



R**CR**

Wintergreen Redevelopment Conceptual Scheme





Wintergreen Redevelopment Conceptual Scheme

Resorts of the Canadian Rockies

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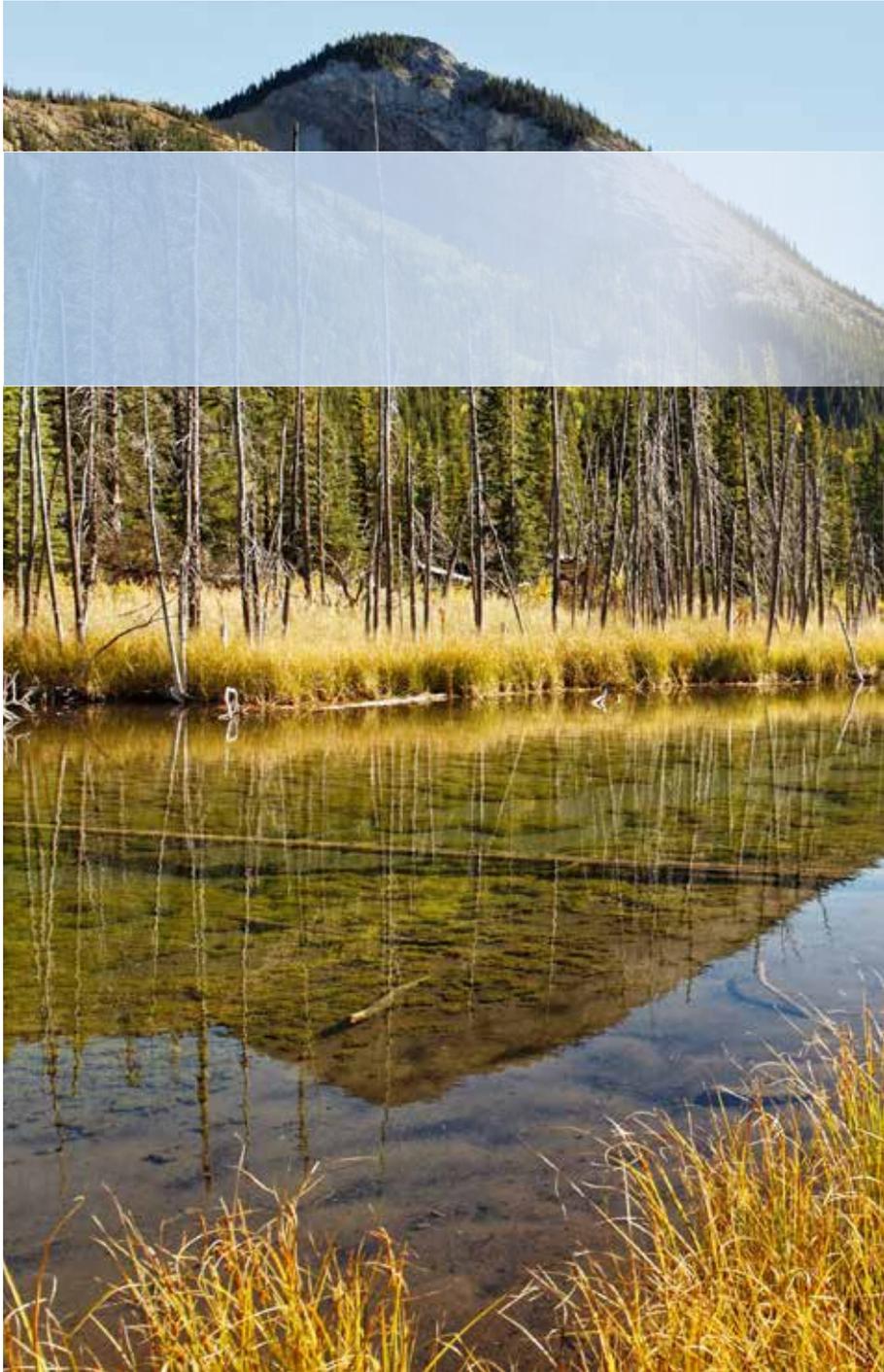


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1. INTRODUCTION

Purpose & Scope

Resorts of the Canadian Rockies (RCR) owns and operates the Wintergreen Golf & Country Club and the land that was formerly utilized as the Wintergreen Ski Hill. This conceptual scheme was prepared on behalf of RCR for these lands legally described as Block A, Plan 8310059. This conceptual scheme provides the framework for the development of a new comprehensive community on this site.

