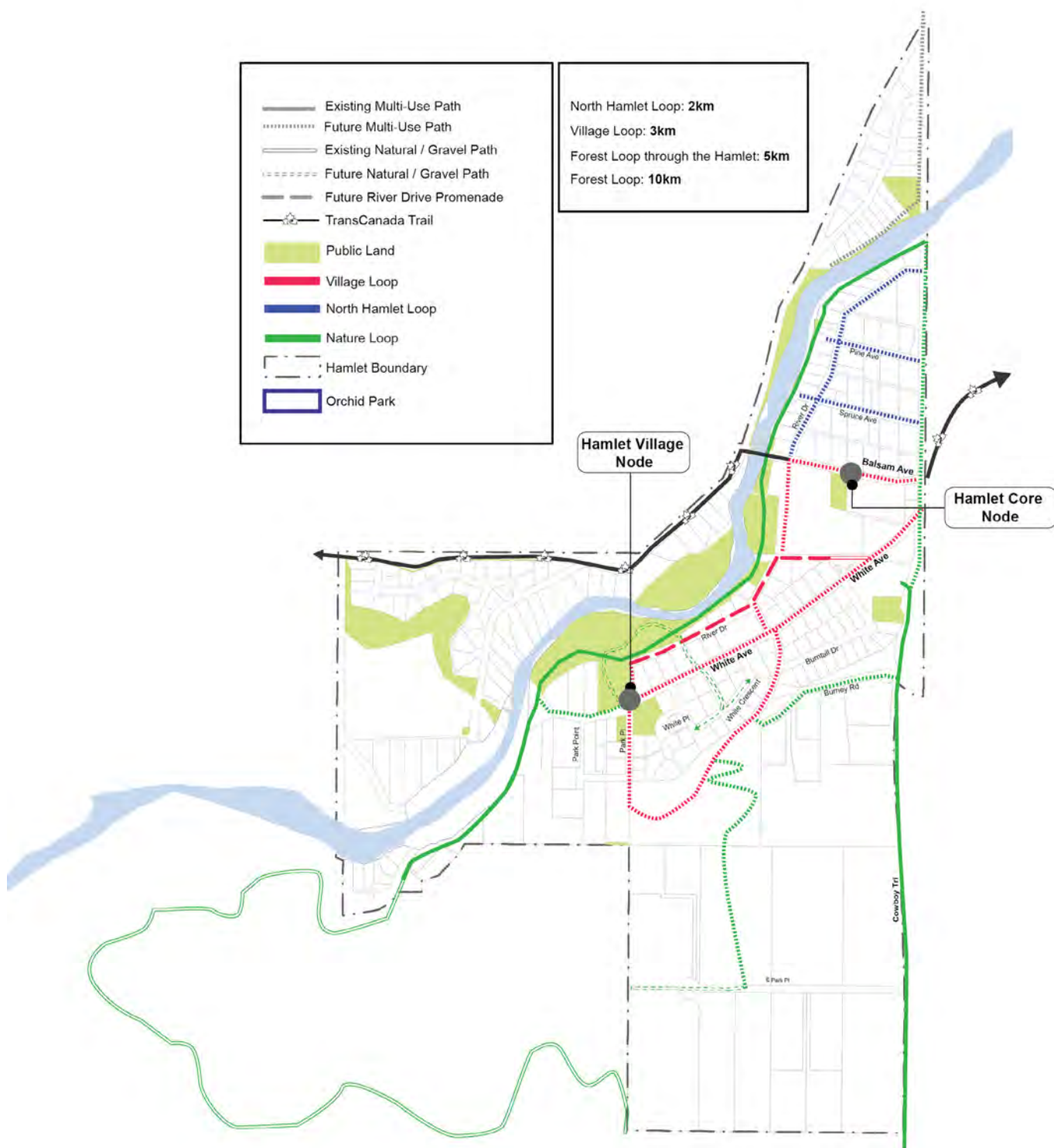
Trail Hierarchy

Regional Trails
<ul style="list-style-type: none"> Follow primary transportation corridors and provide for pedestrian and non-motorized commuter connections between the hamlet and the surrounding areas; Connect local community, social, and recreational amenities as well as providing linkages between the Greater Bragg Creek area and adjacent recreational areas; Are typically designed as multi-use connections and normally contain a hard-surfaced pathway for walkers, in-line skaters, and cyclists; Wherever possible, contain a separated soft-surfaced pathway for equestrian users, joggers, and cross-country skiers; Typically contain a hard surface 2.5 – 3.0 metres in width (usually asphalt) and a soft surface 1.0 - 2.0 metres in width (usually gravel or shale) with design gradients not normally exceeding 8%; and Are encouraged to be used by all types of users.
Community Pathways
<ul style="list-style-type: none"> Link existing (and future) subdivisions with the regional trails, and wherever possible, link residential subdivisions directly together; Typically contain a hard or soft surface a minimum of 1.2 – 1.5 metres in width and generally have design gradients under 10%; May use low-volume and low-speed internal subdivision roads; and Do not generally encourage use by equestrian users.
Natural/Interpretive Walks
<ul style="list-style-type: none"> Provide access to local historic and/or culturally significant points of interest; Provide opportunities for passive recreation along routes of scenic, natural, historic, geologic, or water-oriented interest; Are not intended for commuting; Typically contain a soft surface 0.5 – 0.6 metre in width and use local materials for surfacing that best fit the immediate surroundings. The design gradients normally match existing ground contours to minimize disturbance to the natural environment; and Do not generally encourage use by those users having potential to negatively impact lands with identified environmentally sensitive areas.
Future Trail Linkages
<ul style="list-style-type: none"> Conceptually illustrate linkages that have been identified for implementation at a later date; Will have their pathway hierarchy established at such time the linkages are actually developed; and Are subject to County budgetary considerations.

Table 3: Trail Hierarchy



Map 11: Conceptual Trails Network



Map 12: Hamlet Pedestrian Network

Types of Trails and Loops

Multi-Use Pathway

Multi-Use Pathways are a form of Community Pathway consisting of dedicated, off-street paved trails that accommodate shared, non-motorized activities such as walking and cycling, supporting both recreation and active transportation.

Natural/Gravel Pathway

Nature / Gravel pathways are a type of Natural / Interpretive Walks consisting of unpaved or lightly improved surfaces, designed for non-motorized use such as walking and hiking, and primarily intended for recreation.

Promenade

Promenade is a shared street designed to function as a pedestrian-focused connector linking the Hamlet Village to the Hamlet Core. This type of street, commonly referred to as a woonerf, supports multi-modal access while prioritizing pedestrians and enhancing connections to community and retail areas.

TransCanada Trail

The TransCanada Trail is the world's longest network of multi-use recreational trails, spanning over 29,000 km on land and waterways. It connects all 23 provinces and territories, linking the Atlantic, Pacific, and Arctic oceans. It features diverse, locally managed, year-round trails for hiking, cycling, paddling, horseback riding, and skiing.

Loops

Loops are interconnected pathways that form continuous circuits within the hamlet, linking key destinations, and natural features as shown in Map 12: Hamlet Pedestrian Network. They support walking, cycling, and hiking for recreation and active transportation while providing a cohesive pathway network.

- **North Hamlet Loop:** Primarily serves the residential areas in the northern part of the hamlet, bounded by Balsam Avenue and River Drive. This loop prioritizes everyday walking and cycling for local residents.
- **Village Loop:** Functions as the Hamlet's primary commercial loop, linking the Hamlet Node with the Hamlet Village. It features a mix of multi-use pathways and a riverfront promenade along River Drive, as shown on Map 12: Hamlet Pedestrian Network.
- **Nature Loop:** Emphasizes natural and recreational pathways, connecting the hamlet's river pathway to the provincial park. This loop showcases the hamlet's natural features and landscapes, with primarily natural or gravel surfaces designed for recreation and nature-based experiences.

Table 4: Types of Trails and Loops

11.4 Preservation of Local Historic Context

The historic context of Bragg Creek plays a vital role in the sense of “place” within the community. Policies encourage the preservation of local heritage buildings and landscapes wherever practicable. New developments, including subdivisions and new buildings, are to integrate visually with existing local heritage items and landscapes of significance, thereby maintaining the existing historic character.

Objectives

1. Ensure that development identifies and considers biophysical and heritage assets within the Plan area.
2. Minimize the disturbance caused by development to the topography, landscape features, wildlife habitat, and water resources of the Plan area through sensitive design that adapts to the natural environment.

Policies

11.4.1 Proposals for subdivision and/or development within the Plan area should be referred to the Historical Resources Office to determine the existence of significant archaeological sites and to establish appropriate preservation and/or mitigation measures if their disturbance is proposed.

11.4.2 Wherever possible, partnerships should be encouraged between local community groups, agricultural operators and developers to help maintain and enhance appreciation of the community’s historical settlement patterns.

11.4.3 The County should collaborate with the Greater Bragg Creek Historical Society to prepare an overlay of historical assets within the Plan area. The assessment should identify locations of such buildings and landscapes and provide rationale that supports why they should be considered historically significant. This overlay should be used as a reference for future development as well as for public information-sharing purposes.

11.4.4 New buildings within the hamlet should be consistent with the policies within Appendix B of this Plan as to maintain the historic character of Bragg Creek.

11.4.5 Wherever possible, buildings and cultural landscapes of local significance should be preserved and, if possible, integrated with new subdivision and/or developments to retain their historical context for the benefit of the Community. As appropriate, they should be preserved and maintained on either Municipal Reserve or privately owned lands. Where this is not possible, installation of appropriate interpretive signage should be required (e.g. cairns) as a condition of their redevelopment to document their historical context for the benefit of the Community.

11.4.6 In preparation of a Conceptual Scheme or Master Site Development Plan, applicants shall consult the Alberta Government’s Listing of Historic Resources to identify the potential for historic resources within the development area.

11.4.7 Provincial guidelines should be followed to determine whether any Historical Resources Application is required under the Historic Resources Act.

11.4.8 Any required avoidance or mitigation measures shall be incorporated within the development proposal and detailed within the Conceptual Scheme or Master Site Development Plan.

11.4.9 Conceptual Scheme or Master Site Development Plans should identify the impact of the proposal on any heritage or landscape features either within the Conceptual Scheme

or Master Site Development Plan Area, or upon adjacent lands.

11.4.10 Measures to preserve and enhance these features should also be detailed.

11.4.11 Applicants are encouraged to incorporate heritage and landscape features into the layout and design of development proposals. Approaches may include:

- a. Sensitive restoration or relocation of heritage buildings;
- b. Complementary architectural design of adjacent new buildings;
- c. Preservation of views or buffering around the feature;
- d. Preservation of road alignments and boundary treatments; and
- e. Use of interpretive signage denoting features.

11.4.12 The adaptive re-use of culturally significant buildings should be encouraged to preserve and maintain the integrity and local significance of their exterior.

11.4.13 In cases where historical buildings qualify for preservation in accordance with the Historical Resource Act, partnerships between the Province, and, subject to County budget considerations, the County, should be developed to consider financing the preservation and maintenance of these buildings.

11.4.14 Local developers should incorporate names of the Community's original settlement families, historical events and/or culturally significant locations into new subdivisions.

11.5 Landscaping and Tree Retention

This section applies to all development within the hamlet, including single dwellings, accessory buildings, and complex developments such as commercial, institutional, mixed-use, and multi-residential.

Landscaping is to integrate into the broader forested landscape of Bragg Creek, provide adequate screening when needed, and complement on-site development. Trees and vegetation are to be planted, retained, managed, removed, and replaced in a manner that supports the forested character of Bragg Creek while addressing wildfire risk, ecological conditions, public safety, emergency access, and the long-term health of the landscape.

Objectives

1. Maintain and reinforce the forested character of Bragg Creek through the thoughtful retention, planting, and management of trees and native vegetation.
2. Protect healthy and mature trees where their retention is compatible with development, public safety, emergency access, infrastructure, and wildfire mitigation.

Tree Retention

The County encourages the retention of healthy existing trees and native vegetation where compatible with FireSmart principles, wildfire hazard mitigation, and the long-term health of the retained vegetation. The consideration of the tree protection zone (TPZ) is required to meet this objective. The TPZ is a buffer area around a tree consisting of its root zone and crown area. Within a TPZ, certain development activities shall be prohibited as to ensure the tree's ongoing health and survival. These activities include building construction, driveway construction, excavation, and soil compaction.

The TPZ of a tree can be calculated as below:

1. Measure the tree's diameter at breast height (DBH) in meters. This measurement should be taken 1.4m above the ground.
2. Multiply DBH by 12 to yield the TPZ radius.

For example, a tree with a DBH of 1m would have a TPZ radius of 12m.

Policies

11.5.1 Tree Protection Zone requirements shall not prevent the removal of hazardous trees, dead or down vegetation, coniferous ladder fuels, or other vegetation management required to meet FireSmart principles.

11.5.2 Development shall be sited to retain healthy existing tree cover and native vegetation as practicable, particularly, mature trees fronting onto public roads in the hamlet.

11.5.3 Where a site contains naturally existing trees, development that encroaches upon the existing trees shall protect those trees according to the following mitigation hierarchy:

- a. Development shall be located to minimize unnecessary tree removal while providing appropriate FireSmart separation from buildings, accessory structures, roads, utilities, and other development as shown in Figure 4 and Figure 5.

- b. Where tree removal is necessary, development shall prioritize the removal of hazardous, unhealthy, dead, dying, or highly flammable vegetation before the removal of healthy, fire-resistant vegetation as shown in Figure 4.

11.5.4 Replaced trees shall be native and hardy species as to fit the natural landscape character as shown in Figure 3.

11.5.5 Appropriate tree species include:

- a. White Spruce (*Picea glauca*)
- b. Balsam Poplar (*Populus balsamifera*)
- c. Trembling Aspen (*Populus tremuloides*)

11.5.6 Appropriate shrub species include:

- a. Silverberry (*Elaeagnus commutata*)
- b. Juniper (*Juniperus*)
- c. Bearberry (*Arctostaphylos uva-ursi*)
- d. Willows (*Salix*)

11.5.7 Where existing trees are maintained, a snow fence secured by posts should be erected at the edge of the tree canopy prior to construction to protect them.

11.5.8 Topsoil shall be retained on-site by stockpiling and redistributing, and shall be seeded after construction as part of site restoration.

11.5.9 New commercial development adjoining existing residential development shall have regard to visual and acoustic privacy. This may be achieved through permanent landscaping measures to provide a buffer.

Parking

11.5.10 Landscaping species for parking areas shall be suitable to the growing environment, hardy, drought- and salt-tolerant, and resistant to compacted soils and weather.

11.5.11 Landscaping for new commercial development should consist of a variety of species as to provide visual interest and integrate into the broader forested character of the hamlet.

11.5.12 Low-level landscaping should be provided around parking area perimeters to soften edges, create pleasant pedestrian conditions, and contribute towards stormwater management.

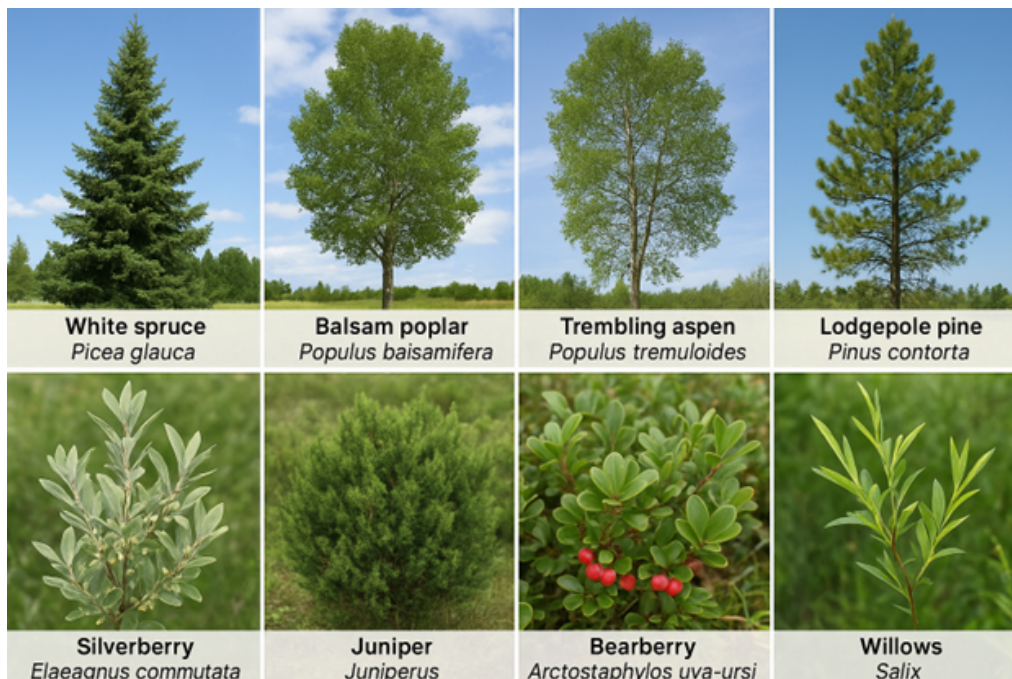


Figure 3: Appropriate Plant Species

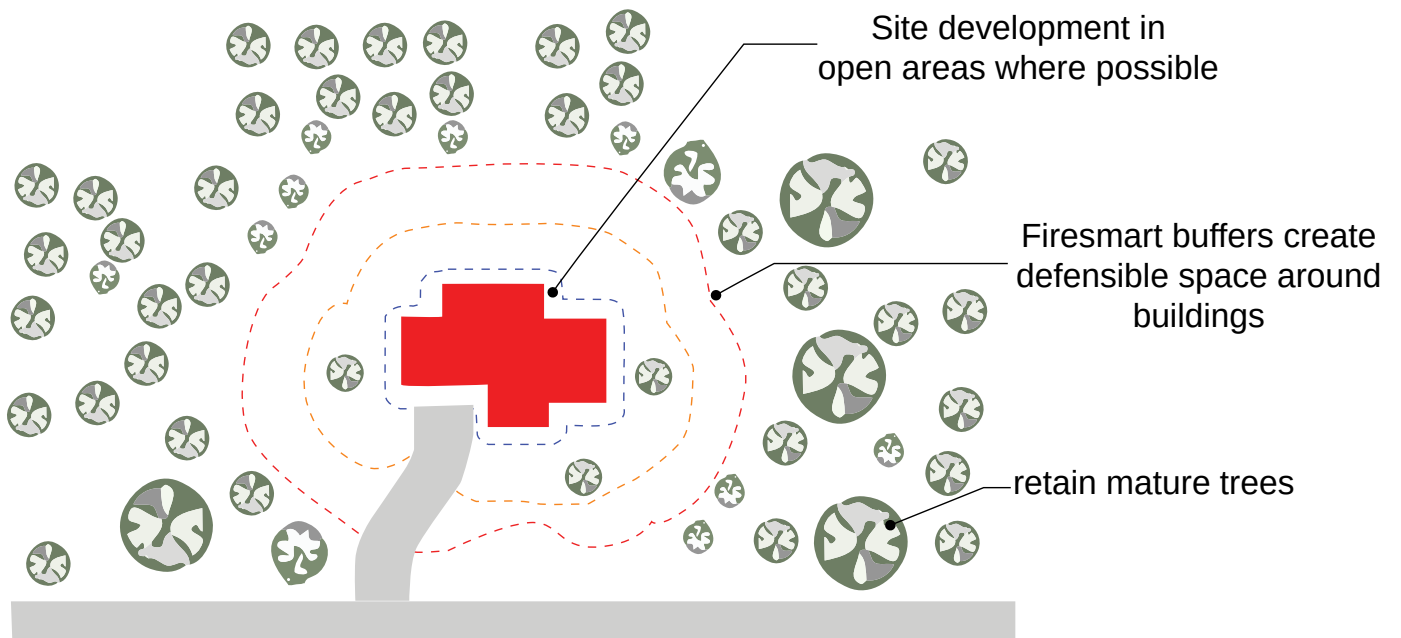


Figure 4: Tree Retention Diagram 1

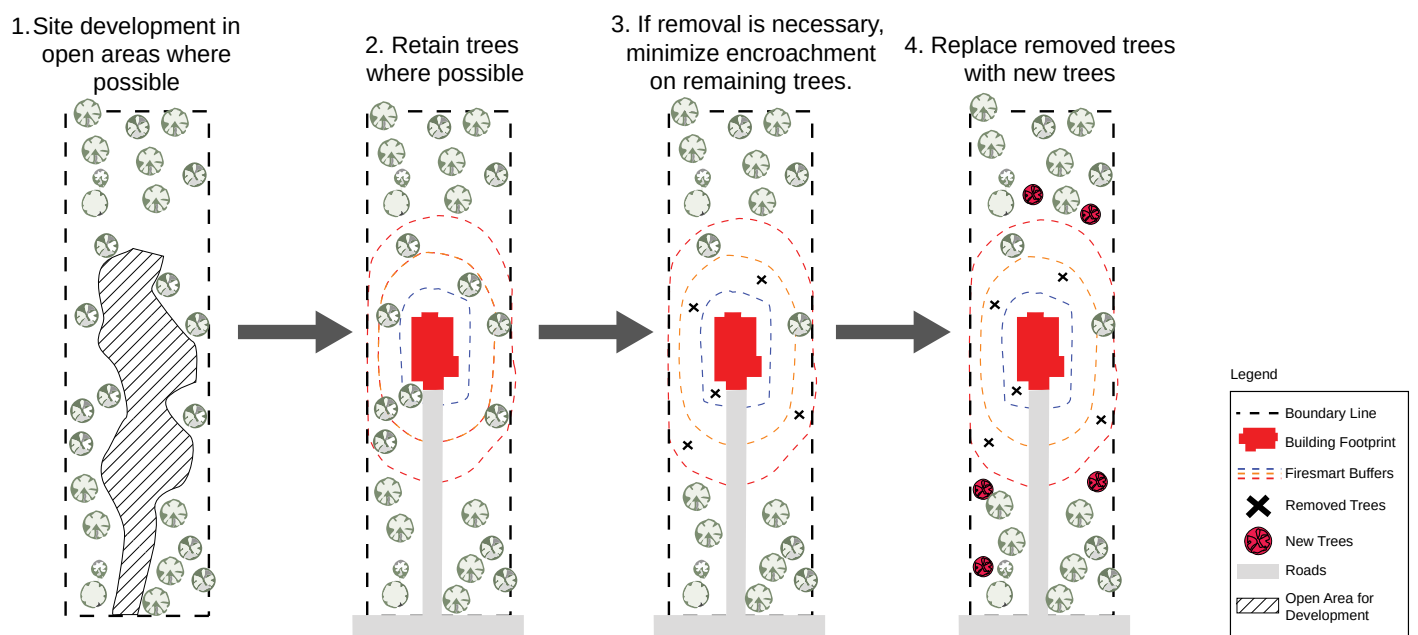


Figure 5: Tree Retention Diagram 2

12. PLAN POLICIES: TRANSPORTATION AND SERVICING

12.1 Mobility

The transportation network must develop in a manner that is safe, functional, and efficient. The network should minimize impacts on forest ecosystems, the Elbow River, major wetlands, and natural features, integrate development within the Bragg Creek area, and provide regional opportunities for walking, cycling, and public transportation. Map 13: Existing Transportation Network shows the Provincial, regional, and some local transportation networks in the Bragg Creek Hamlet area, and provides information on road classifications. The Balsam Avenue Bridge is the only access and egress for all development west of the Elbow River, which includes full-time residents, patrons of home-based businesses, and visitors to West Bragg Creek Recreation Area.