The intent of this conceptual scheme is to provide direction for subsequent land use redesignations and subdivisions for the lands and to produce a framework for redevelopment of the former ski hill. This framework considers and complements the existing Wintergreen Golf Course, the adjacent residential development, the Hamlet of Bragg Creek, and strives to preserve the character of the area.

This document fulfills all conceptual scheme requirements stated in the Greater Bragg Creek Area Structure Plan and is in line with the Rocky View County Plan. The lands are identified as a "New Residential Area" within the Greater Bragg Creek Area Structure Plan. This conceptual scheme provides a comprehensive vision for the site, a framework for development, and details around servicing, stormwater, and transportation networks.



2. GUIDING PRINCIPLES

The guiding principles for the Wintergreen redevelopment were generated using ideas from the greater community and values from the Resorts of the Canadian Rockies. These guiding principles have informed the form and style of the proposed community.

Create ample and diverse four season recreation opportunities

- Create a variety of active and passive recreational opportunities throughout the year accessible to the entire community
- Maintain and protect the golf course

Help revitalize Bragg Creek

- Bring new population to the area to enhance comprehensive community vitality
- Introduce commercial development in a village core that complements and not competes with existing Bragg Creek businesses

Support and enhance the existing community and site character

- Integrate natural and built environments with a focus on preservation
- Protect the existing wetland and incorporate potential interpretive opportunities
- Create a road network that works with the existing contours of the land and minimizes disruption
- Maintain and create spectacular view corridors and sight lines
- Honour dark-sky development

Capitalize on existing water servicing infrastructure

- Utilize local and regional water, wastewater and stormwater systems where feasible

Enhance community mobility

- Support or assist in improving new connections for multi-modal transportation networks with an eye to community safety
- Create conduits and desired destinations for people to come together

Respect the history of the land

- Ensure that previous users and uses are recognized and celebrated through the design concept and site identity development

Multi-generational community

- Ensure diversity in housing product, open space opportunities, commercial services, and recreational amenities
- Focus on aging in place opportunities

Architecture style that is unique to the site but conforms to the character of Bragg Creek

- Build on the existing mountain / rustic style in the tradition of a "Mountain Village" feel
- Use timber, stone, and other natural materials where possible



3. PUBLIC PARTICIPATION

The engagement in this process sought to share information and generate dialogue with a wide variety of stakeholders. The broader community, and those within or adjacent to the conceptual scheme boundary, were included in project discussions.

Early and throughout the engagement process key community stakeholders were asked to provide input and feedback on the project concept. These organizations and individuals included:

- Bragg Creek Community Association
- Bragg Creek Chamber of Commerce
- Greater Bragg Creek Trails Association
- Bragg Creek Environmental Coalition
- Bragg Creek Tennis Club
- Local Realtors

Join us for a BBQ and community discussion regarding the potential redevelopment of Wintergreen Ski Hill.

You're Invited!

➔ June 11 - 4:00, 5:30, 7:00pm

Wintergreen Clubhouse

Drop in for one of three sessions, where we'll share in some food and conversation around what the future of the Wintergreen Ski Hill could look like.

For further information, please contact Patrick Majer (RCR): 403.209.3598 | pmajer@skirccr.com

Please join us to review and discuss progress on the redevelopment of the former Wintergreen Ski Hill.

Continue the Conversation!

➔ March 31 - 3:00-8:00pm

Wintergreen Clubhouse

Drop in anytime between 3-8pm where we will share in some refreshments and conversation around the future of Wintergreen.

For further information, please contact Patrick Majer (RCR): 403.209.3598 | pmajer@skirccr.com





There were three open house sessions on June 11, 2014 with approximately 110 attendees. These sessions were advertised with a sign on the property and word of mouth through the community and was meant to gather information to understand the desires of the community. We generally heard:

- Include a toboggan hill and other winter amenities
- Improve cellular/internet access in the area
- Preservation of the natural surroundings
- Contribute to the economic development of the community
- Increase housing options for the area
- Mitigate light pollution
- Improve existing infrastructure
- Focus on year-round amenities and recreation opportunities
- Improve connectivity within community
- Try to “match” and consider transition of density to adjacent properties



A subsequent open house was held on March 31, 2015, with approximately 85 attendees. Advertisements were placed in the Rocky View Weekly, the project website, the project mailing list, social media (Facebook and Twitter) and Bold advertising sign was placed on the property. The purpose of this event was to show to the community the progress that was made on the development concept. We generally heard:

- Preserve the golf course
- Any commercial development should not compete with business in the Hamlet
- When will development start?
- Pedestrian routes are needed to connect with the Hamlet
- Wintergreen Road needs to be improved
- Avoid large retaining walls
- Avoid too much traffic on local roads
- The community needs opportunities for youth employment
- How will secondary egress be provided from West Bragg Creek?



4. SITE CONTEXT & ASSESSMENT

The subject lands are located approximately three kilometres north of the Hamlet of Bragg Creek along Wintergreen Road on the site of the former Wintergreen Ski Hill. The property consists of 156.05 hectares (385.61 acres) and contains infrastructure and buildings from the previous uses.

The site was formerly used as a ski hill, which was in operation from 1982 to 2003. The ski hill was originally named Lyon Mountain Ski Hill, but was renamed Wintergreen Ski Hill and was purchase by Resorts of the Canadian Rockies in 2001. Although most of the infrastructure that was tied to the ski hill use has been removed, some has been retained to maintain the operation of the Wintergreen Golf and Country Club.

a) Historical Impacts

A Historical Statement of Justification has been prepared for the plan area and has been cleared by Alberta Culture. Efforts shall be made to reference the area's history and historic character within the framework of the development through development signage, monumentation, street naming and other historical references.

b) Biophysical Impacts

A Biophysical Impact Assessment (BIA) has been prepared for the site. All recommendations and mitigation strategies pertaining to species of concern, habitat loss, and local and regional cumulative impacts shall be implemented wherever possible throughout the development.

c) Wildfire Risk Assessment

A Wildfire Risk Assessment has been prepared in order to evaluate the threat of wildfire to the development and provide FireSmart recommendations to reduce that threat. Development standards recommended in this report shall be incorporated into the development's design guidelines at the subdivision stage.

d) Geotechnical Analysis / Slope Stability Analysis

A geotechnical investigation and slope stability analysis was conducted for the lands to assess subsurface soil and groundwater conditions, and to provide comments and recommendations related to geotechnical aspects of a proposed development. Detailed slope stability analysis satisfactory to the County shall be completed at the subdivision stage.

e) Environmental Site Assessment

A Phase 1 Environmental Site Assessment has been completed to estimate the likelihood, location, and types of surface and/or subsurface contamination that may be present within the plan area. No further investigation or assessment is required.

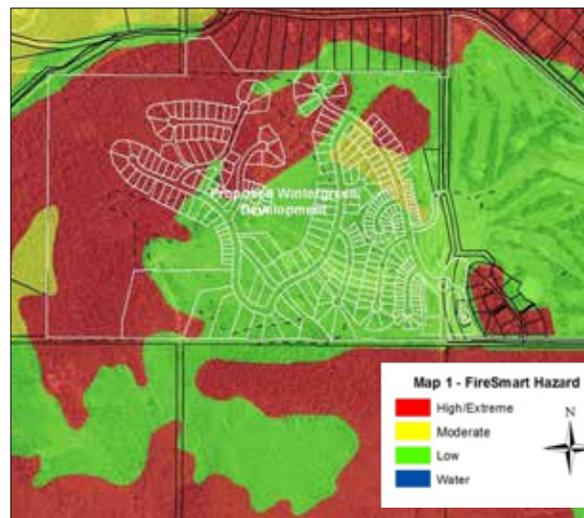


Figure 1: Wildfire Risk Assessment



Figure 2: Pre-Development

f) **Visual Impact Analysis**

A visual impact analysis has been completed to understand the visual impact on adjacent residents in both pre and post development scenarios. These scenarios are included in *Figures 2, 3 and 4*.