Objectives

1. Provide for an internal road network that contributes to a high-quality built environment, and efficiently and safely aligns to the regional road network.
2. Provide for an internal road network within the residential areas that facilitates connectivity with community focal points and, where appropriate, accommodates the inclusion of an active transportation network within the road right-of-way.
3. Support the implementation and protection of identified transportation routes through the Plan area.
4. Ensure ongoing dialogue with the Province on key transportation requirements.
5. Ensure ongoing dialogue with the City of Calgary, Tsuut'ina and the Province on transportation requirements.

Policies

General

12.1.1 Developments shall provide a transportation network that complies with the policies of this Plan and the County's servicing standards. The classification of the County road network may be refined through further transportation analysis and/or at the Conceptual Scheme or Master Site Development Plan stage.

12.1.2 A Traffic Impact Assessment shall be submitted as part of the Conceptual Scheme or Master Site Development Plan preparation and/or subdivision application process in accordance with the County Servicing Standards.

12.1.3 A Traffic Impact Assessment shall be submitted in support of future commercial development at the County's discretion as to evaluate impacts on vehicular and pedestrian circulation impacts.

12.1.4 Where identified in the County's Long-Range Transportation Network Plan or other functional planning documents, road dedication shall be provided at the time of subdivision.

12.1.5 For development occurring in the hamlet, the County may require proponents to enter into a development agreement in accordance with the County's Land Use Bylaw and the Municipal Government Act.

12.1.6 On-Street parking shall be discouraged within the Hamlet Core except where a parking lane is provided in the design of the street.

West Bragg Creek Secondary Egress

12.1.7 The County should continue to explore opportunities to provide a secondary access/egress to West Bragg Creek.

Regional Transportation System

12.1.8 The regional transportation system shall be developed in general accordance with Map 13 and *the Highways Development and Protection Act*.

12.1.9 White Avenue (Highway 758) is considered a secondary minor highway. No new direct access shall be approved on White Avenue unless otherwise determined to be necessary by the Province and the County.

12.1.10 The County may collaborate with Alberta Transportation to explore the option of the County taking over responsibility for White Avenue to make it a local County road.

12.1.11 Existing traffic conditions at the trio of intersections consisting of Highway 22, Balsam Avenue, and White Avenue are expected to reach capacity before 2045. The County should continue exploring a long-term plan for upgrading these intersections based on the recommendations of the Greater Bragg Creek Transportation Network Analysis prepared by Bunt & Associates, dated September 2025.

Local Transportation Network

12.1.12 The design and construction of roadways within the local transportation network shall use sound access management principles and shall be in accordance with the County Servicing Standards.

12.1.13 The designation and design of local roads within the transportation network, including classification, street sizing, and intersection/access spacing, shall be determined at the time of conceptual scheme preparation. Local roads shall be designed in accordance with the urban or rural cross section requirements established by the County's servicing standards.

12.1.14 Modified road standards that incorporate Low Impact Development (LID) techniques may be supported by the County for local plans that are comprehensive in nature, integrate cohesively into the surroundings, and provide a Stormwater Management Plan that incorporates LID techniques.

12.1.15 Roads that incorporate LID techniques shall adhere to standards stipulated in Appendix

B (the Bragg Creek ASP Design Control Plan) of this ASP.

12.1.16 Conceptual scheme applications shall be accompanied by Construction Management Plans demonstrating best management practices. These plans should aim to reduce the potential for sedimentation into watercourses.

12.1.17 Conceptual schemes for residential development should provide for emergency and secondary access, pathway, trail, or sidewalk linkages within, and external to, the conceptual scheme area in accordance with County Servicing Standards.

12.1.18 New subdivisions and developments shall adhere to the County's Servicing Standards, including requirements on access.

12.1.19 Developers shall bear all costs associated with the construction of local roads that provide direct access to new subdivisions and/or developments.

12.1.20 New developments should limit the number of new accesses onto collector roads to maintain safe traffic flow and vehicle turning movements.

12.1.21 Protection and maintenance of healthy riparian environments, viable ecosystems and natural habitats should be a priority when improvements are made to the municipal road network.

12.1.22 Ongoing improvements and/or maintenance to the existing municipal road network should be implemented through the County's road program and maintenance initiatives.

12.1.23 Maintenance activities within municipal rights-of-way should follow best management practices.

12.1.24 All existing municipal road rights-of-way should meet the minimum requirements of the road classification system.

12.1.25 Where required, the County should acquire additional rights-of-way for municipal roads through the subdivision process.

12.1.26 In some cases, the County should purchase additional rights-of-way from private landowners to facilitate improvements to the municipal road network.

12.1.27 Street lighting within municipal rights-of-way should be discouraged throughout the Greater Bragg Creek area (with the exception of the hamlet commercial core).

12.1.28 On-street parking shall be discouraged within the Plan area.

12.1.29 The County should coordinate the road program and maintenance initiatives so that improvements to collector roads can be implemented in concert with new subdivision and/or developments within the Plan area.

12.1.30 Construction activities within all municipal rights-of-way should follow best management practices.

12.1.31 New subdivision and/or developments should accommodate at least two points of access/egress except White Avenue (HWY 758).

12.1.32 New subdivisions with cul-de-sac local roads should accommodate an emergency access to an alternate local road via an all-weather surface that is maintained year-round.

12.1.33 New subdivision and/or developments should provide safe and efficient access to all building sites for emergency service apparatus and equipment.

12.1.34 Implementation of alternative local road design standards may be considered to access future subdivision and/or developments within the Plan area provided that vehicle movements (including emergency service vehicles and school buses) can be safely and efficiently accommodated and the municipal rights-of-way are able to sufficiently accommodate water,

wastewater, and/or stormwater infrastructure.

12.1.35 A master parking study shall be prepared, subject to municipal budget considerations, to identify the need for and appropriate locations of public parking within commercial areas, taking into consideration existing streetscapes, lot configurations and vegetation.

12.1.36 Additional public parking areas should be:

- b. located in close proximity to existing commercial areas; designed to incorporate pedestrian access;
- c. developed in an attractive aesthetic manner; and
- d. provided with appropriate lighting and landscaping to enhance their public safety

12.1.37 Provision of additional parking should accommodate both resident and non-resident users of commercial areas.

12.1.38 Mechanisms that ensure that parking actually is available for public, as opposed to customer use should be identified.

12.1.39 Parking behind the Bragg Creek Shopping Centre should be upgraded as a part of a community revitalization program to encourage patrons and/or staff to park there.

12.1.40 Preserving the safe and efficient operation of the provincial transportation system should be a priority when evaluating future subdivision and/or development within the Plan area.

12.1.41 Close working relationships between the Province, the County, local developers, industry representatives, and area residents should coordinate any required short and long-term improvements to the provincial transportation system.

Special Transportation Considerations - Hamlet Woods

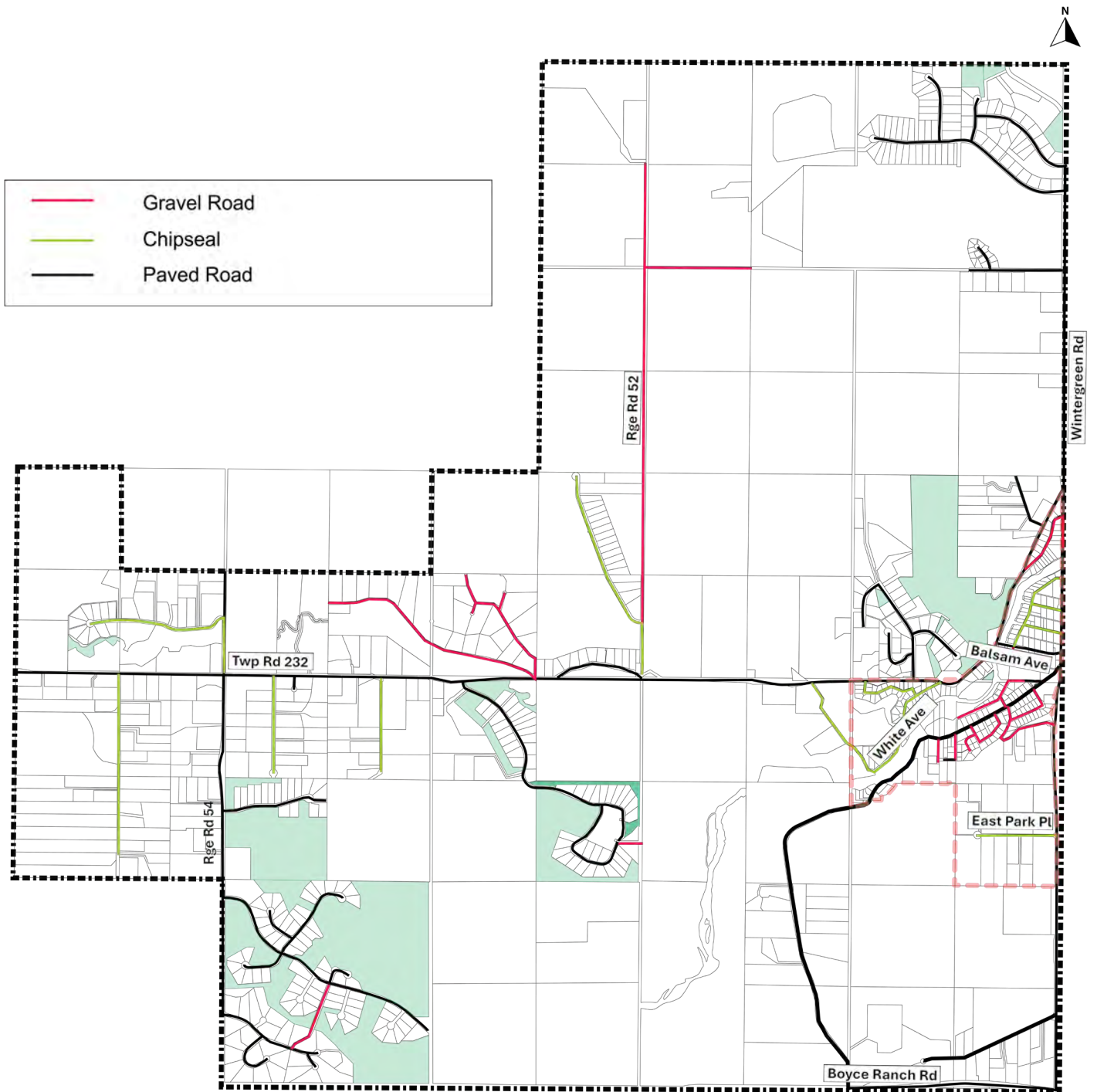
12.1.42 Local Plans for lands within the Hamlet Woods shall include a site plan indicating the location of a secondary access onto Highway 22. The location of this secondary access should be determined in consultation with Alberta Transportation and Economic Corridors.

12.1.43 Future development within the Hamlet Woods shall require a pedestrian pathway connecting to the Hamlet Village via Burney Road. The design of this pathway shall have regard to existing topographical constraints and minimize cut and fill.

Special Transportation Considerations - Hamlet Village

12.1.44 Any planned improvements to River Drive South should reflect the river promenade design principles as outlined within Appendix B of this Plan. Improvements should be implemented at a time deemed appropriate by the County to support business activity along the Hamlet Village Loop on Map 12: Hamlet Pedestrian Network.

12.1.45 The County should consider upgrades and improvements to existing pedestrian pathways within the Hamlet according to Map 12: Hamlet Pedestrian Network, prioritizing the completion of missing linkages.



Map 13: Existing Transportation Network

12.2 Water and Wastewater Utility Services

Well-designed and effective utility services are the foundation of a well-planned community and competitive business area. Potable water and wastewater servicing in the hamlet are currently available via piped systems. Potable water access outside of the hamlet is currently reliant on groundwater wells and private sewage disposal systems. In light of anticipated population growth in Bragg Creek, the long-term sustainability and health of the area and its residents necessitate a new approach to water and wastewater servicing. This will minimize impacts on local groundwater and allow for better management of overall water resources as densities increase. Map 14: Water Servicing and Map 15: Wastewater Servicing depict the most feasible utility system at the time of Plan writing.

Objectives

1. Support servicing options that minimize environmental impact.
2. Provide a land use pattern that is compatible with the servicing capabilities and objectives for Bragg Creek.
3. Ensure potable water and wastewater systems are provided to the Plan Area in a safe, cost effective, and fiscally sustainable manner, and that development connects to piped utility networks when available.
4. Support the provision of private shallow Utility systems within new development.
5. Identify and protect utility service routes and regional transmission corridors.
6. Ensure fire suppression and water supply infrastructure is available at development to deliver the appropriate level of fire protection within the Plan area.

Policies

General

12.2.1 Utility service development should support an orderly, logical, and sequential pattern of development.

12.2.2 The location of regional and local transmission corridors, utility rights-of-way and easements, and related line assignments, shall be identified and protected at the Conceptual Scheme or Master Site Development Plan stage to the mutual satisfaction of the County, the developer, and the utility companies.

12.2.3 For development occurring in the Hamlet, the County may require proponents to enter into a development agreement in accordance with the County's Land Use Bylaw and the Municipal Government Act.

12.2.4 Utility rights-of-way and easements shall be provided to accommodate shallow utilities at the subdivision or development permit stage as deemed necessary by the utility provider.

12.2.5 Connection to piped utilities for water and wastewater shall be used for potable water and wastewater service delivery, in accordance with provincial legislation and regulation.

Water

Water is a Provincially regulated resource. Waterworks systems are typically approved, permitted, and licensed by Alberta Environment and Protected Areas to withdraw, treat, and distribute water, whether from a groundwater source or a surface water source. Future connections to municipal servicing for parcels outside of the hamlet will be contingent on meeting the requirements of Provincial legislation as well as the County's Servicing Standard

12.2.6 All new residential development and commercial development within the Hamlet shall connect to the piped potable water system.

12.2.7 A water use assessment shall be required with local plan preparation, subdivision applications, and/or development permit applications to determine water demand and infrastructure requirements. The water use

assessment shall demonstrate that sufficient water treatment, storage, pumping, and fire flow capacity is available or funded to service the proposed development

12.2.8 Applications for business and commercial uses should provide a site specific Water Shortage Plan at the development permit stage, where required by the Development Authority. The plan should identify anticipated water demand and supply, essential and discretionary water uses, and measures that will be implemented to reduce water consumption during water shortage conditions, generally consistent with the County's Water Shortage Plan.

12.2.9 Any alternative routing should be supported by updated hydraulic modelling acceptable to the County.

12.2.10 Map 14: Water Servicing illustrates conceptual alignment of future water servicing infrastructure. New development may align with this map, or shall update the map if alternative routing is determined to be optimal.

12.2.11 Development and buildings relying on potable water provided by the water provider's utility system shall use low-flow fixtures and appliances. The use of water-saving devices is encouraged.

12.2.12 The County will continue to explore options for regional wastewater services, including options for inter-jurisdictional partnerships, where such an option may represent more efficient and effective service.

12.2.13 All business and institutional buildings shall provide fire suppression systems in accordance with the County's Fire Hydrant Water Suppression Bylaw, the applicable National Fire Code – Alberta Edition and National Building Code – Alberta Edition, as amended or replaced from time to time, and other applicable codes and legislation in force.

12.2.14 All water systems serving developments within the Plan area shall be designed to provide adequate water pressure to combat fires in accordance with the County's Fire Hydrant Water Suppression Bylaw and the County's Servicing Standards.

12.2.15 Where the County considers it appropriate, the extension and/or upgrading of infrastructure required to service a proposed subdivision shall be the responsibility of the applicant for subdivision approval and development permit approval. Costs associated with utility service improvements shall be the developer's responsibility.

12.2.16 Development approvals shall not be granted where the proposed development would exceed the available licensed water diversion capacity, treatment capacity, storage capacity, or pumping capacity, unless upgrades are secured through a Development Agreement.

12.2.17 Development approvals shall not be granted where cumulative approved or constructed development would exceed available wastewater treatment, conveyance, or pumping capacity, unless upgrades are secured to the satisfaction of the County.

12.2.18 Development shall be designed and constructed to minimize inflow and infiltration and may be required to demonstrate that the proposed development will not materially increase peak wet weather flows within the wastewater system.

Wastewater

12.2.19 All new residential development and commercial development within the Hamlet shall be required to connect to the County's piped wastewater system and shall demonstrate that sufficient wastewater treatment, conveyance, and pumping capacity exists or is secured to service the proposed development.

12.2.20 A wastewater servicing study shall be required with subdivision, land use rezoning and/or development permit applications to determine wastewater demand and infrastructure requirements.

12.2.21 Map 15: Wastewater Servicing illustrates the conceptual alignment of future wastewater servicing infrastructure. New development may align with this map, or shall update the map if alternative routing is determined to be optimal.

12.2.22 Any alternative routing should be supported by updated hydraulic modelling acceptable to the County

12.2.23 All wastewater utility systems shall meet the legislative and regulatory requirements of the Government of Alberta.

12.2.24 At the time of Conceptual Scheme or Master Site Development Plan submission for parcels in the Hamlet Woods, the proponent shall submit a servicing study demonstrating an extension of the gravity system along White Avenue and southwards along Park Place for sewage collection. The servicing study shall refer to the Bragg Creek Servicing Study prepared by ISL Engineering, dated September 2025.

12.2.25 Future piped systems shall be designed and operated to meet immediate needs and to anticipate future cumulative servicing requirements of the Bragg Creek Hamlet. The systems shall be designed to be expandable, and this shall be taken into consideration when determining the location of effluent disposal areas and protection of future rights-of-way. Costs associated with these upgrades shall be the developer's responsibility.

12.2.26 Future piped systems shall be the responsibility of the developer to construct, and their ownership and operation should be transferred to the County at the economic break-even point.

12.2.27 Methods of wastewater effluent discharge shall meet a quality that is acceptable to the Province and the County.

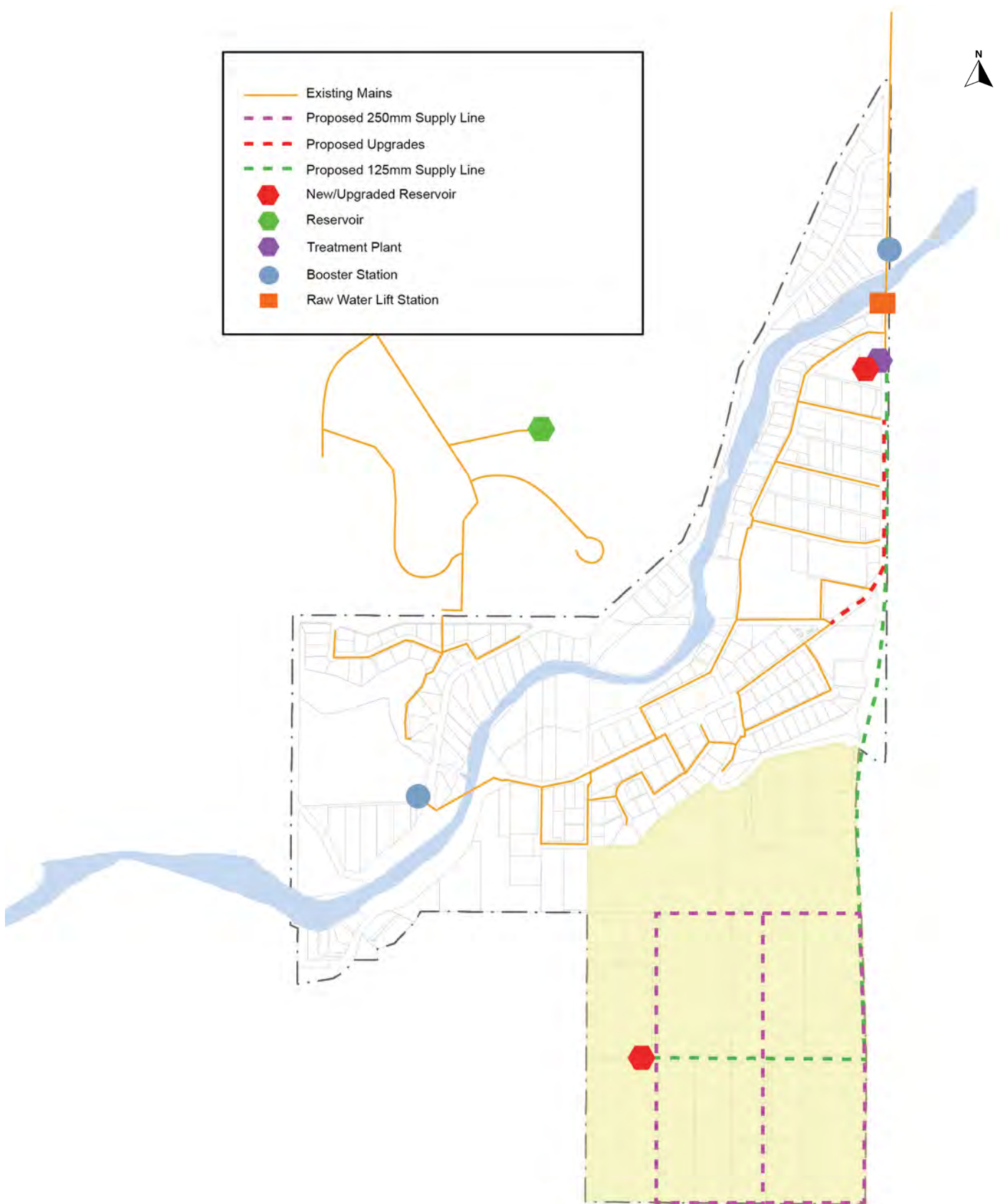
Shallow Utilities

12.2.28 Shallow utilities should be located in common locations to maximize the developability or functionality of lands and to reduce any off-site impacts.