Figure 3: Post-Development

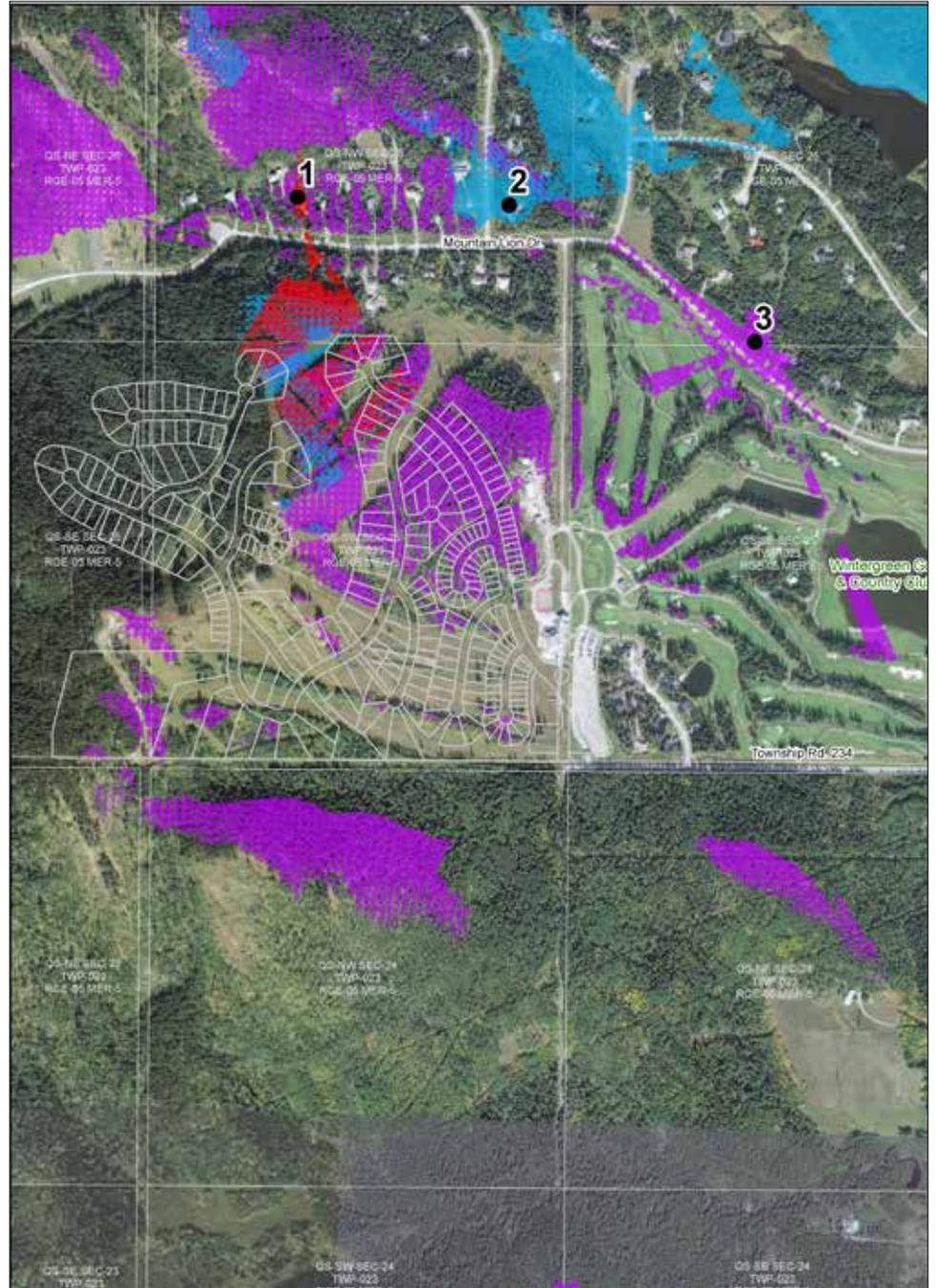


Figure 4: Visibility Analysis

■ Observation Point 1
 ■ Observation Point 2
 ■ Observation Point 3

Village Core Cell

This Village Core Cell will provide a village centre for the Wintergreen community, with a pedestrian focus and a careful combination of residential and commercial uses, services, and amenities that will jointly serve residents of the Wintergreen redevelopment site, the broader community of Bragg Creek, and recreational users.

- a) This area shall include neighbourhood-oriented commercial and residential development that complements the already established commercial centre in the Hamlet of Bragg Creek, the adjacent existing neighbourhoods, and the proposed development in the adjacent residential cell.
- b) The Village Core shall include significant public spaces and key amenities, such as a public plaza, trail connections, a hotel site, tennis courts and sports courts, creating opportunities for social gathering and community events.
- c) Design of this cell shall place emphasis on providing an engaging interface between commercial uses and the public realm, and ensuring a pedestrian-oriented environment.