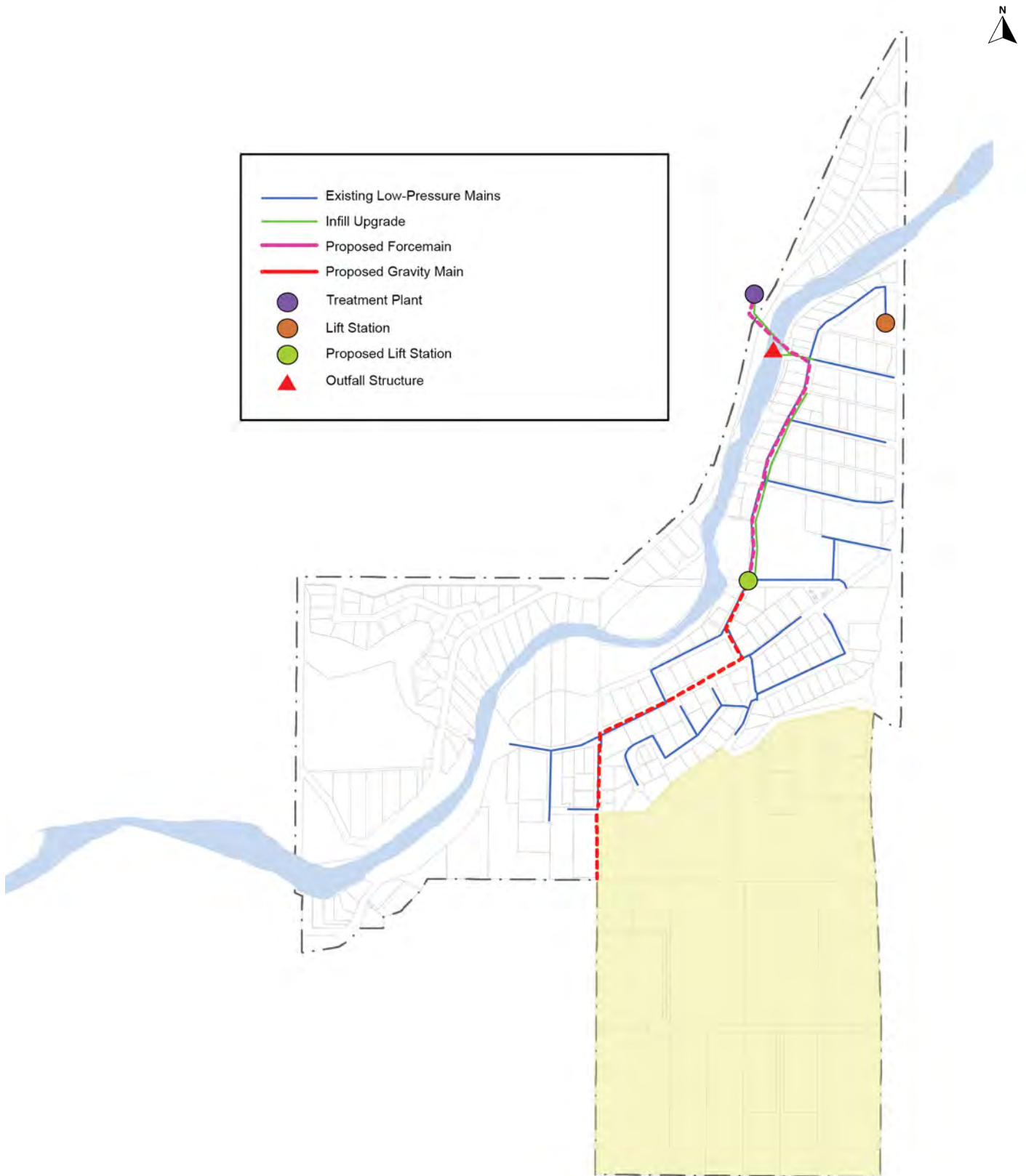
12.2.29 Utilities in the road rights-of way should be avoided unless sufficient right-of-way expansion is available for transportation needs.

12.2.30 Wherever possible, utility easements should be utilized in subdivisions and development to ensure the location, identification, and maintenance of multiple utilities can be made with ease and without service disruptions.

12.2.31 All new residential and non-residential development shall be serviced with shallow utilities at the expense of the developer.



Map 14: Water Servicing



Map 15: Wastewater Servicing

Utility Services Outside the Hamlet

Potable Water Outside the Hamlet

12.2.32 Unless an existing communal surface supply of water is available or until a regional water utility becomes available, groundwater should be the potable water source for all subdivision and/or development outside of the hamlet service area.

12.2.33 Multi-lot subdivisions proposing lot sizes of 4 acres or greater (on average) should provide potable water service via individual groundwater wells or communal water systems.

12.2.34 Multi-lot subdivisions that propose lot sizes less than 4 acres (on average) outside the hamlet service area should provide potable water via a communal water treatment and distribution system that is designed with potential to connect to a future regional water utility. When small-scale multi-lot subdivisions are being proposed, consideration should be given to the impact that this requirement may have on the financial feasibility of the development.

12.2.35 Developers who propose installation of communal water treatment and distribution systems should provide assurance that the infrastructure can be designed and constructed to maximize its utility and minimize its life cycle costs and should prepare an operational plan that clearly demonstrates the affordability of the utility for the proposed subdivision it is planned to serve.

12.2.36 A deferred servicing agreement should be registered against each newly created parcel that is serviced by a communal water system to identify the owner's responsibility to connect to a regional water utility, should one become reasonably available outside the hamlet service area. The decision to make a regional water utility available in un-serviced parts of the Plan area should be planned by the County in collaboration with current potential customers of the utility. Special consideration should be given to issues of public health and environmental protection, and affordability of a regional water utility.

12.2.37 Developers of new communal water systems should install meters and water saving plumbing fixtures, particularly toilets, showers, and faucets to encourage local water conservation.

12.2.38 Operators of existing communal water systems should continue to provide safe and cost-effective water service to their members. In some cases, partnerships should be considered between the County and the owners of communal water systems to facilitate capital improvements of outdated or inefficient water treatment and distribution infrastructure (e.g. local improvement bylaws).

Wastewater Outside the Hamlet Service Area

12.2.39 Multi-lot subdivisions that propose lot sizes 4 acres and greater (on average) should provide wastewater service via Private Sewage Treatment System (PSTS). The County should use the Model Process Reference document prepared by Alberta Municipal Affairs, including any future modifications to the document, to guide the installation of future PSTS within the Plan area.

12.2.40 Developers should be required to submit geotechnical assessments, prepared by a qualified professional, to demonstrate which minimum PSTS technologies are capable of safely and effectively treating wastewater over the long term, given the soil and groundwater conditions within the subdivision and/or development area.

12.2.41 When sustainable operation of minimum PSTS technologies is restricted by local soil and groundwater conditions, the developer should install appropriate enhanced PSTS systems that:

- a. have been approved by the Province;
- b. adequately address the identified limitations; and
- c. ensure a sustainable method of wastewater treatment over the life of the system.

12.2.42 The feasibility of implementing an ongoing program to monitor the long-term operational efficiencies for all PSTS systems servicing future development within the Plan area should be investigated. The monitoring program should include participation by landowners, Alberta Municipal Affairs, the applicable provincial health authority and the County, subject to municipal budget considerations, with its results being publicly reported. Where PSTS systems are not operating within provincial requirements, they should be upgraded at the owner's expense.

12.2.43 No new PSTS wastewater systems shall be permitted within the 1:100-year Elbow River flood fringe and/or any riparian buffer within the Plan area, with the exception of municipally approved flood-proofed sealed holding tanks on parcels existing at the time of adoption of this Plan.

12.2.44 In order to provide a higher level of environmental protection, a more consistent and higher quality of wastewater treatment and reduced risks against contamination of raw water supplies, multi-lot subdivisions that propose lot sizes less than 4 acres (on average) should provide wastewater service via municipally approved wastewater treatment systems that encourage accountability for installation, operation and maintenance of wastewater technologies, or they should transport collected, untreated wastewater to a point where it can be safely disposed of. When small-scale multi-lot subdivisions are being proposed, consideration should be given to the impact that this requirement may have on the financial feasibility of the development.

12.2.45 Developers who propose installation of communal wastewater collection and treatment systems should provide assurance that the infrastructure can be designed and constructed to maximize its utility and minimize its life cycle costs and should prepare an operational plan that clearly demonstrates the affordability of the utility for the proposed subdivision it is planned to serve. h) Communal wastewater treatment systems should be designed to connect to a regional wastewater utility

12.3 Stormwater

The Plan area lies within the Elbow River watershed, with the hamlet included in the Elbow River South sub-basin. The Elbow River is an important water course that supports many functions, including irrigation for crops, terrestrial wildlife, native flora and aquatic ecosystems, recreational activities, as well as serving as one of the most significant raw water supplies for the ASP area. The protection of water resources is imperative for the sustainable growth and development of not only Bragg Creek, but all downstream municipalities.

The Bragg Creek Master Drainage Plan was created to guide future development within the Plan Area. Map 16: Overland Seepage Map shows the main drainage system in the Plan Area.

Objectives

1. To ensure development incorporates the policies and best practices contained within the Master Drainage Plan for effective stormwater management.
2. Ensure effective, sustainable, and responsible stormwater infrastructure in the Plan area.
3. Maximize the use of natural stormwater drainage conveyance systems.
4. Support innovative conservation methods and best management practices with respect to stormwater management, including stormwater reuse and recycling opportunities.
5. To maintain post-development rates of stormwater runoff that equal predevelopment rates on both a regional and site-specific basis.
6. Preserve high value wetlands within the Plan area.

Policies

Watershed Management

12.3.1 The County will prioritize the protection of groundwater and ensure development does not exceed carrying capacity by:

- a. supporting appropriate monitoring programs;
- b. mitigating the potential adverse impacts of development on groundwater recharge areas;
- c. adhering to provincial groundwater testing requirements, as part of the development approval process; and
- d. encouraging and facilitating the capping of abandoned water wells to protect against groundwater leakage and cross contamination.

12.3.2 Stormwater runoff to surface water will be in accordance with County Servicing Standards and the Bragg Creek Master Drainage Plan.

12.3.3 The County shall continue to work with adjacent municipalities to create strategies and planning tools for watershed management and shall continue to collaborate with partners and consider amendments to this Plan as work progresses, where appropriate.

12.3.4 The County shall continue to collaborate with adjacent municipalities to support the establishment of baseline conditions for infrastructure needs and environmental assets, which assist in the planning and assessment of future growth and development.

Master Drainage Plan

12.3.5 The location of the stormwater conveyance systems shall be protected as part of the development process including emergency overland flow corridors.

12.3.6 The County may require that a proponent for a conceptual scheme, redesignation, subdivision, or development application prepare and implement a master drainage plan or stormwater management plan prior to additional development occurring. The master drainage plan or stormwater management plan shall be in accordance with County Servicing Standards.

12.3.7 As part of the preparation of a local plan and any supporting Sub-Catchment or Master Drainage Plans, best management practices and alternative solutions for the improvement of stormwater quality and reduction of quantity shall be required. Solutions may include:

- a. design of stormwater facilities that incorporate source controls in order to reduce the amount of water moving downstream and the need for end of pipe treatment facilities;
- b. use of LID methods, such as bioswales, rain gardens, constructed wetlands, green roofs and permeable pavements;
- c. reduction of impervious surfaces;
- d. the re-use of stormwater; and
- e. consideration of stormwater ponds at the sub-regional level to support the reuse of stormwater.

12.3.8 The determination of correct best management practices shall require an assessment of:

- a. topography;
- b. soil types;
- c. elevation changes;
- d. drainage courses;
- e. ponds, low lying areas, and wetlands;
- f. environmentally sensitive areas; and
- g. existing stormwater accumulation areas.

12.3.9 Low impact development (LID) stormwater management methods shall be considered within all future subdivision and/or development and be consistent with Bragg Creek's Master Drainage Plan.

12.3.10 All developments shall conform to the recommendations outlined in the Bragg Creek Master Drainage Plan including demonstration that any proposed site-specific release rate will not adversely impact the major drainage system or downstream properties.

12.3.11 Low Impact Development (LID) measures shall be designed to account for seasonal conditions, including frozen ground and spring thaw periods, and shall not be solely relied upon where site-specific geotechnical or hydrogeological conditions limit infiltration performance.

Stormwater

12.3.12 The stormwater management system shall be designed to align with the Bragg Creek Master Drainage Plan, as identified in Map 16: Overland Seepage Map.

- a. As part of development approval, developments in the Hamlet Core shall require the construction and connection to a centralized stormwater management facility and lift station, which provides positive drainage to the Elbow River.

- b. The developer shall bear the cost of the construction of the stormwater management facility and lift station.
- c. A conventional gravity-based system shall be used for developments within the Hamlet Woods.

12.3.13 Stormwater management systems, including re-use or irrigation, should be designed at a scale that services the local plan area. The County discourages the use of stormwater ponds or volume control measures designed for individual lots.

12.3.14 The reuse of stormwater for the purposes of residential irrigation is encouraged in place of water suitable for domestic purposes and should be addressed in local plans.

12.3.15 Stormwater shall be conveyed in a manner that protects downstream properties and preserves the water quality of receiving water courses.

- d. local plans will include a Construction Management Plan outlining how a reduction in sedimentation disruption and deterioration of catchment areas will be achieved.

12.3.16 Stormwater conveyance systems shall be designed to accommodate upstream stormwater flows, to the satisfaction of the County.

12.3.17 New developments shall require a detailed Lot Grading Plan which demonstrates positive drainage, away from buildings and towards major drainage system. The Lot Grading Plan shall show that site drainage will not cause adverse impacts on adjacent properties.

12.3.18 Proposed stormwater ponds should be enhanced with bio-engineering techniques, wherever possible, to promote volume control and water quality within the Plan area.

12.3.19 Natural wetlands and/or natural drainage courses that are retained should receive treated

stormwater through direct or indirect flow in order to maintain the integrity of the wetland and the drainage course.

12.3.20 Stormwater ponds servicing ten (10) or more lots should be located on Public Utility Lots, subject to the County's Servicing Standards.

12.3.21 Stormwater management facilities may be used as fire ponds with dry hydrants, subject to the County's Servicing Standards.

12.3.22 Until such time as regional piped fire protection becomes available, new stormwater management facilities (SWMFs) shall be designed to be used as an interim water source for fire suppression.

12.3.23 New development within the Hamlet Core does not have a reliable gravity outfall during flood conditions. As a condition of development approval, such projects will be required to design and construct a self-contained, centralized SWMF and lift station to provide positive drainage to the Elbow River.

Reduce, Recycle and Reuse

12.3.24 The County shall support site-specific best management practices that reduce impervious surfaces, clean or filter runoff, and allow for reuse of stormwater for non-potable purposes.

12.3.25 The County shall support proposals for stormwater re-use through a purple pipe system in accordance with Provincial requirements.

12.4 Solid Waste and Recycling

The accumulation of solid waste through all stages of development, from construction and demolition to full build-out is inevitable. The following policies address the management of solid waste, emphasizing the reduction and diversion of waste through the recycling and reuse of materials. Each development stage has different solid waste requirements; the policies below provide guidance to developers and residents on managing solid waste effectively.

Objectives

1. Ensure local plans address solid waste management during all stages of development in accordance with the County's Solid Waste Servicing Strategy.
2. Provide for the necessary infrastructure to support solid waste and recycling management in public spaces.
3. Promote best practices for managing solid waste materials generated during construction activities.
4. Provide direction on the expected level of post-construction waste management service.

Policies

Development

12.4.1 Developers shall be responsible for the management and disposal of the solid waste generated through all stages of construction and development.

12.4.2 Local plans should outline how solid waste will be contained on site and identify proper disposal methods during all stages of construction and development.

Business

12.4.3 All development permit applications for business and commercial uses shall demonstrate provisions for wildlife-resistant waste receptacles.

12.4.4 Business owners shall be responsible for providing their own solid waste services and shall include waste minimization and waste diversion practices.

12.4.5 Business developments may be required to provide justification for the amount of space allotted for waste management based on the volumes and types of material generation anticipated, the type of diversion infrastructure planned for, and the overall systems proposed for managing waste.

12.4.6 All waste receptacles shall comply with requirements outlined in Section 7: Utilities and Services of Appendix B as to prevent unwanted wildlife interactions.

Residential

12.4.7 Solid waste containment and disposal is the responsibility of the property owner and/or lot owner association until such time as a County-sponsored waste management program is available in the area.

13. PLAN POLICIES: COMMUNITY SAFETY

13.1 Fire Emergency Services

Fire emergency services within the Plan area are focused on fire and protective service needs. Wildfire hazard represents a significant concern within the Bragg Creek community. Between 2006 to 2024, there have been three hundred and sixty-one wildfires within the Greater Bragg Creek area. Analysis of Alberta Forestry's historical wildfire data show that between 2006 and 2024, a vast majority of wildfires within Bragg Creek were caused by human activity, including unsafe campfires, abandoned fires, and such. Therefore, heightened community awareness and concerted mitigation efforts are crucial towards ensuring community safety. The closest fire station is the Redwood Meadows Fire Department located approximately 7 kilometers northeast of the hamlet.

Policies from this Plan build on recommendations made in the Bragg Creek Wildfire Mitigation Strategy 2025. It aims to implement relevant FireSmart Disciplines in the planning and design of future development in Bragg Creek. These disciplines include:

- Vegetation management
- Legislation and planning
- Development considerations
- Interagency cooperation
- Emergency planning

Objectives

1. Ensure an appropriate and efficient level of fire and protective services is made available for current and future residents in order to provide for a safe and livable community.
2. Ensure development is designed and constructed to optimize the delivery of fire and protective services.
3. Ensure all new development adheres to relevant FireSmart Disciplines, as listed previously.

Policies

General

13.1.1 Fire services in the Plan Area shall be provided from existing County emergency service facilities, and where appropriate, by contract from adjacent municipalities.

13.1.2 The County shall explore partnerships for the delivery of emergency services, where appropriate.

13.1.3 Proposed alterations and additions to existing buildings shall meet the requirements outlined in Table 5.

13.1.4 All development permits for lands within the Plan area shall be referred to the County's Fire Services department for review to ensure appropriate fire protection measures are incorporated.

New Development

13.1.5 New residential developments shall have regard to the Home Ignition Zone in terms of siting, as shown in Figures 6 and 7, as well as materials and construction standards. New residential development shall comply with requirements within Table 5: Home Ignition Zone Requirements.

13.1.6 All new commercial buildings shall provide fire suppression systems, which shall be in compliance with the County's Fire Suppression Bylaw, the applicable National Fire Code – Alberta Edition and National Building Code – Alberta Edition, as amended or replaced from time to time, and other applicable federal or provincial legislation in force.

13.1.7 Conceptual Scheme or Master Site Development Plans shall address fire and protection response measures as well as on-site firefighting requirements through consideration of factors such as efficient road design, safe and efficient access for emergency service vehicles, and fire control measures.



Figure 6: Home Ignition Zone

Zone	Requirements
Immediate (0 – 1.5m)	<ul style="list-style-type: none"> • All roofs shall be constructed of fire-resistant materials, in compliance with the applicable building code in force in Alberta. Metal, tile, Class A fire-rated asphalt, and non-combustible materials are the most fire-resistant, and remain effective under severe fire exposure • Building exteriors shall be constructed of either fire-resistant or non-combustible materials, with non-combustible materials highly preferred. Non-combustible materials include stucco, brick, cement, rock and concrete. • Combustible siding (such as untreated wood or vinyl siding) shall not be permitted for building exteriors. • No woody shrubs, mulch, or trees shall be permitted within the immediate zone.
Intermediate (1.5 – 10m)	<ul style="list-style-type: none"> • Any proposed vegetation shall be fire-resistant and planted in low density. • Coniferous trees are highly flammable and shall not be permitted within this zone. • Re-development of existing structures should consider replacement of existing conifer trees within 10 metres of the building. • Storage sheds and ancillary structures are discouraged in this zone, and should be located to the extended zone wherever possible. • Mulch shall not be permitted in this zone
Extended (10 – 30m)	<ul style="list-style-type: none"> • Storage sheds and ancillary structures should be located within this zone. • Vegetation within this zone should be actively managed to create a minimum of 3m between single or grouped tree crowns.

Table 5: Home Ignition Zone Requirements

Development Permit Requirements

13.1.8 FireSmart design standards should be demonstrated on a landscaping plan, prepared by a landscape architect or a person qualified to perform such work, as part of the development permit application.

13.1.9 Construction management plans submitted at the development permit stage shall provide details on the implementation of fire protection measures during construction periods, which is when fire hazards are highest.

13.1.10 All development shall complete a FireSmart assessment appropriate to the proposed development, where required by the County.

New Subdivisions

13.1.11 New subdivisions and/or developments shall accommodate at least two points of access/egress where required by County Standards and the applicable building and fire codes in force in Alberta.

13.1.12 Proposals for new multi-lot subdivision within the Plan area should be supported by a wildfire risk assessment, prepared by a qualified professional, that examines the following criteria:

- Existing vegetation and topography to determine the site's susceptibility to wildfire;
- Location of existing/proposed water bodies within the area capable of providing a supply of water for fire suppression purposes (see Section 12.3 for stormwater policies within the Plan area);
- An assessment of the proposed subdivision layout, density, and development phasing to encourage implementation of a comprehensive design that recognizes and mitigates susceptibility to wildfire risks (e.g. appropriate building spacing, reduced cul-de-sac lengths, appropriate clearing of building sites, deck enclosure restrictions, etc.);
- An assessment of proposed architectural controls within the subdivision designed to encourage fire suppression within each new building site (e.g. appropriate roofing and siding materials, landscaping, interior/exterior sprinklers, etc.)

13.1.13 The use of internal and external sprinkler systems within new subdivisions is encouraged.

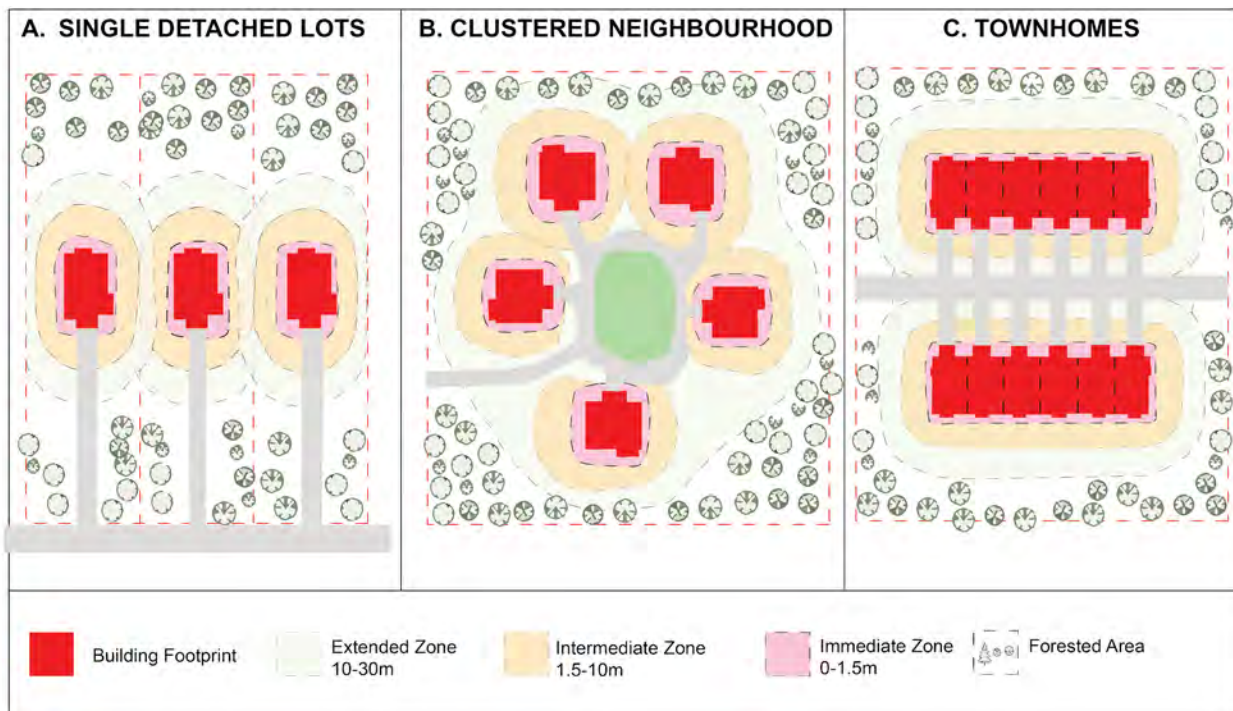


Figure 7: FireSmart Site Layout

13.2 Flood Risk Management

While the Elbow River provides the Bragg Creek community with scenic views and recreation opportunities, the waterways also present significant flooding risk to nearby lands. The policies of this Section are meant to minimize the risk development within the floodways and flood fringe, while also seeking to maximize the ecological capacity and recreational uses.

Objectives

1. Direct more vulnerable development away from areas at a higher risk of flooding.
2. Prevent inappropriate development within flood prone areas to safeguard property and limit safety risks.
3. Enforce flood-resilient design requirements for development located in flood-prone areas.
4. Support the preservation of floodway and flood fringe areas in their continued role of providing ecological and recreational services, together with wider flood and erosion control benefits.

Policies

General

13.2.1 The policies within this section apply to lands affected by flood hazards identified in the most current provincial flood hazard mapping adopted by the County, as well as groundwater seepage and overland flow areas identified on Map 16: Overland Seepage Map.

13.2.2 Local plans with lands affected by areas identified as Floodway, Flood Fringe, or High Hazard Flood Fringe in the most current provincial flood hazard mapping adopted by the County shall include a flood hazard risk study prepared by a qualified professional. The study shall:

- a. identify areas subject to the 1:100-year flood and other applicable regulatory flood extents, including groundwater-related flood risk identified in the Master Drainage Plan and Hydrogeological Study;
- b. demonstrate that sufficient developable area remains outside regulated flood hazard areas to accommodate the proposed development;
- c. provide recommendations for locating more vulnerable development (e.g., elderly care facilities, educational facilities, healthcare services) in areas of lowest flood risk and outside identified

groundwater seepage zones where feasible

13.2.3 No subdivision or development in the Plan area shall take place within the floodway of the Elbow River, with the following exceptions:

- a. essential roads and bridges that have to cross the flood risk area;
- b. flood or erosion protection measures or devices;
- c. pathways that are constructed level with the existing natural grades;
- d. recreation facilities (outdoor), provided there are no buildings, structures, or other obstructions to flow within the floodway; and
- e. essential utility infrastructure that has to be located in the flood risk area for operational reasons.

13.2.4 Any exempt development allowed within the floodway or flood fringe shall be designed to limit impermeable surfaces, so as to not impede flood storage capacity or natural groundwater recharge functions

13.2.5 Integration of flood-resilient design on-site, such as elevated earth mounds mixed with landscaping, may be considered.

13.2.6 New developments within the flood risk area shall adhere to the Minimum Building Elevations set out in the Bragg Creek Master Drainage Plan.

13.2.7 New developments shall be constructed, at minimum 0.5 meters above:

- a. the 1:100-year design flood elevation from the river inundation;
- b. the 1:100-year groundwater surcharge
- c. elevation as defined in the Hydrogeological Study, prepared by WSP in 2025.

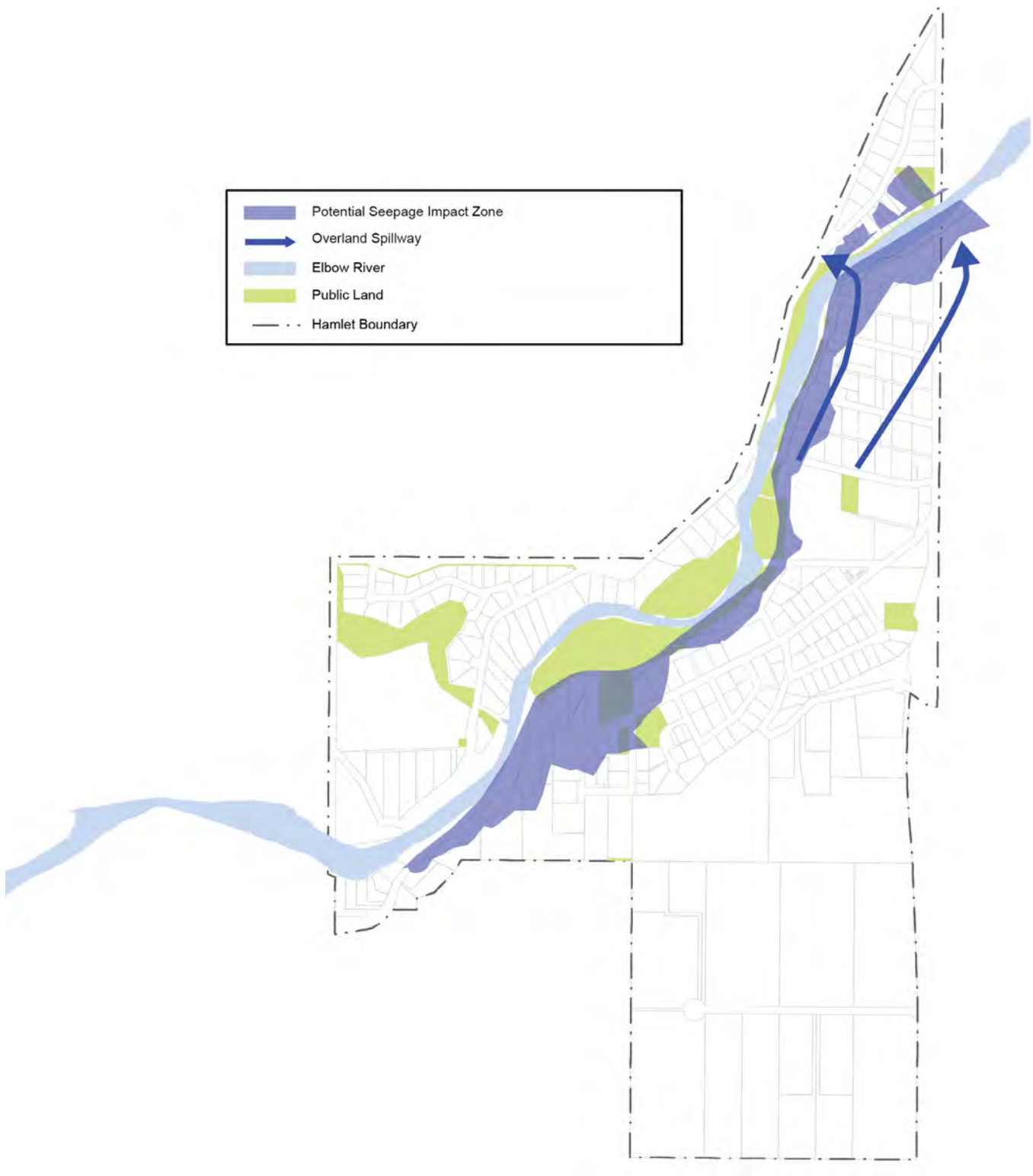
13.2.8 Development within areas identified as susceptible to groundwater seepage and daylighting in the Hydrogeological Study and Master Drainage Plan is restricted.

- a. Development applications shall provide a site-specific hydrogeological and geological assessment, conducted by a qualified professional, which demonstrates that the foundation can withstand flood effects and prevent seepage without reliance on permanent mechanical dewatering systems.
- b. On-site septic systems are not permitted within these areas.

13.2.9 New development within the emergency spillway corridor, as identified on Map 16: Overland Seepage Map, will require a detailed engineering analysis to demonstrate that the proposed development does not obstruct or negatively impact the overland flow of floodwaters; and at a minimum, to show the pre-development and post-development site grading that the development will not cause an increase in flood levels or a redirection of flow that would adversely affect upstream, downstream, or adjacent properties.

13.2.10 Development within the flood fringe should only be permitted when minimal negative impact to the Elbow River's drainage system can be demonstrated.

13.2.11 No new basements shall be permitted within areas indicated as Potential Seepage Impact Zone on Map 16.



Map 16: Overland Seepage Map

PART C: IMPLEMENTATION AND MONITORING

14. PLAN IMPLEMENTATION

The Bragg Creek ASP outlines the vision for growth in the community and how existing and future public and private space will be managed and supported by appropriate infrastructure. The purpose of this Section is to describe how this vision will be implemented; it provides detail on the sequencing of development, how compliance with the ASP policies and strategies will be ensured, and the follow-up actions required to support the Plan's success.

Objectives

1. Implement the Land Use Strategy and policies of the Bragg Creek Area Structure Plan.
2. Provide criteria for the logical phasing of development, and ensure that the related cost of infrastructure development is identified and provided for.
3. Implement key actions to facilitate development, and provide guidance on local plan requirements.
4. Ensure local plans adhere to the vision, goals, objectives, and policies of the Plan.
5. Provide for the review and amendment of the Plan as required.

Policies

Subdivision Applications

14.1 Applications for subdivision shall require the concurrent or prior adoption of a local plan, unless otherwise directed by the policies of this Plan.

14.2 Subdivision applications shall address and adhere to the requirements of the supporting local plan and the policies of this Plan.

14.3 When considering applications for subdivision approval, the County should evaluate tentative plans of subdivision in terms of the following considerations:

- a. the natural condition of the lands proposed for subdivision and the manner in which these conditions (i.e. topography, environmentally sensitive areas, etc.) have been integrated into the design of the tentative plan of subdivision;
- b. the serviceability of the proposed parcels by private and public utilities;
- c. the suitability of each of the proposed parcels to accommodate a building site of sufficient area to permit the development of a residential building and ancillary structures;

- d. the context of the lands proposed for subdivision and the compatibility of the proposed design with adjacent lands including, but not limited to, site conditions, parcel sizes, visual impact, etc.;
- e. the intensification potential of the Tentative Plan of Subdivision and the flexibility of the proposed design to accommodate future subdivision;
- f. the conformity with any local plan prepared and/or adopted pursuant to the provisions of this Plan;
- g. the design of the proposed road system having regard for Municipal Engineering Standards and integration with the Municipal and Provincial road hierarchy;
- h. conformity to this Plan; and
- i. any other matter referenced within this Plan or deemed appropriate by the County.

14.4 Subdivision design and servicing shall comply with the County's Servicing Standards.

Rezoning Applications

14.5 Applications for rezoning shall require the concurrent or prior adoption of a local plan, unless otherwise directed by the policies of this Plan.

14.6 A Conceptual Scheme shall be prepared in accordance with the policies of this Plan and, to be deemed complete, shall include the applicable information set out within Appendix C of this Plan.

14.7 Rezoning applications shall address and adhere to the requirements of the supporting local plan and the policies of this Plan.

Development Permit Application

14.8 Development permit applications shall adhere to the policies within this Plan.

Local Plan Requirements

14.9 Conceptual Schemes or Master Site Development Plans are considered by the County to be an important component of long-range planning for the development of lands within the Plan Area. These plans are generally focused at the quarter section scale, strategic in character and intended to:

- a. Establish the appropriateness of land uses proposed for the quarter section;
- b. Identify development issues (i.e. stormwater management, sewage disposal, aesthetics, densities), assess their impact on surrounding land uses and establish appropriate and comprehensive mitigation measures;
- c. Facilitate the phasing of subdivision and development through the establishment of a comprehensive phasing plan;

- d. Facilitate efficient and comprehensive development by encouraging innovative subdivision design that maximizes lot yields, servicing efficiencies and on-site development opportunities; and

- e. Facilitate community input.

14.10 Conceptual Scheme or Master Site Development Plans adopted under this Plan shall contain:

- a. description of all lands contained within the Conceptual Scheme or Master Site Development Plan Area;
- b. The proposed uses of lands within the Conceptual Scheme or Master Site Development Plan Area;
- c. Proposed parcel size and density for the Conceptual Scheme or Master Site Development Plan Area;
- d. The proposed internal road hierarchy;
- e. A servicing proposal including, but not limited to, public and private utilities for the Conceptual Scheme or Master Site Development Plan Area;
- f. Any special policies that may be required to give guidance to the preparation of Tentative Plans of Subdivision including, but not limited to, geotechnical, hydrological, hazard and/or environmental conditions within the Conceptual Scheme or Master Site Development Plan Area;
- g. Any other matters deemed appropriate by the County.
- h. An evaluation of any on-site hazard(s);
- i. An evaluation of on-site geotechnical features;

- j. An evaluation of on-site environmental conditions;
- k. An Environmental Audit of lands within the Conceptual Scheme or Master Site Development Plan Area;
- l. An evaluation of any on-site hydrological conditions;
- m. An evaluation of proposed servicing;
- n. A Traffic Impact Assessment; and
- o. Any other matter deemed necessary by the County.

14.11 Conceptual schemes shall extend across the entire area of the proposed development, and where appropriate, all other adjacent lands with development potential. At a minimum, adjacent lands should be considered to be those directly adjoining parcels and those within the wider quarter section that have the potential to further subdivide. Council shall have the discretion to consider alternative local plan boundaries, with consideration to ensuring:

- a. the alternate local plan area is comprehensive in nature;
- b. the implications of the development proceeding within an alternate local plan boundary have been examined; and
- c. it has been demonstrated that any on-site or off-site planning issues have been resolved pursuant to the provisions of this Plan.

14.12 Where a local plan is not required, or is silent on a subject, the relevant policies of this Plan and the Municipal Development Plan shall apply to rezoning and subdivision applications.

14.13 Applications for local plans, rezoning, subdivision, and development shall comply with the policies and requirements of the following master plans and servicing standards, as amended

or replaced, unless otherwise directed by the policies of this Plan:

- a. Bragg Creek Master Drainage Plan;
- b. Active Transportation Plan: South County;
- c. Recreation and Parks Master Plan;
- d. Rocky View County Solid Waste Servicing Strategy;
- e. Rocky View County Servicing Standards; and
- f. Fire Services Master Plan.

14.14 All local plans adopted by Council shall be appended, by bylaw, to this Area Structure Plan, with Appendix D and Map 4: Greater Bragg Creek Development Policy Areas of this Plan updated accordingly.

Phasing

14.15 The Plan recognizes that development within the Bragg Creek Plan area should progress in a logical and efficient manner, recognizing future land requirements, and logical extensions of servicing.

14.16 Development within the Hamlet Woods will be driven by landowners and developers, with applications to be evaluated based on the policies within this Plan.

14.17 Phasing of other development within the Plan Area should follow the availability of efficient, cost effective, and environmentally responsible utility services that are satisfactory to the County.

Plan Review and Amendment

14.18 The Bragg Creek Area Structure Plan shall be subject to an assessment and possible full review every 5 years and potential development of a business case in accordance with the

Municipal Development Plan, County policies, and the Municipal Government Act.

14.19 The County may initiate a review at any time where changing development, infrastructure, legislative, environmental, or community conditions warrant.

15. PLAN EVALUATION AND MONITORING

The Bragg Creek Area Structure Plan (ASP) shall be monitored to evaluate whether implementation of the Plan is achieving the Vision, Goals, Objectives, and desired community outcomes identified throughout the ASP. Similar to the Rocky View County Municipal Development Plan (MDP), monitoring should focus on measurable outcomes that track growth, environmental stewardship, infrastructure capacity, community character, economic vitality, and resilience over time.

Objectives

1. Evaluate progress toward achieving the Plan Vision and Goals;
2. Support evidence-based decision making;
3. Identify emerging trends, pressures, and opportunities;
4. Guide infrastructure and capital planning;
5. Inform updates to the Design Control Plan and Land Use Bylaw;
6. Identify when policy amendments may be required; and
7. Ensure future growth continues to respect Bragg Creek's distinct identity, environmental assets, and rural character.

Policies

15.1 Goal-Based Monitoring Indicators

a). Goal 1 — Planning for the Future

Desired Outcomes

- Growth occurs primarily within the Hamlet.
- Development aligns with approved local plans and servicing capacity.
- A diversity of housing and community-serving uses are provided.
- Growth occurs in a logical and phased manner.

Indicators and Monitoring Measures

- Number of new dwelling units approved annually.
- Number of subdivision approvals by neighbourhood area.
- Number of redesignation applications approved outside planned growth areas.
- Number of local plans approved or amended.
- Mix of dwelling types approved.
- Number of multi-unit dwellings approved.

b). Goal 2 — Live Within Nature's Limits

Desired Outcomes

- Environmental assets are preserved and connected.
- Tree canopy and forest character are retained.
- Watershed health is protected.

Indicators and Monitoring Measures

- Area of Environmental Reserve dedicated.
- Area of Municipal Reserve retained as natural open space.
- Compliance with riparian setback requirements.
- Tree canopy loss over time through GIS analysis.
- Area replanted through restoration or landscaping.
- Area of habitat linkage protected.
- Wildlife movement/conflict reports.
- Number of developments using wildlife-friendly fencing, lighting, or buffering.

c). Goal 3 — Support Regenerative Development

Desired Outcomes

- Development incorporates regenerative and low-impact practices.
- Natural systems are restored and enhanced.
- Development contributes positively to environmental performance.

Indicators and Monitoring Measures

- Number of developments incorporating low-impact development (LID).
- Number of developments using permeable surfaces.
- Number of developments using green infrastructure.
- Number of developments incorporating passive solar or winter-supportive design.

d). Goal 4 — Create High-Quality Places

Desired Outcomes

- Development reflects Bragg Creek's character and identity.
- Public spaces are attractive, accessible, and connected.
- Trails and gathering spaces are expanded.
- Development demonstrates high-quality design.

Indicators and Monitoring Measures

- Compliance with Design Control Plan requirements.
- Number of design variances requested.
- Number of developments incorporating context-sensitive architecture.
- Number of public gathering spaces created or improved.
- Public satisfaction with community spaces.
- Number of winter-supportive public realm improvements.
- Kilometres of pathways and trails constructed.

- Number of pathway gaps completed.
- Pedestrian connectivity between neighbourhoods and the Hamlet Core.
- Trail usage counts.
- Number of accessibility improvements completed.

e). Goal 5 — Provide Adequate Servicing

Desired Outcomes

- Infrastructure capacity aligns with growth.
- Transportation systems function safely and efficiently.
- Public amenities are accessible and inclusive.
- Stormwater systems support watershed health.

Indicators and Monitoring Measures

- Number of developments connected to piped services.
- Frequency of servicing disruptions or failures.
- Water consumption trends.
- Number of stormwater facilities constructed.
- Number of developments implementing LID stormwater systems.
- Traffic volumes on Highway 758, White Avenue, and key intersections.
- Collision statistics and safety trends.
- Number of transportation upgrades completed.
- Parking occupancy/utilization trends.

f). Goal 6 — Sustainable Visitor Economy

Desired Outcomes

- Hamlet Core remains economically vibrant.
- Tourism supports local businesses.
- Visitor activity is balanced with community needs.

Indicators and Monitoring Measures

- Number of active businesses in the Hamlet Core.
- Number of new businesses.
- Number of home-based businesses approved.

- Seasonal visitor counts.
- Parking utilization during peak tourism periods.
- Accommodation occupancy rates for temporary accommodations.
- Noise complaints related to tourism activity.
- Traffic congestion complaints.
- Resident satisfaction regarding tourism impacts.

g). Goal 7 — Support Agricultural Practices

Desired Outcomes

- Agricultural lands remain viable.
- Agricultural diversification is supported.
- Land use conflicts are minimized.

Indicators and Monitoring Measures

- Amount of agricultural land redesignated.
- Number of agricultural subdivisions approved.
- Number of active agricultural operations maintained.
- Number of diversified agricultural operations approved.
- Number of agri-tourism uses approved.
- Number of value-added agricultural businesses established.

h). Goal 8 — Build Resilience Against Natural Hazards

Desired Outcomes

- FireSmart principles are integrated into development.
- Emergency response capability is improved.

Indicators and Monitoring Measures

- Number of developments applying FireSmart principles.
- Area treated for vegetation management or fuel reduction.
- Number of developments using fire-resistant materials.

- Emergency access improvements completed.
- Emergency response times.

i). Goal 9 — Promote Strong Governance

Desired Outcomes

- Planning decisions align with the Vision, Goals, and Policies of the ASP.
- Community engagement continues throughout implementation of the Plan.
- The ASP remains adaptable and responsive to changing conditions and community needs.

Indicators and Monitoring Measures

- Participation levels at public engagement events.
- Number of stakeholders participating in planning processes.
- Community satisfaction regarding engagement opportunities.
- Diversity of participation across age groups, residents, businesses, and landowners.
- Number of public comments received on major planning applications.
- Frequency of updates provided to the community regarding ASP implementation.
- Number of Land Use Bylaw amendments completed to implement the ASP.
- Number of local plans approved consistent with the ASP.
- Alignment of development approvals with ASP objectives.

j). Goal 10 — Build Inclusive Communities

Desired Outcomes

- Community spaces support social interaction, recreation, and year-round use.
- Residents of all ages and abilities are able to participate in community life.
- Development contributes to social well-being, accessibility, and belonging.

Indicators and Monitoring Measures

- Number of year-round community programming initiatives.
- Participation rates at community events.
- Availability of indoor and outdoor gathering spaces.
- Public satisfaction with community amenities and gathering spaces.
- Pedestrian safety improvements completed.

16. OPPORTUNITIES FOR INVESTMENT

This section identifies future initiatives that support the long-term vision of the Plan area. These opportunities represent forward-looking action items that would enhance community infrastructure, natural assets, resilience, economic vitality, and recreational amenities as resources become available. Highlighting potential projects early creates a blueprint for future partnerships, grants, capital planning, and community-led initiatives.

Environmental Stewardship

16.1 The County should review opportunities for the following endeavours:

- a. Ongoing opportunities for public education programs designed to promote an understanding and awareness of local watershed and surface drainage issues should be encouraged.
- b. The creation of local watershed advisory councils and watershed stewardship groups should be encouraged, subject to municipal budget considerations, to help develop “grassroots” solutions that preserve and maintain the integrity of the watershed and raise awareness of local environmental issues and concerns (as per the Province of Alberta’s Water for Life Strategy12).
- c. Responsible agricultural management practices that preserve the integrity of riparian areas (e.g. programs of the Alberta Riparian Habitat Management Society (Cows and Fish)14)
- b. A central community drop-off facility to support a fuel load reduction program, with organic matter chipped on site, and either packaged and removed from the area or locally recycled.
- c. Early warning devices for installation within all new subdivision and development to protect each new development.

16.3 A partnership between the County, Kananaskis Improvement District, and the applicable provincial ministry responsible for forestry and wildfire management should be investigated with a goal of constructing a fire break within lands south and west of the Plan area.

16.4 Partnerships should be established between the County and all local operators of oil and gas facilities to coordinate responses during emergency events.

16.5 A fuel load reduction plan should be implemented throughout the entire community to encourage reduction of redundant vegetative materials in proximity to combustible structures on all public and private property.

Fire Hazard Resilience

16.2 The County should consider implementing the following measures to build fire resilience in the community:

- a. Educational opportunities with respect to FireSmart practices within natural environmental areas (in accordance with the Province of Alberta’s Partners in Protection handbook13).
- 16.6** The County should continue to monitor and review all existing mutual aid agreements it presently holds with other jurisdictions to ensure maximum efficiency for emergency service response within the Plan area.
- 16.7** A full fuel load management plan similar to that currently being implemented in Jasper and Banff should be developed and implemented throughout the Greater Bragg Creek area.
- 16.8** The County should ultimately consider developing an emergency service facility within

the area based on cooperative and mutually beneficial contributions from area residents, local developers, adjacent municipalities and jurisdictions and various levels of government.

Transportation and Infrastructure

16.9 The County should continue to explore options to implement a secondary road access out of West Bragg Creek.

16.10 The County should investigate the merit of acquiring jurisdiction over the portion of Highway 758 (White Avenue) located within the hamlet.

16.11 The County should partner with the Province to monitor the ongoing operational efficiency of the Balsam Avenue Bridge.

16.12 The County should collaborate with the applicable school board(s) to explore options to deliver an additional school site to support future population growth at a time deemed appropriate.

17. INTERGOVERNMENTAL COLLABORATION AND COOPERATION

The Bragg Creek Plan Area borders the Tsuut'ina Nation reserve to the north and east, the Kananaskis Improvement District to the south and the west, and the Foothills County to the South. The Plan contains several provisions relating to matters including stormwater, utility service, transportation, and open space that provide for compatible development and promote a coordinated and cooperative approach to planning for these cross-jurisdictional matters.

The County will maintain open communication with its municipal neighbours by circulating relevant Conceptual Scheme or Master Site Development Plans and development applications, sharing technical information, and identifying cross-boundary issues and opportunities.