Detail of Village Core Concept



Golf Cell

The existing golf course will remain entirely in its current form and location. Supportive uses (such as the pro-shop and restaurant) shall be developed and expanded sensitively to consider adjacent residents and other adjacent uses.

- a) The existing golf course shall be maintained as an 18+ hole course and continue current operations, with the addition of appropriate supporting and ancillary uses.
- b) Any complementary development shall consider both the needs of visitors and residents in its design and intended uses.



6. DEVELOPMENT CONCEPT

This figure shows the breakdown of the development concept. The following policies facilitate the realization of the vision:

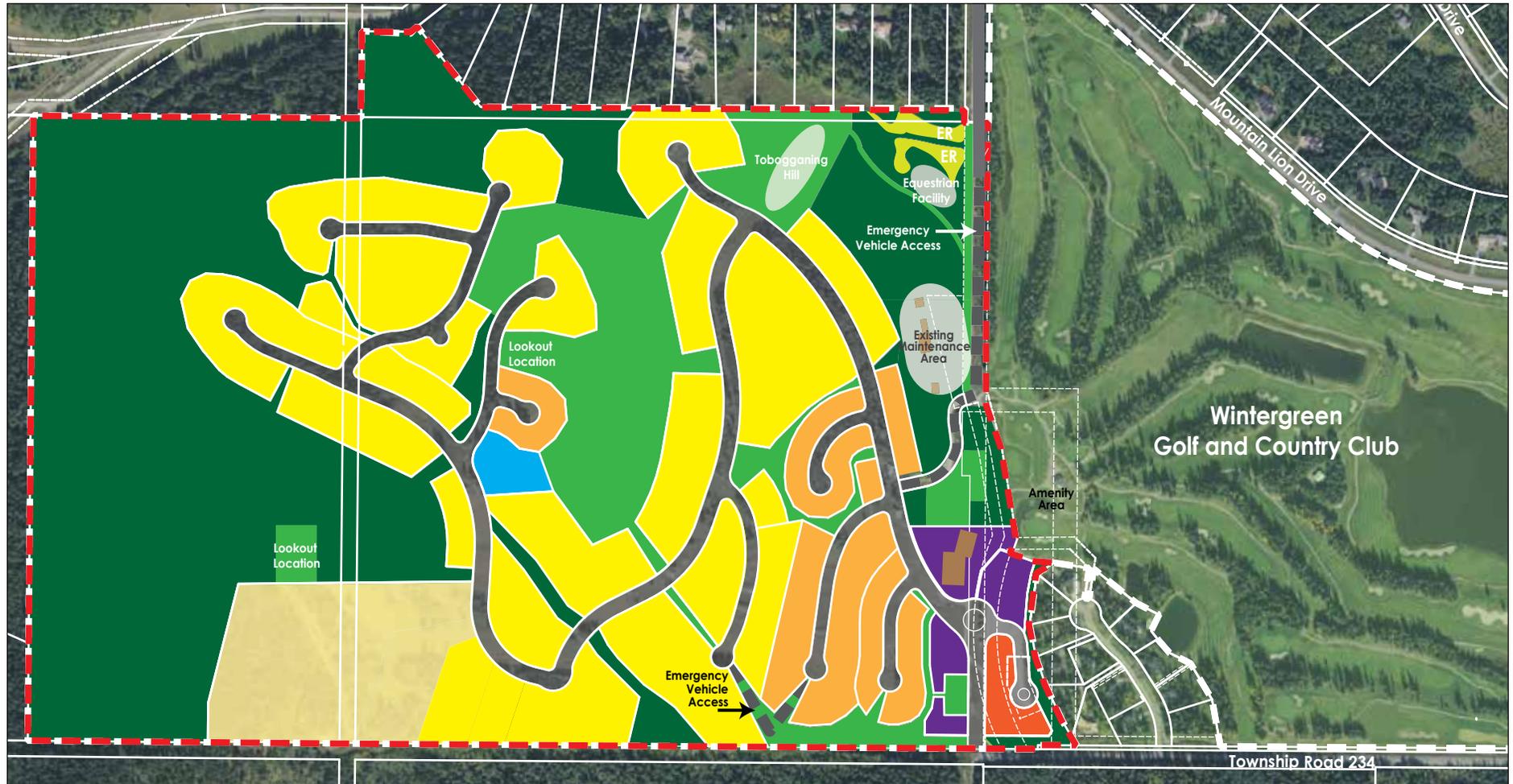


Figure 5: Development Concept

Key

- - - Study Area Boundary
- Large Lot Residential
- Multi-Family Residential
- Single Family Residential
- Hotel / Commercial (Existing clubhouse/lodge)
- Environmental Reserve
- Municipal Reserve
- Public Utility Lot
- Semi-Detached Residential
- Privately Owned Open Space
- Roads
- Emergency Vehicle Access