Objectives

1. Encourage meaningful intermunicipal engagement and collaboration to achieve mutual goals.

Policies

17.1 The County shall continue to collaborate with adjacent municipalities to support the establishment of baseline conditions for infrastructure needs and environmental assets which assist in the planning and assessment of future growth and development.

17.2 Any applications within the Plan area adjacent to the Tsuut'ina Nation reserve, the Kananaskis Improvement District, and the Foothills County, together with all relevant supporting technical documents, shall be circulated for review; collaboration on such applications shall begin at an early stage to allow sufficient time to identify and address potential intermunicipal impacts.

APPENDICES

APPENDIX A: DEFINITIONS

Active Transportation means any form of transportation that is human powered. Typically, walking and cycling are the most common types of active transportation enjoyed in Rocky View County.

Agriculture means the use of land, buildings or structures for the raising of non-domestic animals and/or growing for food or other production.

Area Structure Plan means a statutory plan, adopted by by-law, which provides a policy framework for subsequent redesignation, subdivision and development of a specified area of land in the County.

Baseline Conditions means provide a fixed point of reference through a study or assessment that can be used for comparison purposes when determining the real and expected changes over time within a defined geographical area.

Best Management Practices (BMPs) means the minimization of the impact of increased runoff volumes and improve water quality.

The types of key storm water BMPs that can be employed in future land development areas include the following:

- Minimize generation of runoff;
- Retain runoff on-site through evapotranspiration, infiltration and/or reuse;
- Capture, hold and use runoff within a development or municipal area for reuse (green space irrigation).

Business means a commercial enterprise that offers goods and/or services. Businesses may employ a number of individuals.

Cluster Development means a form of development that groups buildings or lots within a portion of a site in order to retain larger, contiguous areas of open space, natural features, environmental areas, or other lands intended for conservation

Conservation Design means an approach to subdivision and development that identifies and protects significant natural features, environmental areas, open spaces, and landscape characteristics before determining the location of development, roads, and infrastructure.

Construction Management Plan means a plan detailing steps taken to mitigate impacts on the natural environment during the development stage.

Crime Prevention Through Environmental Design (CPTED) means a multi-disciplinary approach to crime prevention that uses urban and architectural design and the management of built and natural environments.

Density means the number of dwelling units located within a specified area of land and may be expressed as units per acre (UPA) or another unit identified by this Plan.

Environmental Reserves means lands dedicated to prevent development in unsuitable areas (e.g. floodways or escarpments), reduce water pollution, and provide access to lakes and rivers as defined in the Municipal Government Act. Environmental reserves are dedicated as public land.

Environmental Reserve Easement means lands defined in the Municipal Government Act for the purposes of Environmental Reserve and dedicated as an easement on the title of the lands.

Environmentally Sensitive Area (ESA) means an area containing environmental features, functions, or characteristics that may be particularly susceptible to disturbance and warrant consideration, protection, or mitigation through the planning and development process.

FireSmart means the nationally recognized approach to reducing wildfire risk to communities, properties, infrastructure, and the surrounding landscape through measures including vegetation management, development planning, building design, emergency planning, education, and interagency cooperation.

Fragmentation means land that has been divided into pieces in a way that lacks continuity in terms of space and/or land uses.

Green Infrastructure means natural, semi-natural, or engineered systems that use vegetation, soils, water, and natural processes to provide environmental, social, or economic benefits. Examples may include urban forests, bioswales, rain gardens, constructed wetlands, green roofs, permeable surfaces, parks, and naturalized stormwater features.

Home Ignition Zone means the area surrounding a building or structure within which the condition and arrangement of buildings, vegetation, combustible materials, and other features influence the potential for wildfire ignition and structure loss.

Industrial means any development that manufactures, processes, fabricates, assembles, or stores raw material or manufactured goods. Industrial developments may have an effect on adjacent or nearby sites due to appearance, noise, odour, emission of contaminants, fire or explosive hazards, or placement of dangerous goods.

Institutional means social, community, religious, educational, and health care services that cannot be considered residential, commercial, or industrial uses.

Land Use Bylaw means Rocky View County's Land Use Bylaw C-8000-2020, as amended from time to time.

Land Use District means districts established in the Land Use Bylaw to regulate permitted and discretionary uses of land and buildings.

Local Plan means a conceptual scheme or master site development plan. A Local Plan will have unique planning requirements, based on the planning direction provided in the ASP. Local Plans must also address the general requirements for preparing a conceptual scheme or master site development plan identified in the Municipal Development Plan (Section B3 and Appendix B).

- **Conceptual Scheme:** A non-statutory plan, subordinate to an area structure plan, and may be adopted by bylaw or resolution. To ensure the opportunity for public input, the County will continue its practice of adopting a conceptual scheme by bylaw with a public hearing. Conceptual schemes provide detailed land use direction, subdivision design, and development guidance to Council, Administration, and the public for a specific commercial, industrial, and/or multi-lot development.

- **Master Site Development Plan:** A non-statutory plan that is adopted by Council resolution. A master site development plan accompanies a land use redesignation application and provides design guidance for the development of a large area of land with little or no anticipated subdivision. A master site development plan addresses building placement, landscaping, lighting, parking, and architectural treatment. The plan emphasis is on site design with the intent to provide Council, Administration, and the public with a clear idea of the final appearance of the development.

Low Impact Development (LID) means an approach to land development that works with nature to manage stormwater runoff where it falls. LID preserves and recreates natural landscape features and minimizes hard surfaces to create functional and appealing site drainage. LID treats stormwater as a resource, rather than a waste product. LID includes a variety of landscaping and design practices that slow water down, spread it out, and allow it to soak in. These practices ultimately improve the quality and decrease the volume of stormwater entering our waterways.

Master Drainage Plan means a conceptual-level stormwater drainage plan, in support of Area Structure Plans, and prepared for large drainage areas serviced by (usually) a single outfall to a receiving water body.

Municipal Government Act means the Municipal Government Act, RSA 2000, c M-26, as amended from time to time.

Native Vegetation means plant species that occur naturally within the region and are adapted to local climatic and ecological conditions.

Nature-Based Tourism means tourism and visitor activities that are primarily associated with experiencing, appreciating, or recreating within natural landscapes and environmental areas.

Node means an identifiable focal point within the community where activities, destinations, transportation connections, public spaces, or services are concentrated.

Open Space means all land and water areas, either publicly or privately owned, that contribute to community building by preserving rural landscapes and providing residents opportunities for passive and active recreation. Open space may include current and future parks, environmentally significant areas and other natural areas, pathways and trails, greenways, land for recreation and community facilities.

Outdoor Storage means the storing, stockpiling or accumulating of products, goods, equipment, vehicles, or material in an area that is open or exposed to the natural elements.

Panhandle means a long, narrow strip of land used to provide direct lot access to a roadway.

Plan Area means all land within the boundary of the Bragg Creek Area Structure Plan.

Private Sewage Treatment System (PSTS) means on-site wastewater treatment and includes tile fields, treatment mounds, and packaged sewage treatment plants.

Redesignation has the same meaning as Rezoning.

Reserves means lands dedicated to the County by the developer through the subdivision process, as defined in the Municipal Government Act. They include:

- environmental reserve;
- municipal reserve;
- community services reserve;
- school and municipal reserve; and
- school reserve.

Riparian Buffer means an area of land adjacent to a waterbody or wetland intended to protect riparian functions, water quality, habitat, bank stability, and other environmental feature

Purple-Pipe System means a network of pipes designed to transport non-potable (non-drinking) water, such as reclaimed or recycled water and greywater.

Shallow Utility means electrical, telecommunications, and gas utilities.

Stormwater means surface runoff generated from rainfall, snowmelt, or other precipitation events that flows across or is collected from land and developed surfaces.

Stormwater Pond means an artificial pond that is designed to collect and treat stormwater to an acceptable Provincial standard. The stormwater pond disposes of stormwater through controlled release, absorption into the ground and/or evaporation.

Surface Water means any water located above ground.

Tentative Plan of Subdivision means a proposal detailing a site-specific subdivision design that may form the basis for an application for subdivision approval, which is subject to a decision (either approval or refusal) of the County's Subdivision Authority.

Wetland is land saturated with water long enough to promote wetland aquatic processes as indicated by poorly drained soils, hydrophytic vegetation, and various kinds of biological activity that are adapted to a wet environment.

Wildlife Habitat means an area that provides the food, water, shelter, breeding areas, or other conditions required to support wildlife.

Wildlife Movement Corridor means an area of land that provides connectivity between habitat areas and allows wildlife to move through the landscape with reduced barriers or disturbance.

Use means the type of general activity allowed on a parcel of land. In this document Use may have a modifier such as commercial, industrial, mixed, or agriculture to give a greater level of understanding of what is intended. Detailed Uses and regulations are found in Rocky View County's Land Use Bylaw.

APPENDIX B: BRAGG CREEK DESIGN CONTROL PLAN

APPENDIX C: CONCEPTUAL SCHEME REQUIREMENTS

Conceptual schemes provide detailed direction for the subdivision and development of lands within the Plan Area. A conceptual scheme shall demonstrate how the proposed development conforms to the Municipal Development Plan, this Area Structure Plan, the Bragg Creek Design Control Plan, the County's Servicing Standards, and other applicable County plans and policies. The requirements below reflect the matters identified in Section B3.0 of the Rocky View County Municipal Development Plan.

C.1 Plan Area and Context

A conceptual scheme shall:

- a.** include the entire area proposed for development and, where required by the County, adjacent lands that have future subdivision or development potential;
- b.** describe existing land ownership, land uses, development, parcel configuration, and surrounding land uses;
- c.** demonstrate how the proposal connects and integrates with adjacent lands, neighbourhoods, transportation networks, open spaces, trails, and utility systems;
- d.** demonstrate consistency with the Municipal Development Plan, this Plan, and other applicable statutory and non-statutory plans; and
- e.** provide a summary of engagement undertaken with affected landowners, residents, agencies, and other interested parties.

C.2 Existing Conditions

A conceptual scheme shall identify and evaluate existing conditions within and adjacent to the plan area, including:

- a.** topography, soils, slopes, and geotechnical conditions;
- b.** surface water, groundwater, drainage patterns, flood hazards, and other hydrological conditions;
- c.** wetlands, riparian areas, watercourses, vegetation, forest cover, Environmentally Sensitive Areas, wildlife habitat, and wildlife movement corridors;
- d.** wildfire hazards and existing vegetation conditions affecting FireSmart planning;
- e.** agricultural capability and existing agricultural operations;
- f.** historical, archaeological, and culturally significant resources;
- g.** existing roads, accesses, pathways, trails, utilities, rights-of-way, easements, pipelines, and other infrastructure; and
- h.** physical constraints or hazards that may affect subdivision or development.

C.3 Development Concept

A conceptual scheme shall provide a comprehensive development concept that identifies:

- a.** proposed land uses, housing forms, parcel sizes, and anticipated development yields;
- b.** a landscape plan shall be prepared that identifies tree retention, vegetation management, FireSmart measures, landscaping, grading, lighting, screening, and other site design measures necessary to support the character of Bragg Creek;
- c.** residential density, projected population, and the proposed distribution of housing types;
- d.** the proposed subdivision pattern and its relationship to existing and future development on adjacent lands;
- e.** the location and configuration of municipal reserve, environmental reserve, public open space, parks, trails, and pedestrian connections;
- f.** the proposed transportation network, including road classifications, intersections, accesses, emergency access, secondary access, sidewalks, pathways, and trails;
- g.** a water and wastewater servicing strategy, including anticipated capacity, infrastructure requirements, future expansion, rights-of-way, and connections to existing or planned systems;
- h.** a stormwater management strategy that considers pre-development drainage conditions, overland drainage, low-impact development measures, and downstream impacts;
- i.** required improvements to existing transportation, utility, emergency-service, and community infrastructure;
- j.** the location of any required school, institutional, recreation, or community-service sites;
- k.** measures to avoid or mitigate impacts on environmentally sensitive lands, wildlife movement, neighbouring properties, and existing development; and
- l.** the proposed sequence and phasing of subdivision, development, servicing, and infrastructure construction.

C.4 Supporting Studies

A conceptual scheme shall be supported by the technical studies required by the County, having regard to the location, scale, and nature of the proposed development. These may include:

- a.** a Biophysical Impact Assessment;
- b.** an Environmentally Sensitive Area delineation and protection strategy;
- c.** a geotechnical and slope-stability assessment;
- d.** a hydrogeological assessment;

- e.** a wildfire risk assessment and FireSmart strategy;
- f.** a Traffic Impact Assessment;
- g.** a utility servicing study;
- h.** a Stormwater Management Plan;
- i.** a construction management and erosion and sediment control plan;
- j.** a historical resources assessment;
- k.** an environmental site assessment;
- l.** an infrastructure cost, lifecycle, and financing analysis; and
- m.** any additional information or study considered necessary by the County.

APPENDIX D: LOCAL PLANS IN BRAGG CREEK

APPENDIX E: RESOURCE INVENTORY AND SENSITIVITY ANALYSIS (RISA)

**RESOURCE INVENTORY AND
SENSITIVITY ANALYSIS**
Greater Bragg Creek Area
Alberta

Prepared for
Municipal District of Rocky View No. 44
911 - 32nd Avenue NE
Calgary, AB T2E 6X6

FEBRUARY 2005



EXECUTIVE SUMMARY

The following is the Resource Inventory and Sensitivity Analysis (RISA) of the Greater Bragg Creek area completed by Alpine Environmental Ltd. (Alpine) for the Municipal District of Rocky View No. 44 (MD). The RISA was completed for the entire area of Greater Bragg Creek that is part of the MD's jurisdiction. The Greater Bragg Creek area is currently undergoing an Area Structure Plan (ASP). The ASP terms of reference requires completion of a baseline inventory of the environmental resources within the area. This RISA was designed to provide assistance to the ASP committee in developing policy-based recommendations. The RISA consisted of acquisition and inventory of existing data from the Calgary Regional Partnership (CRP) and the MD's own geospatial data.

A RISA technical committee was formed to evaluate the environmental resources and sensitivity of the policy area based on the information provided. A resource inventory was completed as part of this study. It revealed data gaps primarily with respect to groundwater resources, specifically quality and quantity. It is the view of the technical committee that groundwater resources represent the most significant concern with respect to development in the area.

The need for adequate riparian planning and habitat connectivity was addressed in a riparian policy. The RISA technical committee agrees that the proposed setback of 50 m along the Elbow River and 30 m adjacent to all other surface water bodies, including wetlands, can serve the dual purpose of: a) improving and maintaining high quality water recharge to surface water bodies and b) providing wildlife corridors.

A sensitivity analysis revealed that approximately 26% of lands in the policy area are excluded from potential development based on an existing MD Planning policy. As a result of challenges pertaining to the provision of access and servicing, subdivision and development on slopes greater than or equal to 15% is generally not permitted. The largest proportion of lands (43%) within the policy area correspond to areas of low slope (0 - 4%).

An analysis of current forest composition in the area shows that much of the Greater Bragg Creek area is forested with hardwood and softwood tree species. The largest single forest cover class (34%) is pure hardwood. Non-forested areas make up the second largest single class covering approximately 26% of the policy area.

A modelling exercise to determine the range of natural variability of the area, given an imposed disturbance like wildfire, revealed that the natural proportion of forest types range from 0.5 to 2.0 times the current composition. The technical committee suggests that a directive by the MD should include a schedule to ensure the forest composition range of natural variability is maintained.



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1. INTRODUCTION & BACKGROUND INFORMATION

Alpine Environmental Ltd.'s (Alpine) services were retained by the Municipal District of Rocky View No. 44 (MD) in June 2004 to conduct a resource inventory and sensitivity analysis (RISA) for the Greater Bragg Creek area (Bragg Creek). The goal of the RISA was to provide a baseline inventory of environmental resources in the area and to assist the Area Structure Plan (ASP) Steering Committee in developing policy-based recommendations for the area. Data were provided both directly from MD data resources and, via the MD, from the Calgary Regional Partnership (CRP). The information gathered during the RISA process was compiled and placed into an interactive cartographic Geographic Information System (GIS).

The MD covers an area that borders the City of Calgary to the north, east and west. The total area of the MD is approximately 4,000 km² (Municipal District of Rocky View, 2003). The Greater Bragg Creek policy area (Figure 1) covers approximately 47.9 km², or approximately 1% of the total MD lands. Bragg Creek is situated in the foothills of the Front Ranges of the Rocky Mountains and is often referred to as the "Gateway to Kananaskis Country", which is a Provincial multi-use recreational area that borders Bragg Creek to the west. The area supports tourist and recreational opportunities along with farm land, residential and commercial development.

Generally, the attitude of and about Bragg Creek is one of environmental sensitivity. Recreational users and residents alike have a strong appreciation for the natural serenity of water and woodland provided in the area. A generally wooded area, forests of varying abundance of Trembling Aspen, Alpine Fir, Douglas Fir, Alpine Larch, Lodgepole Pine, Balsam Poplar, Black Spruce, Engelmann Spruce and White Spruce cover much of Bragg Creek. In addition, large non-forested areas comprise approximately 25% of the total landscape of Bragg Creek. A portion of the non-forested component are surface water bodies including one river, the Elbow, and its tributary, Bragg Creek, which have their confluence in the central portion the Bragg Creek area.

There is a sense that preserving the environmental integrity of the area is a common objective. In meeting the objectives of the RISA, it was recognized that an awareness of the broader ecosystem, of which Bragg Creek is a part, and the need to harmonize development and preservation were fundamental to the success of the study.

The information presented herein is a compilation of results coming from the RISA project directed by Ms. Gail Sokolan, and a RISA technical committee comprised of:

- Mr. Ken Venner, Municipal Planner, MD of Rocky View; and,
- Mr. Tim Dietzler*, Agricultural Fieldman, MD of Rocky View.

and resident experts:



- Dr. Roy Crowther*, Ecologist, Alpine (water, fish, wetlands, GIS);
- Dr. Brad Stelfox, Forem Technologies, Landscape Ecologist (ecology, GIS);
- Dr. Mary Reid, Ecologist, University of Calgary (insects);
- Mr. Bill Hoyne, Systems Administrator, University of Calgary (groundwater); and,
- Mr. Eric Lloyd, local resident (social engineer);

* co-chair of RISA technical committee.

Several meetings were convened with the RISA technical committee to discuss and review the data inventory and the results of spatial analyses. Due to conflicting schedules, it became necessary to convene partially-attended technical committee meetings. As the project progressed Alpine convened a total of twelve technical committee meetings; however, no meeting was attended by the entire team. To ensure the committee was kept apprised of project developments, relevant information relating to the material covered at each meeting was circulated to the entire committee via e-mail.

This assessment was based on information provided by the MD and, by way of the MD, data were also provided through the Calgary Regional Partnership (CRP).

The objectives of and terms of reference attached to this RISA were as follows:

To collect and compile an inventory of relevant spatial data with a focus on data already existing in the region. Of particular importance were the following:

- Soils;
- Topography;
- Surface water including lakes, rivers, streams, wetlands, peatlands;
- Groundwater;
- Land use designations;
- Riparian areas;
- Vegetative cover;
- Resource extraction including mining, forestry, oil & gas;
- Surface disturbance;
- Wildlife;

- Provincial and Federally designated areas;
- Identification of data gaps;
- Identification of sensitivities revealed through the RISA process; and,
- Provision of recommendations to address these sensitivities.

Based on this information and an interpretation of the RISA data, determine levels of sensitivity and risk to future development options or plans.

2. GLOSSARY

Crown Closure - the percent canopy closure for each tree species observed by a person on the ground using a mirrored instrument divided into a grid.

Datum - the spheroid that defines the surface of the earth (e.g. NAD83).

Development - any of the following associated with or resulting from local government regulation or approval for residential, commercial or industrial activities or ancillary activities to the extent that they are subject to local government powers i.e. the Municipal Governance Act:

- a) removal, alteration, disruption or destruction of vegetation;
- b) disturbance of soils;
- c) construction or erection of buildings and structures;
- d) creation of non-structural impervious or semi-impervious surfaces;
- e) flood protection works;
- f) construction of roads, trails, docks and bridges;
- g) provision and maintenance of sewer and water services; and,
- h) development of utility corridors and / or subdivisions as defined by the MD.

Digital elevation model - is also known by the common abbreviation “DEM”. A DEM consists of an array of evenly spaced grid cells which hold elevation values and have horizontal reference to a consistent projection and coordinate system.

Geomatics - is a field of study that incorporates and systematically manages all information related to the acquisition and use of spatially referenced data.

Metadata - is data about data. It provides information about the development, use, currency, relevance and spatial referencing of data.

Orthophoto - is a completely spatially referenced photograph that has been corrected for all variations due to relief, scale and other displacements.

Pixel - is the contraction for picture element. In an image, it is the area on the ground represented by each digital number. Each pixel holds a corresponding digital number. The digital number can represent any input unit, such as slope, tree species or elevation. The digital number for a pixel represents the average true value for the area covered by the extent of a single pixel.

Riparian area - a streamside protection and enhancement area.



Remotely sensed images - images acquired by airborne or satellite platforms

Stream - includes any of the following that provide fish habitat:

- a) a watercourse, whether it usually contains water or not;
- b) a pond lake, river, creek or brook; and,
- c) a ditch, spring or wetland that is connected by surface water flow to something referred to in a) or b).

Triangulated irregular network - also known by the common abbreviation "TIN", is a contiguous surface on non-overlapping triangles which represent the surface of a plane. When the input data for a TIN represent elevation, the resulting TIN provides a visual approximation of the sloped surface.

Wetland - land that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, fens, and similar areas that are not part of the active flood plain.

3. METHODS

The area was assessed using a combination of aerial photographs, spatial data and local knowledge contributed by the technical committee. All data were provided by the MD with the exception of provincially and federally designated sites (Parks) as discussed in section 3.1 below.

3.1 RESOURCE INVENTORY

All vector data provided by the MD and CRP were presented in or converted to ESRI shapefile format (*.shp). Data provided by the CRP were converted to the coordinate system and datum used by the MD Geomatics department (NAD83, 3TM, -114CM). A summary of existing data was compiled and circulated to the committee to assess the utility and project-specific relevance of the datasets. Data gaps were identified throughout the project and were filled, where possible, given the confines of budgetary restraints.

No spatial data related to provincially and federally designated sites were provided by the MD or CRP. Free spatial data are provided by the Government of Canada through Natural Resources Canada (NRCan). National and provincial park boundary data were acquired through the NRCan Geogratis resource.

Each data layer was examined for completeness of spatial extent, attribute data and metadata. Where deficiencies in one or more of these areas were found, it was brought forward to technical committee to discuss the utility of the data for the purposes of this project.

3.2 SENSITIVITY ANALYSIS

3.2.1 *Riparian Policy*

A riparian policy was developed as part of this study. It is based on the review of current and historic literature and is appended (Appendix I).

3.2.2 *Slope*

Generally, the MD's planning policies discourage subdivision and development on slopes greater than 15%. Initial attempts to use the DEM provided by the CRP revealed that the resolution of the DEM is too coarse for the purposes of this study. An elevation point file was created from vertices of an edited contour (line) layer comprised of data from both the MD and the CRP. A TIN was constructed from the elevation point file containing x, y and z values. The TIN was generated using the ESRI extension 3DAnalyst. In this instance, the surface is a representation of elevation.