a) **Densities**

- i. Within the Residential and the Village Core Cells, there shall be no more than 300 residential units.
- ii. A maximum of twenty-four (24) residences shall be located within the village core cell and shall be developed as row-style housing.
- iii. Single family residential developments shall be located on parcels ranging from 0.10 ha (0.25 ac) to 0.81 ha (2.00 ac). Lot sizing shall consider the existing topography and tree coverage.
- iv. Semi-detached or villa-style residential shall be clustered to capitalize on views created by the topography of the site and shall be located on parcels 0.042 ha (0.09 ac) to 0.40 ha (1.00 ac) in size.
- v. Large lot residential parcels shall be no less than 1.21 ha (3.0 ac) in size.
- vi. A maximum of 929 m² (10,000 ft²) of commercial/retail space shall be located within the village core area.
- vii. A hotel located within the village core cell shall have a maximum of 100 guest rooms.



b) **Phasing**

- i. The site shall be developed in 8 phases as illustrated in *Figure 6 – Phasing Plan*.
- ii. Development phasing will be generally based on market demand or otherwise generally follow the phasing concept.
- iii. Public pathways, amenity areas, servicing and utilities including water, wastewater and stormwater management will be developed in phases corresponding to the development phases.
- iv. A small scale equestrian facility may be developed within Phase A as seen in *Figure 6 - Phasing Plan* and may proceed independent of the timing of other Phases.

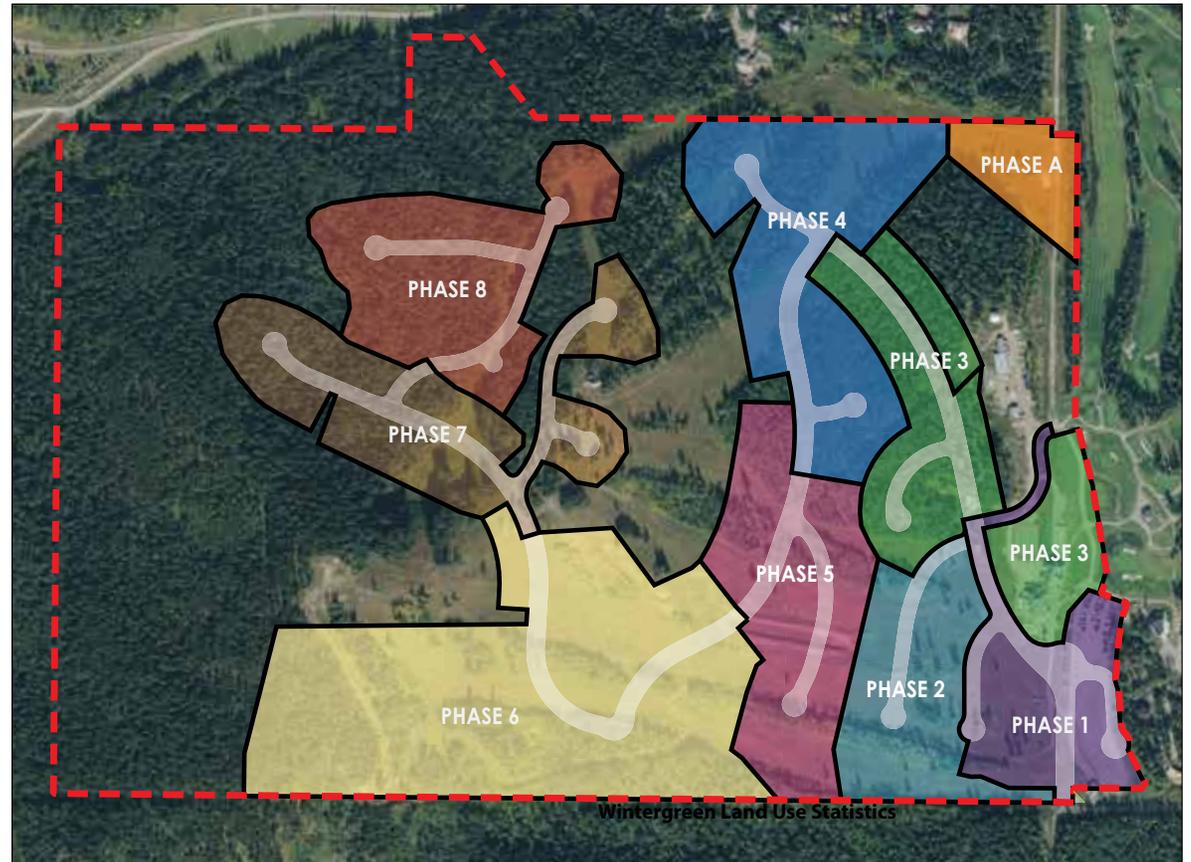


Figure 6: Phasing Plan

Wintergreen Land Use Statistics

| | Ha. | Ac. |
|---|---------------|---------------|
| TOTAL GROSS AREA | 156.05 | 385.61 |
| Less | | |
| Environmental Reserve | 0.44 | 1.09 |
| Golf Course | 52.73 | 130.30 |
| NET DEVELOPABLE AREA | 102.88 | 254.22 |
| 10% Municipal Reserve Owing | 10.29 | 25.42 |
| DEVELOPMENT CELL A | | |
| Single Family Residential - Large Lot | 6.07 | 15.00 |
| Single Family Residential | 27.06 | 16.87 |
| Semi-detached Residential | 5.80 | 14.33 |
| Municipal Reserve | 11.75 | 29.03 |
| Privately Owned Open Space (Homeowners Association) | 36.00 | 88.96 |
| Public Utility Lot | 0.59 | 1.46 |
| Roads - Collector - 22.0m | 3.67 | 9.07 |
| Roads - Residential - 17.5m | 3.68 | 9.09 |
| Roads - Emergency Vehicle Access | 0.46 | 1.14 |
| NET DEVELOPABLE AREA | 95.08 | 234.95 |
| DEVELOPMENT CELL B | | |
| Multi-Family Residential | 0.63 | 1.55 |
| Hotel/Commercial | 1.84 | 4.54 |
| Municipal Reserve | 0.84 | 2.08 |
| Privately Owned Open Space (Homeowners Association) | 2.69 | 6.65 |
| Roads - Collector - 22.0m | 1.02 | 2.52 |
| Roads - Residential - 17.5m | 0.25 | 0.62 |
| Roads - Emergency Vehicle Access | 0.53 | 1.31 |
| NET DEVELOPABLE AREA | 7.80 | 19.27 |
| DEVELOPMENT CELL C | | |
| Golf Course | 52.72 | 130.30 |

Table 1: Wintergreen Land Use Statistics

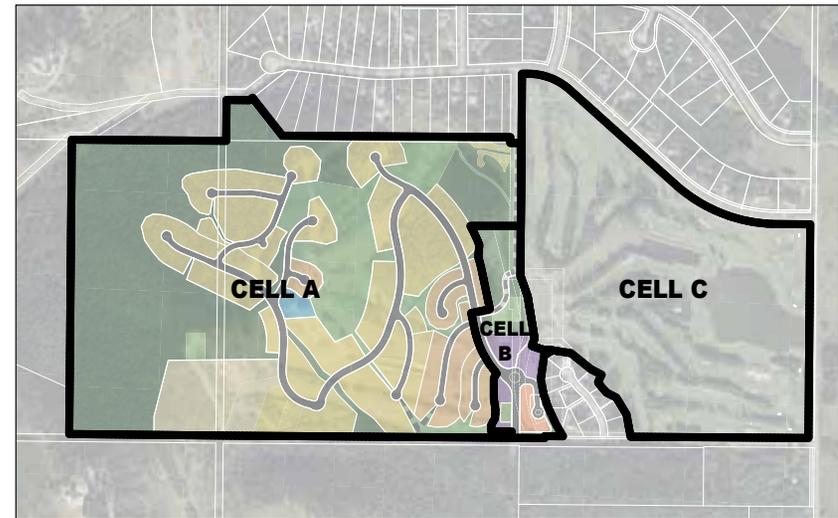


Figure 7 : Cell Boundaries

Integration

New amenities and features will ensure that the Wintergreen redevelopment contributes to the active lifestyle that the residents of the Bragg Creek community enjoy.