Using the TIN as the input data, an algorithm provided in the ESRI extension Spatial Analyst was used to derive slope. The result is a raster data layer comprised of square cells called picture elements (pixels). The slope derivation resulted in thousands of 32.39519235 m pixels. The value of each pixel represents the average of input values over the area, in this instance, 32 m by 32 m. The slope algorithm does not support smaller pixel sizes in this case, as the default value is constrained by the resolution of the input data (TIN). The resulting slope values were calculated in units of percent slope.

3.2.3 Forest Composition

Current forest composition is provided by the Alberta Vegetation Inventory (AVI). Data provided by the CRP included a layer of AVI polygons that delineate areas of homogeneous forest composition. Primary and sub-dominant tree species and their current abundance (%) are assessed by Alberta Forestry using audited aerial photo interpretation (1:20,000 orthophotos) and ground truthing. Metadata indicate the dataset provided was current to September 2001.

3.3 GEOGRAPHIC INFORMATION SYSTEM

The work presented herein has been incorporated into a GIS. This system allows all information from the sensitivity analysis to be easily accessible and useable in the existing GIS currently in use by the MD. All data layers created by Alpine have been annotated with metadata documenting the purpose, spatial referencing and analytical methods used to derive the layer.

4. RESOURCE INVENTORY

The RISA committee examined the available data and discussed the merits and limitations of each dataset.

4.1 DATA INVENTORY

The MD provided several layers of spatial data currently held in their Geomatics database. A large portion of the resource inventory involved assessing the quality of the data, assembling the data to a consistent geographic coordinate system and datum and identifying gaps within the dataset.

4.1.1 Data provided from the Municipal District data holdings

The following data layers were provided by the MD:

- Hydrobdy;
- PolicyAreas;
- 10 m_contours_GBC;
- LegalFabric; and,
- LandUseByTaxCode.

The following data layers were provided by the MD but are sourced from the Prairie Farm Rehabilitation Administration (PFRA):

- Braggcreekfloodrisk;
- Braggcreekfloodriskareas; and,
- GBC_WWELLS.

4.1.2 Data provided from the Calgary Regional Partnership data holdings

The following data layers were provided by the CRP:

- WW_WATER_QUAL_STN;
- WEATHER_STNS;
- WATER_WELLS;
- WATER_QUALITY;
- WATER_QUANTITY;



- WATER_GAUGING_STN;
- WATER_AUTH;
- OIL_GAS_WELLS;
- BUILDINGS;
- CONTOURS;
- RIVERS_STREAMS;
- POND_RESERVOIR;
- WETLANDS;
- TRAILS;
- SPOT_HGT;
- ROADS;
- CUTLINES;
- CITY_BNDRY;
- BRIDGES;
- AIRSTRIPS;
- AVI;
- AVI_CC;
- GRADIENT;
- GROUNDWATER_YIELD;
- SURFICIAL_GEOL;
- SURFACE_TEXTURE;
- SURFACE_MORPHOLOGY;
- RELIEF;
- SOIL_CLASS;
- QUATERNARY_GEOL;
- LANDUSE;
- LANDSCAPE;

- LAKES;
- ELBOW_WATERSHED;
- ELBOW_SUB_BASIN; and,
- ELBOW_BUFFER.

4.1.3 Alpine generated data

Slope_nov2204_32mfromtin:

- Slope model created from TIN clipped to Policy Areas, pixel size = 32 m.

Aspect_Nov2204_32mfromtin:

- Aspect model created from TIN clipped to Policy Areas, pixel size = 32 m. Methodology to create this layer is the same as that for slope, using a different ESRI algorithm. These data, while not directly used in the sensitivity analysis portion of this project, are provided for the future use of the MD.

AVI_Relief_Slope_Nov2204:

- Union of AVI, Relief (with AGRASID soil composition data) and Slope, clipped to Policy Areas.

ContoursClip:

- Completed contour layer clipped to Policy Areas.

DissolvePolicyAreas:

- Policy Area layer from MD dissolved on PolicyArea attribute to remove sliver polygons that existed in root dataset.

SurfaceWater:

- ElbowRiver digitized to capture active flood plain (estimated from airphoto) and all other surface water features provided in datasets from the MD and CRP.

SurfaceWaterBuffer:

- Buffer of SurfaceWater to 50 m (Elbow River) and 30 m (all other waterbodies) in accordance with proposed Riparian Policy (Appendix I).

ClipProtectedAreasOCSITES:

- Bragg Creek Provincial Park.

ClipCrownReservations:

- Bragg Creek Natural Area.

4.2 RESOURCE ASSESSMENT

4.2.1 Utility of data provided - MD

Hydrobdy:

- This layer outlines hydrologic features within the policy area. It is not considered complete.

PolicyAreas:

- This layer outlines the four policy areas within Greater Bragg Creek.

10m_contours_GBC:

- This layer provides elevation contour information and covers the entire policy area. This layer does not contain elevation attribute data as it was provided as a DXF file and corrections have been made to the file upon merging with CRP provided elevation contour information. Only a small portion of this dataset, not covered by the CRP data, was used in the project.

LegalFabric:

- This layer outlines parcels within the policy area.

LandUseByTaxCode:

- This layer outlines parcels within the policy area and provides attribute information with respect to land use of each parcel.

Braggcreekfloodrisk:

- This layer, provided to the MD from the PFRA, appears to provide cross section locations along a flood risk area within the Hamlet. No metadata was provided with this layer and the utility of the data is not known.

Braggcreekfloodriskareas:

- This layer, provided to the MD from the PFRA, appears to delineate flood risk areas within the Hamlet. No metadata was provided with this layer and the utility of the data is not known.

GBC_WWELLS:

- This layer, provided to the MD from the PFRA, provides location and attributes information for water wells within, and to approximately 6 km beyond, the policy area. No metadata was provided with this layer and the utility of the data is not known. Data appear to be consistent with that which was collected by Alberta Environment at the time of drilling. Some water chemistry data is provided. No metadata accompanied these data and the currency of the data is not known.

4.2.2 Utility of data provided - CRP

The data provided by the CRP represents a compilation of spatial data from various, disparate sources. The City of Calgary, Geomatics department has, where possible, provided metadata to accompany their files. It was found that the metadata provided varied in completeness which resulted in limitations in the utility of the data.

WW_WATER_QUAL_STN:

- Two data points exist located on Bragg Creek approximately 450 m apart near the Hamlet of Bragg Creek. Water quality data can be linked using a related table (WW_QUALITY_DATA.dbf). Greater spatial distribution of sample locations and analysis of a consistent suite of parameters would create utility in this data and allow analysis of spatial and temporal trends in surface water quality. Given the limited distribution of sample locations, this dataset was not considered useable for this project.

WEATHER_STNS:

- No weather stations exist within the Bragg Creek policy areas. Furthermore, this database does not contain any weather information.

WATER_WELLS:

- From this dataset it is shown that 489 water wells are located within the policy area. Upon inspection of the data, it was determined, through local knowledge, that the currency and completeness of these data is suspect.

WATER_QUALITY:

- Seven data points exist within the policy area: two surface water, one (1) groundwater, three rivers or stream and one (1) unknown type. No water quality data are provided.

WATER_QUANTITY:

- One data point exists within the policy area. This point is located on the Elbow River at Bragg Creek. No water quantity data are provided.

WATER_GAUGING_STN:

- Three hydrometric gauging station data points exist within the policy area. Watershed and basin information is provided, along with gross and effective drainage area of the same. The view of the technical committee is that given the very limited hydrologic and hydrogeologic data available, this layer alone does not represent an important data source for the purposes of this project.

WATER_AUTH:

- Forty-seven data points exist within the policy area. This layer endeavours to provide water abstraction data; however, the metadata is not complete. No units of measurement are provided, making numeric values of abstraction useless, and the metadata in fact appears to be "one off". For example, given three attribute fields, A, B and C, the metadata

reference provided in A actually appears to refer to B, and the reference provided for B actually appears to refer to C. Inconsistent and incomplete metadata leads to uncertainty in the quality of the entire data layer.

OIL_GAS_WELLS:

- Two data points exist within the policy area. One is described as an abandoned well and the other, a farm water well. These data were not considered particularly relevant to the sensitivity analysis portion of the project.

BUILDINGS:

- 534 buildings, all described as a house, are represented by data points within the policy area. These data are notably incomplete as no development is represented in the north part of West Bragg Creek, within the Hamlet itself or in the community near Wintergreen.

CONTOURS:

- Contour line data representing elevation was complete for the policy area with the exception of a small area (approximately one and a half sections) in the northwest portion of West Bragg Creek. These data were used in this project.

RIVERS_STREAMS:

- Rivers and streams are believed to be correctly represented in this data layer. These data were used in this project.

POND_RESERVOIR:

- Ponds and reservoirs are believed to be correctly represented in this data layer. These data were used in this project.

WETLANDS:

- No wetlands are represented within the policy area. Based on local knowledge, this is known to be incorrect.

TRAILS:

- Six trails are represented within North Bragg Creek. The total approximate length of these trails is 5.3 km. These data were not considered relevant to the sensitivity analysis portion of the project.

SPOT_HGT:

- Forty-two data points representing point elevation exist within the policy area. These data appear correct and were used in confirming the consistency and accuracy of the contour data.

ROADS:

- This layer represents various private, collector, major, gravel, dirt, and paved / chip sealed roads along with a secondary highway. The layer is not considered complete, as evidenced when compared with the legal fabric provided by the MD.

CUTLINES:

- Approximately 40 km of cutlines are represented within the policy area. These data were not considered relevant to the sensitivity analysis portion of the project.

CITY_BNDRY:

- This layer represents the City of Calgary boundary, approximately 30 km east of the policy area and is not relevant to this project.

BRIDGES:

- No bridges are represented within the policy area. This is known to be erroneous information and, as a result, the completeness of this layer is suspect.

AIRSTRIPS:

- No airstrips are represented within the policy area. This is believed to be correct.

AVI:

- Complete Alberta Vegetation Inventory (AVI) data were provided for the policy area. These data were used in the sensitivity analysis portion of the project.

AVI_CC:

- There are no clear cuts within the AVI data represented within the policy area. This is believed to be correct.

GRADIENT:

- This layer provides complete coverage over the policy area; however, due to incomplete metadata, the unique information provided is not useable in this project. This layer contains the same information provided in the Relief layer with the exception of the "Gradient" attribute. No metadata with respect to units of measurement is provided for the "Gradient" attribute yielding a dataset without utility.

GROUNDWATER_YIELD:

- This layer provides complete coverage over the policy area; however, due to incomplete metadata, the information provided is not useable in this project. No metadata with respect to units of measurement are provided for the "Yield" attribute. In addition, the values provided for "Yield" have a wide range (unique values within field are: 160 - 650, 30 - 160, 5 - 30 and < 5). While the units of yield are not known, the utility of any data that has a range between 160 and 650 units is not expected to be high. If the units of measurement are gallons per minute, the lowest value (5) does not provide enough information to be

useful, as the Alberta Environment limit for groundwater yield required for a domestic water well is 2 gpm.

SURFICIAL_GEOL:

- This layer provides complete coverage over the policy area. The surficial geology of the region is captured and good descriptions provided. The utility of this dataset for the purposes of this project could not be established.

SURFACE_TEXTURE:

- This layer provides complete coverage over the policy area. The texture of surface material of the region is captured and good descriptions provided. The metadata does not indicate what depth interval is considered “surface”. The polygons and attributes of this layer are consistent with AGRASID soil polygons. AGRASID data are held in this layer, in duplicity with GRADIENT, RELIEF, SURFACE MORPHOLOGY and LANDSCAPE. The utility of this dataset for the purposes of this project could not be established.

SURFACE_MORPHOLOGY:

- This layer provides complete coverage over the policy area. Two (2) morphology types are present within the policy area: hill and valley. The metadata does not indicate what criteria are used to assign areas to morphologic classes. The polygons and attributes of this layer are consistent with AGRASID soil polygons. AGRASID data are held in this layer, in duplicity with GRADIENT, SURFACE TEXTURE, RELIEF and LANDSCAPE. The utility of this dataset for the purposes of this project could not be established.

RELIEF:

- This layer provides complete coverage over the policy area; however, due to incomplete metadata, the information provided is not useable in this project. No metadata with respect to units of measurement is provided for the “Yield” attribute. In addition, the values provided for “Relief” have a wide range (unique values within field are: 3, 5, 30, and 60). In addition, the highest value of “Relief” (60) corresponds to the Elbow River Valley. The polygons and attributes of this layer are consistent with AGRASID soil polygons. AGRASID data are held in this layer, in duplicity with GRADIENT, SURFACE TEXTURE, SURFACE MORPHOLOGY and LANDSCAPE. While any of the five (5) layers containing AGRASID data would have sufficed, this layer was used as the root source for the AGRASID data compiled for this project. The “Relief” data were not used.

SOIL_CLASS:

- This layer provides complete coverage over the policy area. The polygon attributes are based on the Canadian Land Inventory (CLI) Agriculture class descriptions. Four (4) classes exist within the policy area: class 5 (very severe limitations which restrict their capability to producing perennial forage crops, and improvement practices are feasible), class 6 (capable only of producing perennial forage crops, improvement practices are not feasible), class 7 (no capability for arable culture or permanent pasture) and class O (organic soils, not placed in capability classes). The majority of the policy area is covered by class 5 soils. It was determined that the class descriptions and boundaries presented in

this layer are not sufficiently detailed to provide useful information to this project with respect to development and potential land use.

QUATERNARY_GEOL:

- This layer does not provide complete coverage over the policy area. Four (4) types of quaternary deposits are noted for the area of Bragg Creek that does have coverage. These types are: glacial, bedrock and glacial, fluvial and ice-contacted lacustrine. The utility of this dataset for the purposes of this project could not be established, not only due to the partial coverage of the data.

LANDUSE:

- This layer provides complete coverage over the policy area. There are six (6) land use types over the area: 1 (Cropland), 2 (Forage), 3 (Grassland), 5 (Trees), 7 (Water Bodies), and 8 (Other lands). The majority of the policy area is classified as grassland or trees.

LANDSCAPE:

- This layer provides complete coverage over the policy area. There are six (6) types of landscape described: three (3) variations of a hummocky type plus a level and a terraced class, undulating high relief class and a wide valley class. The large majority of the policy area is classified to one (1) of the three (3) hummocky type landscape classes. The polygons and attributes of this layer are consistent with AGRASID soil polygons. AGRASID data are held in this layer, in duplicity with GRADIENT, SURFACE TEXTURE, RELIEF and SURFACE MORPHOLOGY. The utility of this dataset for the purposes of this project could not be established.

LAKES:

- No lakes are represented within the policy area.

ELBOW_WATERSHED:

- Divided into nine (9) polygons depicting effective drainage areas, the outer boundary of this layer is consistent with that of the ELBOW_SUB_BASIN layer extent. The extent covers the policy area with the exception of a small area (approximately one and a half sections) in the northwest portion of West Bragg Creek.

ELBOW_SUB_BASIN:

- A single polygon that defines the Elbow River sub-basin. The extent covers the policy area with the exception of a small area (approximately one and a half sections) in the northwest portion of West Bragg Creek.

ELBOW_BUFFER:

- 5 km and 10 km buffer from the boundary of the ELBOW_SUB_BASIN.



4.2.3 Utility of data provided - Alpine

The area coverage of the policy area boundaries is 0.21 km² larger than the coverage of the AVI / AGRASID / Slope data. There are small areas at the northeast and northwest corners of the north edge of the policy area boundary. This discrepancy is rooted in the TIN interpolation procedure that rounds edges where no data exist beyond the edge. These rounded edges contain no slope or aspect data and impact the total size of the area covered by all three (3) layers (AGRASID, AVI and Slope / Aspect).

Policy areas = 47.91 km²

AVI/AGRASID/Slope area = 47.69 km²

Difference in aerial extent = 0.21 km²

Slope_nov2204_32mfromtin:

- This layer provides nearly complete coverage of the policy area, as outlined above. Slope data values are provided that indicate the percent slope angle from horizontal.

Aspect_Nov2204_32mfromtin:

- This layer provides nearly complete coverage of the policy area, as outlined above. Aspect data values are provided that indicate the facing direction of slope in units of azimuth degrees.

AVI_Relief_Slope_Nov2204:

- This layer provides nearly complete coverage of the policy area, as outlined above. This layer is a result of intersection operations of Slope, AVI and Relief data sets. The intersection operation produces polygons with the full extent and attributes of the input layers. The resulting layer enables tabulation of relationships between variables and a single data holding place for these important component layers.

ContoursClip:

- This layer provides complete coverage of the policy area. The contour data from both the MD and CRP were combined to create a seamless coverage for the area of interest. The slope calculation was based on this layer.

DissolvePolicyAreas:

- The policy area layer provided by the MD contained sliver polygons. Sliver polygons are erroneous and the dissolved layer contains only four (4) polygons, each corresponding with one (1) of the four (4) areas within the Bragg Creek policy area.



SurfaceWater:

- This layer is a result of merging all hydrologic data provided by the MD and CRP. Now a single data source for hydrologic information, the root layers of each component are still held as attributes within the database. This provides single-source coverage of hydrologic features in the policy area.

SurfaceWaterBuffer:

- As outlined in the Riparian Policy (see 4.1, below), a buffer of 50 m beyond the banks of the Elbow River and 30 m beyond all other surface water bodies has been delineated as riparian area.

ClipProtectedAreasOCSITES:

- The extent of Bragg Creek Provincial Park is provided as part of the RISA terms of reference.

ClipCrownReservations:

- The extent of Bragg Creek Natural Area is provided as part of the RISA terms of reference.

4.2.4 Data gaps

One aim of the RISA process was to identify data gaps. Based on the terms of reference outlined in Section One (1), the RISA has revealed several areas of weak or absent data. The resource inventory portion of the project was not able to satisfy all terms of reference for this project due to data resolution and reliability.

At the initiation of the RISA project Alpine was informed that Husky Energy Inc. (Husky) and Shell Canada Ltd. (Shell) had acquired spatial data, particularly of indicator wildlife species, for the area and was in agreement to partner with the MD to provide these data for the purposes of the RISA, as outlined in the terms of reference. The MD advised Alpine that further investigation into these data sources revealed that Golder Associates Ltd. (Golder) was the holder of these data and, as such, the MD requested relevant copies to be provided to the RISA project. Alpine was notified that following a search for these data, Golder had advised the MD that they were not available due to data storage system instability leading to their ultimate loss.

Other data sources were identified at the beginning of the project, including the Spray Lakes Sawmills and the T'suu Tina Nation; however, no auxiliary data, beyond that outlined in section 4.1, were provided.

Soils and surficial geology data were provided to this project at a ground resolution that does not allow the RISA technical committee to provide clear guidance with respect to development, particularly in terms of assessing areas with characteristics likely to be problematic for septic disposal using a tank and tile system. Given that users in the area, including but not limited to

the downstream users of the City of Calgary, place a high value on clean surface water bodies and given the proximity of residents using septic field systems to surface water bodies, the lack of monitoring of septic field efficacy is considered an important data gap.

Resource extraction data with respect to mining were not provided. Freely available data with respect to mining were investigated and show no such resources in the area; however, given the data resources available, confirmation of this result is not considered complete.

Wildlife data were not provided and, in the opinion of the RISA technical committee, accurate and complete sources of these data are not known to exist. In lieu of this, the RISA technical committee has decided that the use of forest cover composition (AVI) is an adequate surrogate for wildlife data, based on the premise that preservation of connected habitat will allow and encourage the local population of wildlife to use the area.

Bridge data provided by the CRP requires updating to include the existing bridge structures in the Greater Bragg Creek policy area.

Accurate and complete riparian area delineation was not provided to the project leading to the need, identified by the RISA technical committee, to develop a riparian policy. Surface water data provided did not resolve some important features tied to the accurate definition of riparian buffer widths, specifically, the top of bank. To fill this gap, for the purposes of the RISA, Alpine provided airphoto interpretation and adjustment of surface water body margins which provided a better dataset on which to apply the riparian policy. In addition, airphoto information reveals the presence of lentic water bodies (e.g. lakes) which were not captured in the vector data provided. Given the data provided, these gaps in surface water data have been filled to the best of the ability of Alpine and the RISA technical committee; however, in the absence of groundtruthing, this exercise is not considered complete.

Groundwater information was found to be inaccurate in terms of water well locations, and incomplete in terms of the aquifer characteristics of the producing depth of water wells. Aquifer characteristics data, such as groundwater quality and yield are incomplete and, where present, are not at a resolution that can provide guidance to the committee with respect to availability and potential development of water resources.

The RISA study based its hydrogeological information on data provided by the MD. Mr. Bill Hoyne reviewed a report, external to the RISA, which was completed for the M.D. of Rocky View #44 by Hydrogeological Consultants Ltd. (HCL) in March 2002. This study encompassed the entire municipal district, which is an area much larger than the RISA study area. The data and analysis provided in the HCL (March 2002) report is of a type and quality that could prove useful for a preliminary study of hydrogeology of the Greater Bragg Creek area. The findings of that study are not at a scale that provides information specific to the Greater Bragg Creek area; therefore, no further attempts were made to use the data for the purposes of the RISA.

In summary, specific data gaps, with respect to water resources, were identified in the areas of surface water, groundwater and meteoric water (recharge).

Surface water data gaps include:

- Top of bank for surface water bodies;
- Flood risk area delineation;
- Surface water quality;
- Surface water quantity; and,
- Wetland delineation.

Groundwater data gaps include:

- Existing water well location updates;
- Water well aquifer characterization;
- Groundwater quality; and,
- Groundwater quantity.

Meteoric data gaps include:

- Recharge quantity.

5. SENSITIVITY ANALYSIS

Essentially there are two layers that were used to create fields of values for comparison: AVI and Slope. Soil composition (AGRASID) is also included in the database for future use by the MD Geomatics group. The RISA technical committee has identified that cumulative impacts of development on the water and land resources in the area is a significant consideration in planning and proposed new developments. Cumulative impacts are observed as effects that development may have on other environmental parameters. For example, the clearing of forest materials on steep slopes may have manageable site specific impacts; however, the impact of increased erosion, decreased water holding capacity, increased runoff and fragmentation of wildlife habitat may cumulatively pose serious environmental impacts. The RISA technical committee suggests that the MD consider the potential cumulative impacts of all new developments within the policy areas.

5.1 RIPARIAN POLICY

The results of a literature review and the corresponding summary recommendations with respect to riparian areas are appended (Appendix I). The riparian policy demonstrates that a minimum development setback is 30 m from the top of bank on all surface water bodies, with the exception of the Elbow River, which is to have a 50 m setback, supports the preservation of riparian integrity and ecosystem functions. This policy is based on and supported by similar legislation in other municipalities. The riparian policy recommends that no development is to occur within the riparian area defined by the buffer widths described in Appendix I. The aerial extents within the Bragg Creek policy areas proposed to be protected by the riparian policy (Figure 2) are summarized in Table 1. The results show that the aerial extents of riparian buffers cover approximately 7.1 km². In addition to surface water bodies, the RISA technical committee considers wetlands to be an important component of a properly functioning ecosystem.

Wetland conservation provides important habitat for wildlife including migratory and resident birds, mammals, invertebrates and amphibians. In addition, wetlands are a natural physical and chemical filter of overland flow. Contaminants and sediments carried in overland flow are intercepted and purified by the vegetation and sediments that characterize wetlands. For the purposes of this report, areas classified by AVI as wet moisture regime are considered wetlands. Given the available data, the delineation of areas of wet moisture regime is provided as a best approximation of the actual wetland areas within the Bragg Creek policy areas. No groundtruthing has been conducted to confirm the extents of these areas and the RISA technical committee proposes that site specific investigations to determine the extent of wetlands should be carried out by a qualified environmental professional for any proposed development that encroaches on an identified wetland (Figure 3). Wetlands are commonly classified using broad terminology such as marsh, swamp, bog and fen.

The assessment of wetlands should consider the following principles:



- Wetlands are periodically flooded and may experience prolonged dry periods
- Wetlands are characterized by plants that require saturated soils and are adapted for wet conditions
- Wetlands are underlain by hydric soils which may be mixed with organic material
- There are seven wetland types recognized by the Canadian Wildlife Service: wet meadow, shallow marsh, emergent deep marsh, transitional open water, shallow open water, open alkali and disturbed wetland (Millar, 1976). The Canadian Wildlife Service published the Wetland classification in western Canada (Millar, 1976) which contains a classification methodology and field form template which may provide a suitable reference for the site specific inspection of proposed developments adjacent to wetland areas. The results of site specific investigations may increase or decrease the extent of the wetlands within the study area. The aerial extents of the mapped wetlands provide an additional 5.5 km² of protected areas and are important components of the connectivity of the riparian areas (Figure 3).

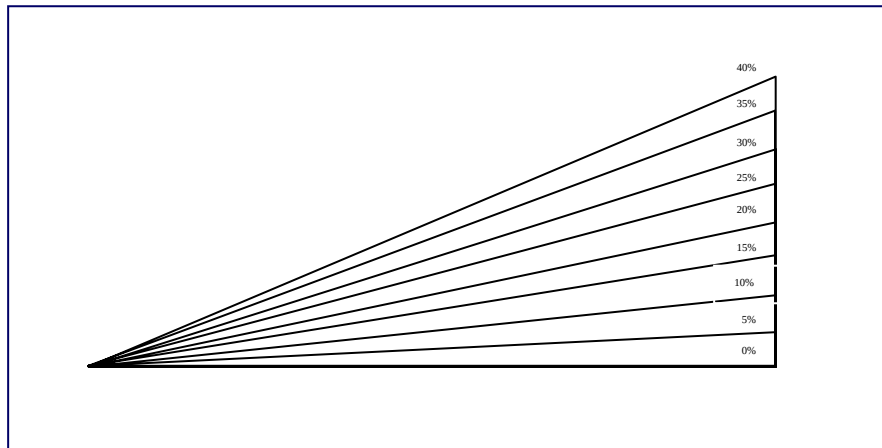
5.2 SLOPE

5.2.1 Basis for classifying "Slope" with regard to Development limitation potential (SlpDevelop)

A TIN generated from elevation data provided by the CRP and the MD was used to create a slope layer (Figure 4). Break points for each class were based the on MD Planning guideline (15% slope cut-off) and even distribution of remaining values.

Class	Description
Excluded	All slopes $\geq$ 15%
High	Slopes 10 - 14% inclusive
Medium	Slopes 5 - 9% inclusive
Low	Slopes 0 - 4% inclusive

The diagram below provides a conceptual view of slope angles from horizontal.



The results of the slope classification procedure (Table 2, Figure 5) described above show that approximately 26% of the policy area is classified as excluded based on an existing MD planning and development standards ($\geq 15\%$ slope). This standard specifies that development plans must show an area of at least one contiguous acre (approximately 4,000 m²) of developable land ($\leq 15\%$ slope) for the provision of an adequate tank and tile septic field. The largest proportion (43%) of the policy area is classified as low slope (0 - 4% inclusive), of which approximately 25% (12.33 km²) is classified as 0% slope. Of the remaining area, 12% of lands are classified high slope (10 - 14% inclusive) and 18% are classified as medium slope (5 - 9% inclusive). The maximum slope within the policy area is 128% covering an area approximately 0.002% of lands.

5.3 FOREST COMPOSITION

5.3.1 Basis for classifying "AVI" with regard to species composition (Class)

AVI stand composition was used to classify pure and mixed-wood stands. This classification scheme establishes a method for assessing the present (2001) forest stand composition within the policy area.

Class:

1. Pure Spruce ($> 80\%$)
2. Pure Pine ($> 80\%$)
3. Pure Hardwood ($> 80\%$)
4. Mixed - Spruce leading Hardwood
5. Mixed - Pine leading Hardwood
6. Mixed - Hardwood leading Spruce or Pine
7. Non-forested

8. Mixed softwood - Spruce leading Pine
9. Mixed softwood - Pine leading Spruce

The AVI classification system uses a crown closure method for estimating dominant, or leading, and less dominant, or secondary, tree species. The method involves measurement of percent canopy closure for each tree species observed by a person on the ground using a mirrored instrument divided into a grid. The AVI system has developed a supervised, or groundtruthed, classification scheme that now allows them to estimate crown closure through spectral response from remotely sensed images.

There are five leading tree species within the policy areas (Trembling Aspen, White Birch, Balsam Poplar, undifferentiated Pine, and White Spruce) and five secondary tree species (Lodgepole Pine, Trembling Aspen, Balsam Poplar, undifferentiated Pine and White Spruce). It is the view of the RISA technical committee that an adequate assessment of the forest cover is provided by summarizing the various tree species into hardwood and softwood cover types. The hardwood tree species include Trembling Aspen, White Birch, and Balsam Poplar. The softwood tree species include White Spruce, Lodgepole Pine and undifferentiated Pine.

The results of the forest composition analysis (Table 3, Figure 6) described above show that approximately 26% of the policy area is non-forested. Of the remaining 74% of the policy area, the largest proportion (34%) is classified as pure hardwood, based on the classification scheme outlined above. Approximately 4% of the policy area is comprised of pure Pine forest and 13% is considered pure Spruce. The remaining areas are mixed-wood forests with varying dominant species.

With respect to balancing habitat conservation objectives and future land development goals, the RISA technical committee is guided by the principle of preserving the abundance of various forest and non-forest cover types within the historic range of natural variability. The RISA technical committee recognizes that appropriate variances in the area and age class composition of the major plant communities in the region provide a useful surrogate in ensuring a full suite of biota (both plant and wildlife species) is maintained. This approach is further supported by the lack of distribution and abundance maps for regional biota. In the absence of wildlife data, maintenance of the area and connectivity of the existing habitat types is the most conservative and appropriate method of protecting wildlife resources. Using stochastic disturbance (fire) models imposed on the current (2001) forest composition the RISA technical committee has developed an approximation of the range of natural variability. The range of natural variability is a measure that the RISA technical committee proposes to guide planners and developers on levels of acceptable deforestation that is within the range of what statistically would be observed if the area were permitted to undergo variation caused by natural disturbance regimes. Assessment of the range of natural variability aims to quantify the aerial range of deforestation that would be observed by natural processes and disturbance mechanisms.



While a range of abundance of habitat is an important numerical quantification of the landscape, the fragmentation of the habitat is equally important but beyond the scope of this investigation. A fragmentation analysis is a spatial quantification of the landscape. Using the GIS data available to the MD and given the boundaries of proposed new developments, it is possible to track through time the connectivity of the landscape. Further investigation into the limits of the landscape metrics for this application would be required.

While the riparian policy provides connected riparian habitat, these areas are not the exclusive habitat of all wildlife in the area. The RISA technical committee acknowledges that further work may be required on a site specific basis to ensure the preservation of connectivity of upland forested areas. The results of the range of natural variability analysis suggest that the abundance of any one cover type should range between a factor of 0.5 and 2.0 times the current conditions. This range amounts to the preservation of no less than half of the current abundance of each forest cover type and suggests that the abundance of any single cover type to more than double the current conditions is beyond the range of natural variability. The methods, principles and results of the ALCES disturbance modelling performed by Dr. Brad Stelfox are appended (Appendix II).

6. RECOMMENDATIONS

6.1 RESOURCE INVENTORY

The data gaps that exist with respect to groundwater and surface water quality and quantity within the Greater Bragg Creek policy area are the most significant concern presented by the RISA technical committee.

Groundwater is an important resource from an environmental perspective, in addition to being an important source for residential and stock water in the area. Precipitation and infiltration causes water to move through the subsurface geology to recharge aquifers, which in turn provide a recharge source for surface water bodies. Following the water cycle, contamination at the precipitation stage and especially through the groundwater stage leads to impact downstream. Without consideration to surface vegetation, contaminated precipitation, such as acid rain, can be effectively filtered through natural mechanisms during flow through appropriate hydrogeologic substrates. Examples of such filtration mechanisms are adsorption to geologic media and biologic digestion by soil organisms. Contamination to groundwater may be effectively filtered before it reaches a surface water or groundwater user, depending on the nature of the contaminant, substrate and the distance between the contaminant source and these outputs. The risk to users of groundwater and surface water increases inversely with the distance from contaminant source.

For the purposes of developing an inventory of available resources in the Bragg Creek policy area, and due to the limited and incomplete data available, it is the opinion of the technical committee that water is the most limiting resource in the area. While the area of the Hamlet is expected to be provisioned with water services, the majority of residents in other policy areas rely on groundwater for domestic and stock use. If the aim of the MD is to continue to permit residential development in the area, water resources and stresses thereof are baseline data that will assist in determining the long term sustainability of such development. While the jurisdiction of groundwater resources lies with Alberta Environment, the limited knowledge of groundwater resources with respect to the ability of the area to support further development is identified as a significant concern. It is well established in the preparation of risk matrices that where there is little known about a contributing factor, the highest risk should be assigned. In this instance, that contributing factor is water.

The committee suggests that the MD, in partnership with Alberta Environment and other local associations undertake a groundwater resource investigation and follow through with a sensitivity analysis based on the results of the investigation. As a first step, the RISA technical committee recommends that a qualified hydrogeological consultant re-examine a subset of the data used by HCL that is specific to the Greater Bragg Creek area to try to determine the groundwater quantity and quality, the different aquifers that are used to produce domestic water and the aerial extent of those

aquifers. This could be done by using the existing Alberta Environment database along with a small sample of groundtruthing.

The RISA technical committee also recommends that the MD establish a database for all future drilling. This database would contain detailed information about the lithology encountered while drilling, producing depth and lithology, analytical water quality and water quantity as demonstrated by flow rates from a proper pump test.

Groundwater is a finite resource which needs to be quantified, especially in areas such as West Bragg Creek which are likely not to be included on a municipal water system.

It is the view of the committee that permitted development within the policy area can be impacted by the availability of good quality water and a long term approach to the water budget within the area is a prudent objective for the MD. This inventory is also critical with respect to maintaining base flow conditions in the Elbow River and Bragg Creek which potentially impacts regional fisheries, important wetland and migratory bird habitat and downstream uses such as Redwood Meadows, Springbank and ultimately the City of Calgary.

6.2 SENSITIVITY ANALYSIS

6.2.1 Riparian Policy

The RISA technical committee recommends that the ultimate riparian buffer width on all surface water bodies and wetlands will not be less than the specified 30 and 50 m in width, as outlined in Appendix I. Riparian buffer adjustments above this standard width will be determined on a site-specific basis. A policy amendment is recommended whereby any proposed development activity, having potential to disturb an existing wetland or riparian areas be subject to a development permit application and review by the Municipal District and Alberta Environment to prevent degradation of existing water bodies.

6.2.2 Slope

The RISA technical committee has no recommendations with respect to slope beyond the existing planning and development standards that the MD has in place that limits development on steep slopes. It is the view of the RISA technical committee that this protocol is sufficient to prevent development on slopes of greater susceptibility to instability and deleterious environmental impacts.

6.2.3 Forest Composition

Range of natural variability

The RISA technical committee recommends the creation of a planning policy for the Bragg Creek policy area whereby the forest composition will be maintained within the range of natural

variability as outlined in Appendix II. A tally of the reduction in forest cover, by type, should be maintained as new development proposals are reviewed to ensure the abundance is within the range outlined by the RISA technical committee. This function requires that the Geomatics department at the MD, or a consultant, maintain updated GIS records of all deforestation activities within the policy area. Updated forest composition analysis will be required as new AVI data are made available by Alberta Forestry and an assessment should be undertaken to determine the maintenance of forest cover within that range over time. A future comparison between the tally maintained within the GIS and that quantified by updated AVI will indicate the success and reliability of this methodology.

7. CONCLUSIONS

The results of the resource inventory show that there are significant limitations in data completeness with respect to water availability and quality, especially in the West Bragg Creek policy area. As all developments will be dependent on good sources of water, and without a prospective servicing arrangement for this policy area, it is prudent that the MD acquire better information about this important resource.

The sensitivity analysis reveals a need for preserving connectivity of undisturbed areas, especially proximal to water bodies, which can serve a dual purpose of improving and maintaining high quality water recharge to surface water bodies and providing wildlife corridors.

The range of natural variability of forest composition has been demonstrated. A conservative approach to landscape management shows there is a need to maintain the forest composition of the policy area within a range of a factor of 0.5 to 2.0 times the current conditions. Updated forest composition data can be obtained from Alberta Forestry as they become available and updated forest composition analyses should be procured.

8. REFERENCES

Millar, J. B. 1976. *Wetland classification in western Canada*. Canadian Wildlife Service Report Series Number 37.

Municipal District of Rocky View. 2003. *Economic Development Strategy*.

Natural Resources Canada. *Geogratis*. Retrieved August 27, 2004 from <http://geogratis.cgdi.gc.ca/clf/en>

9. CLOSURE

This report has been prepared by Alpine, for the exclusive use of the Municipal District of Rocky View, No. 44, using generally accepted spatial analysis techniques and principles. Information was obtained while conducting an authorized investigation on the Greater Bragg Creek area in southwestern Alberta.

The material contained in this report reflects the RISA technical committees' best judgement in light of the information available at the time of preparation. The RISA technical committee has relied upon the representations or opinions of persons contacted during the preparation of this report. The accuracy of these representations and opinions will affect the accuracy of this report.

Any use which a third party makes of this report or any reliance on, or decisions to be based on this report, are the responsibility of such third parties. The RISA technical committee and Alpine accept no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

ALPINE ENVIRONMENTAL LTD.

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Chief Ecologist



**TABLE 1: AERIAL EXTENTS OF THE RIPARIAN POLICY
MUNICIPAL DISTRICT OF ROCKYVIEW - BRAGG CREEK POLICY AREA**

Class	Riparian Buffer Width	Area (km²)	Percent of total area ^a (%)
Riparian area (wetland buffer)	30 m	2.48	5.20%
Riparian area (surface water buffer)	30 m	3.62	7.59%
Riparian area (Elbow River buffer)	50 m	1.03	2.17%
Wetland area		5.54	11.62%

Notes:

Source - AVI September 2001

^a - Total area 47.69 km²

TABLE 2: SLOPE
MUNICIPAL DISTRICT OF ROCKYVIEW - BRAGG CREEK POLICY AREA

Class	Slope Range	Area (km²)	Percent of total area ^a (%)
Excluded	³ 15%	12.72	26.66%
High	10 - 14% inclusive	5.85	12.27%
Medium	5 - 9% inclusive	8.58	17.99%
Low	0 - 4% inclusive	20.55	43.08%

Notes:

Source - AVI September 2001

^a - Total area 47.69 km²

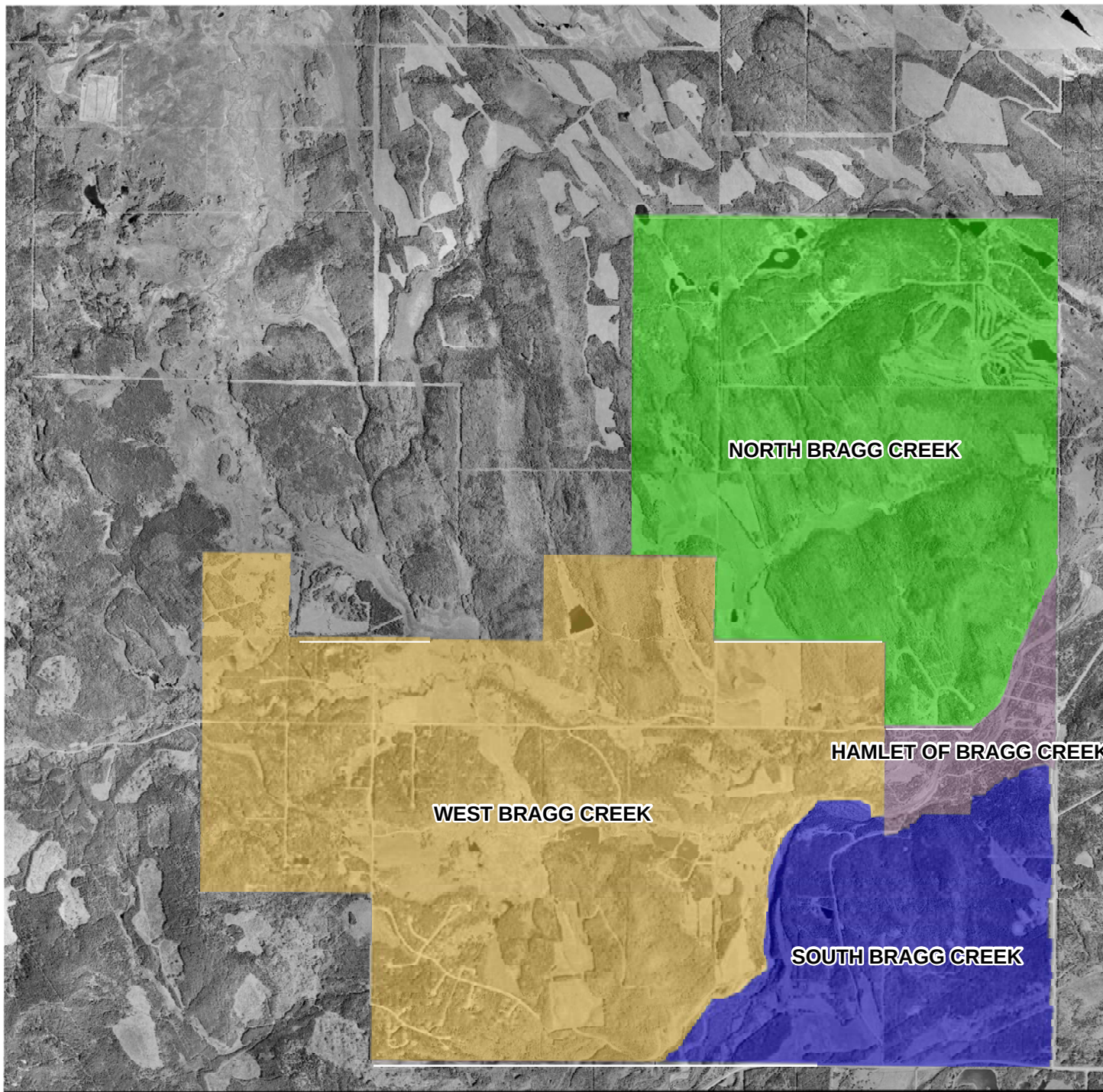
**TABLE 3: FOREST COMPOSITION AND PROPOSED RANGE OF NATURAL VARIABILITY LIMITS
MUNICIPAL DISTRICT OF ROCKYVIEW - BRAGG CREEK POLICY AREA**

Class	Area (2001) (km ²)	Percent of total area (2001) ^a (%)	Low limit (0.5) percent of		High limit (2.0) percent of	
			Low limit (0.5) total area (km ²)	total area ^a (%)	High limit (2.0) total area (km ²)	total area ^a (%)
Pure Hardwood	16.61	34.82%	8.30	17.41%	33.21	69.65%
Pure Pine	1.84	3.87%	0.92	1.93%	3.69	7.74%
Pure Spruce	6.19	12.98%	3.10	6.49%	12.38	25.97%
Mixed - Hardwood leading Spruce or Pine	2.10	4.41%	1.05	2.21%	4.21	8.82%
Mixed - Pine leading Spruce	2.87	6.01%	1.43	3.00%	5.73	12.02%
Mixed - Spruce leading Pine	4.15	8.70%	2.07	4.35%	8.30	17.40%
Mixed - Pine leading hardwood	0.70	1.47%	0.35	0.73%	1.40	2.93%
Mixed - Spruce leading hardwood	0.83	1.74%	0.42	0.87%	1.66	3.48%
Non-forested	12.41	26.01%	6.20	13.01%	24.81	52.03%

Notes:

Source - AVI September 2001

^a - Total area 47.69 km²



LEGEND

- HAMLET OF BRAGG CREEK
- NORTH BRAGG CREEK
- SOUTH BRAGG CREEK
- WEST BRAGG CREEK

0 0.25 0.5 1 Kilometers
1:55,000

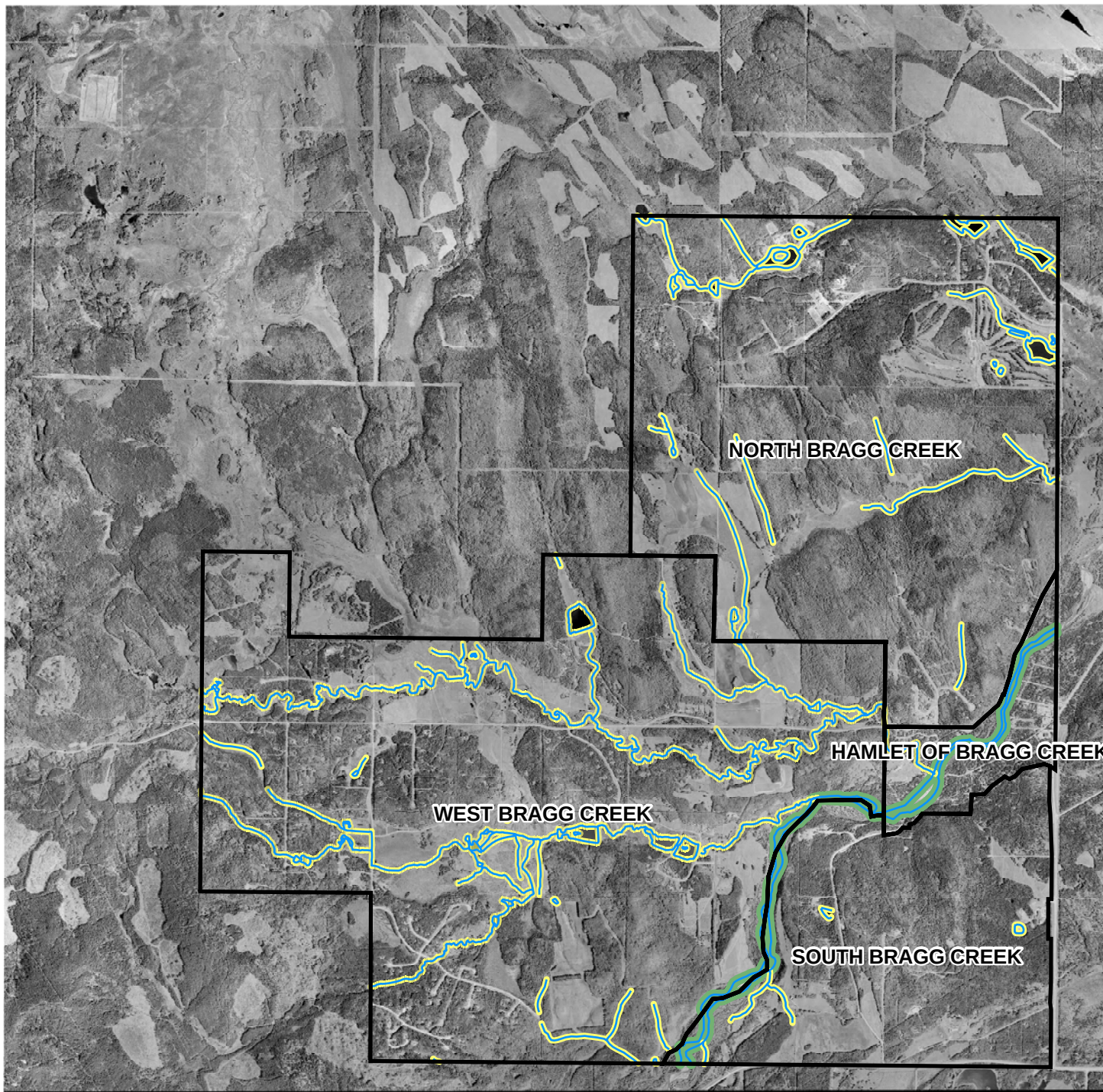


BRAGG CREEK POLICY AREA

NADES STM CM-114
December 16, 2004
RDGP
Note: This figure was compiled from information available at the time of preparation.
This information is believed to provide a reasonable representation of existing features within the
Bragg Creek Policy Area of the Municipal District of Rocky View.

Figure Number

1



LEGEND

	Bragg Creek Policy Areas	Riparian Buffer
	Surface Water	 Elbow River (50 m)
		 Surface Water (30 m)

0 0.25 0.5 1 Kilometers
1:55,000



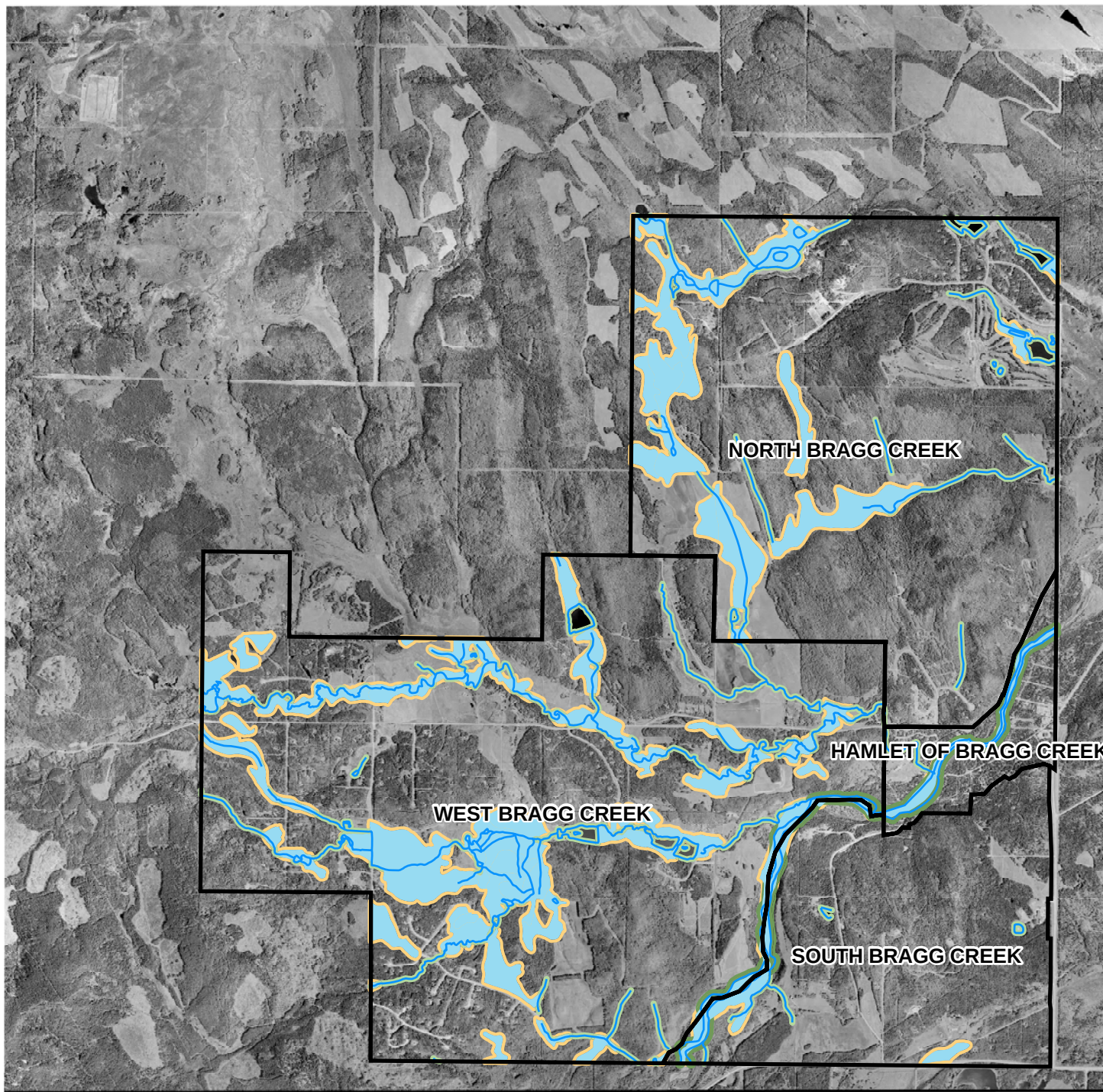
SURFACE WATER BODIES AND RIPARIAN POLICY

Note: This figure was compiled from information available at the time of preparation. This information is believed to provide a reasonable representation of existing features within the Bragg Creek Policy Area of the Municipal District of Rocky View.

NADES STM CM-114
December 16, 2004
RDGP

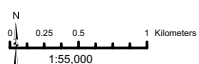
Figure Number

2



LEGEND

	Bragg Creek Policy Areas	Riparian Buffer
	Surface Water	 Elbow River (50 m)
	Wetlands	 Surface Water (30 m)
		 Wetland (30 m)



SURFACE WATER BODIES, RIPARIAN POLICY AND AREAS OF WET MOISTURE REGIME

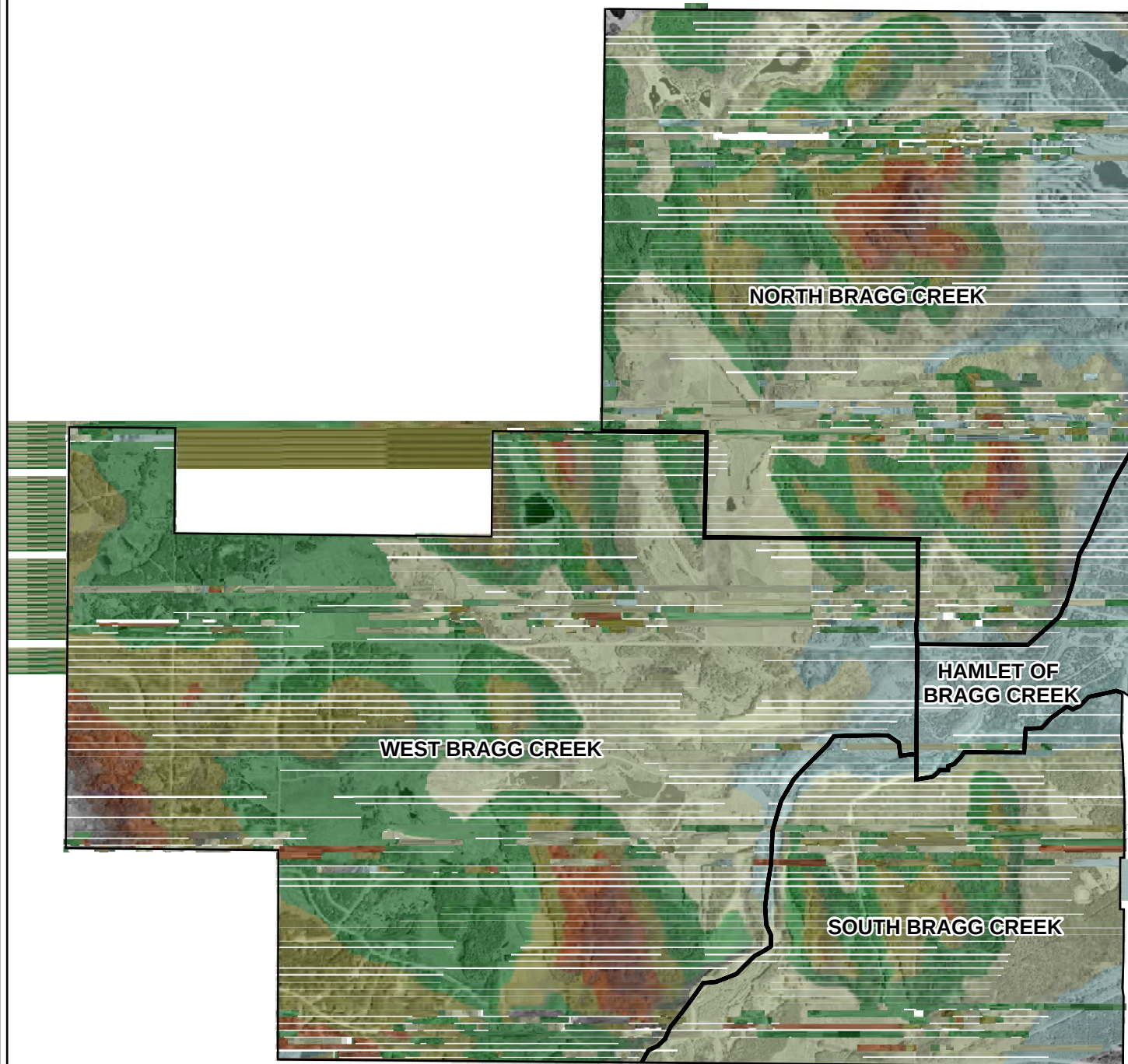


Note: This figure was compiled from information available at the time of preparation. This information is believed to provide a reasonable representation of existing features within the Bragg Creek Policy Area of the Municipal District of Rocky View.

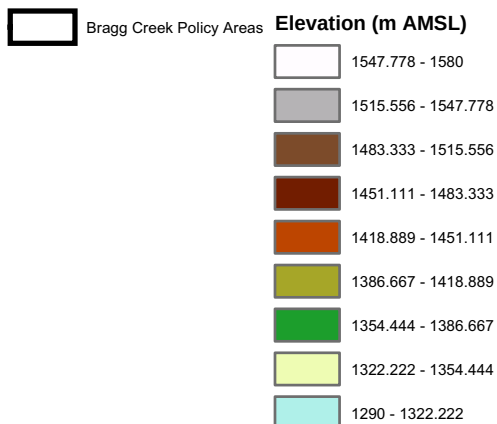
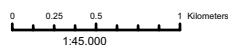
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December 16, 2004
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Figure Number

3



LEGEND



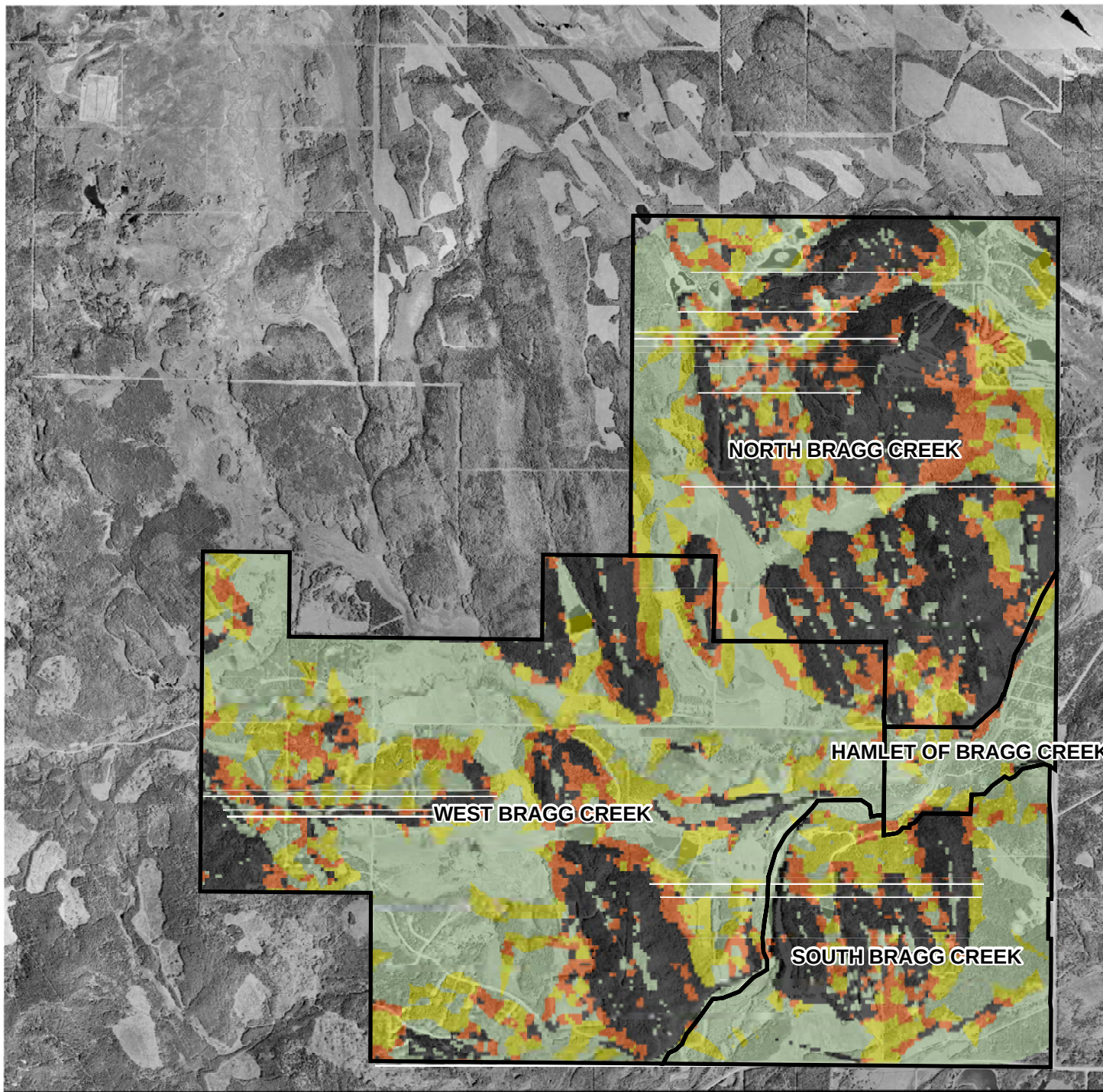
ELEVATION DEPICTED BY
TRIANGULATED IRREGULAR NETWORK

Note: This figure was compiled from information available at the time of preparation. This information is believed to provide a reasonable representation of existing features within the Bragg Creek Policy Area of the Municipal District of Rocky View.

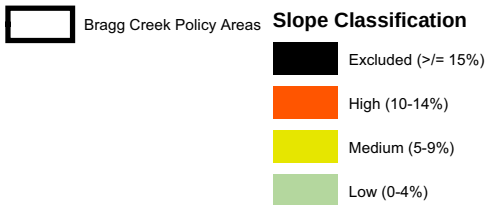
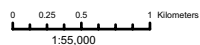
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December 16, 2004
RCCP

Figure Number

4



LEGEND



SLOPE CLASSIFICATION

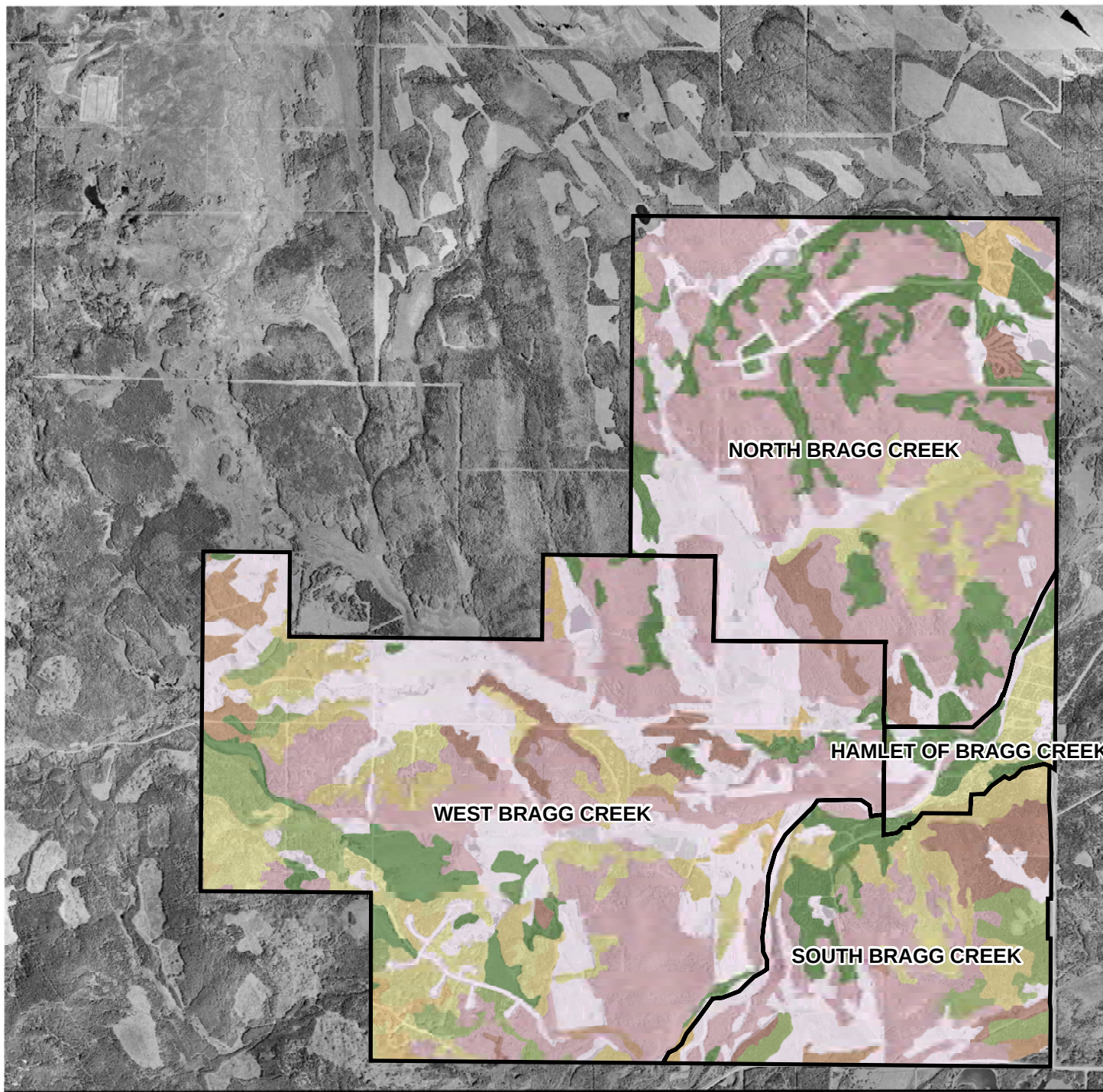


Note: This figure was compiled from information available at the time of preparation. This information is believed to provide a reasonable representation of existing features within the Bragg Creek Policy Area of the Municipal District of Rocky View.

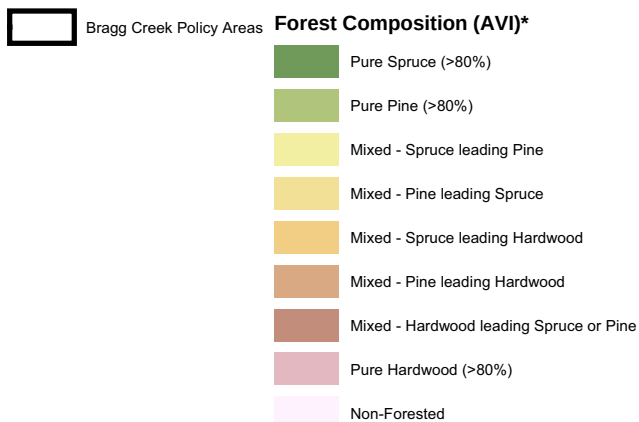
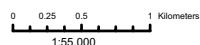
NAD83 STM CM-114
 December 16, 2004
 RDGP

Figure Number

5



LEGEND



FOREST COMPOSITION

* Represents distribution based on September, 2001
Alberta Vegetation Inventory (AVI) data



Note: This figure was compiled from information available at the time of preparation.
This information is believed to provide a reasonable representation of existing features within the
Bragg Creek Policy Area of the Municipal District of Rocky View.

NADES STM CM-114
December 16, 2004
RDGP

Figure Number

6

Report Conditions

GENERAL CONDITIONS

The material contained in this report reflects Alpine's best judgement in light of the information available at the time of assessment and report preparation. Alpine may have also relied on information provided by third parties for the preparation of this report. The accuracy of this report is affected by the accuracy of this information.

The reported information is believed to provide a reasonable representation of the general environmental conditions in the areas assessed. The data presented was collected at specific locations and the conditions may be different in other locations where specific information was not collected. Findings outlined in this report cannot and should not be extrapolated to areas of the site or other sites that were not specifically investigated. In addition, only those parameters specifically addressed in this report have been evaluated.

The assessment, conclusions and recommendations provided in this report are intended for the sole use of Alpine's client. Alpine is prepared to provide a one time project specific use "Letter of Reliance" to a third party at the written request of Alpine's client. When the information in this report is used or relied upon by any party other than Alpine's client, Alpine does not accept any responsibility for the accuracy of any of the data, the analysis or the recommendations contained or referenced in the report, unless otherwise authorized in writing by Alpine. Any unauthorized use of this report is at the sole risk of the user.

LIMITATIONS OF REPORT

This report pertains to a specific scope of work and to a specific site, developments and adjacent land use as outlined in the report. The conclusions and recommendations set out in this report are based on specific observations, assessments and testing completed on the site.

The report is applicable for developments and land uses present during the assessment of the site. Any variation from the identified site conditions or developments and land use could necessitate additional investigation and assessment.

It should be recognized that conditions may vary across the site and with changes in seasons and these variations could affect the conclusions and recommendations made in this report. The findings, conclusions and recommendations contained in this report are time sensitive.

Alpine is not qualified to make and it is not making any recommendations with respect to the purchase, sale,

investment or development of the property. These decisions are the sole responsibility of the client.

THIRD PARTY INFORMATION

During the performance of the work and the preparation of this report, Alpine may have relied on information provided by persons other than the client. While Alpine endeavours to verify the accuracy of such information when instructed to do so by the client, Alpine accepts no responsibility for the accuracy or the reliability of such information which may affect the conclusion reached in the report.

STANDARD OF CARE

Services performed by Alpine for this project have been conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided. Technical judgement has been applied in developing the conclusions and/or recommendations provided in this report. No other warranty or guarantee, expressed or implied, is made concerning the test results, conclusions, recommendations, or any other portion of this report.

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Where Alpine submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables, the signed and sealed hard copy versions shall be considered final and legally binding. The hard copy versions submitted by Alpine shall be the original documents for record and working purposes, and, in the event of a dispute or discrepancies, the hard copy versions shall govern over the electronic versions.

The electronic reports and documents shall be used only and exactly as submitted by Alpine. Any corruption and change to the content and quality of the electronic reports and documents as a result of subsequent electronic re-transmission will be the sole responsibility of the party completing the re-transmission.

The electronic files submitted by Alpine have been prepared and submitted using specific software and hardware systems in Alpine's possession at the time of preparation and submission. While Alpine endeavours to stay current in the software used, there is no guarantee that the software will be the most recent versions available. Alpine makes no representation about the compatibility of these files with the client's current or future software and hardware systems.