a) Open Space & Recreational Amenities

- i. Open space within the plan area that is not recognized as municipal/environmental reserve shall be owned and maintained by a Homeowner's Association and shall provide public access for all County residents.
- ii. Programmed open space shall be provided according to *Figure 8 - Open Space Network*.
- iii. A small scale equestrian facility may be located on the site in accordance with *Figure 8*.
- iv. Sports courts including an additional tennis court, volleyball and basketball courts may be located within municipal reserve in the village core area.
- v. A multi-use public plaza shall be located within the village core area. The plaza may function as a leisure skating rink in the winter and a children's splash park in the summer.
- vi. A toboggan hill shall be located within the site in accordance with *Figure 8 - Open Space Network*.
- vii. Cross-country skiing shall be permitted within portions of the golf course. A location and operations plan for cross-country skiing shall be submitted to the satisfaction of the County at the subdivision stage.

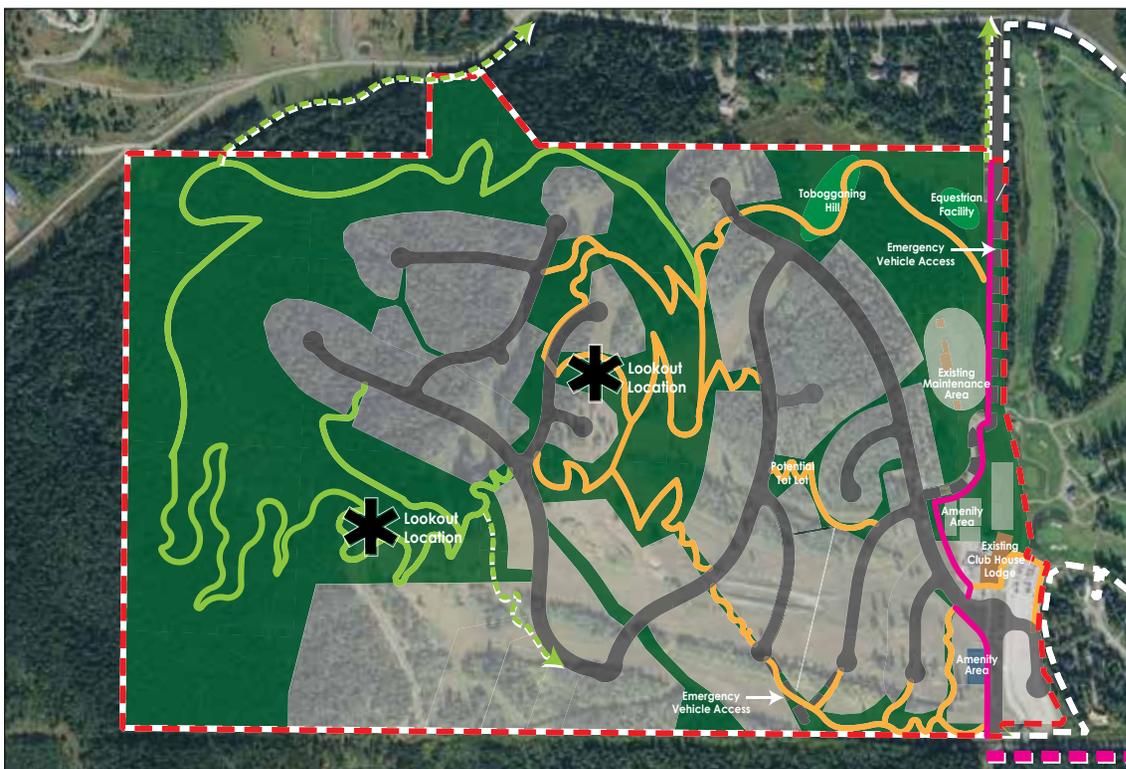


Figure 8: Open Space Network

b) Trail Network

- i. The internal trail network shall provide naturalized connections between all three development cells and significant community features.
- ii. Trails within the site shall be constructed by the developer as shown in *Figure 8 - Open Space Network*, taking into consideration the multiple active uses that they can support and should be designed according to Rocky View County standards.
- iii. Trail networks proposed shall be constructed to minimize impacts on the natural environment.
- iv. Natural Trails within the plan area shall be owned and maintained by a Homeowner's Association and shall provide public access for all County residents.



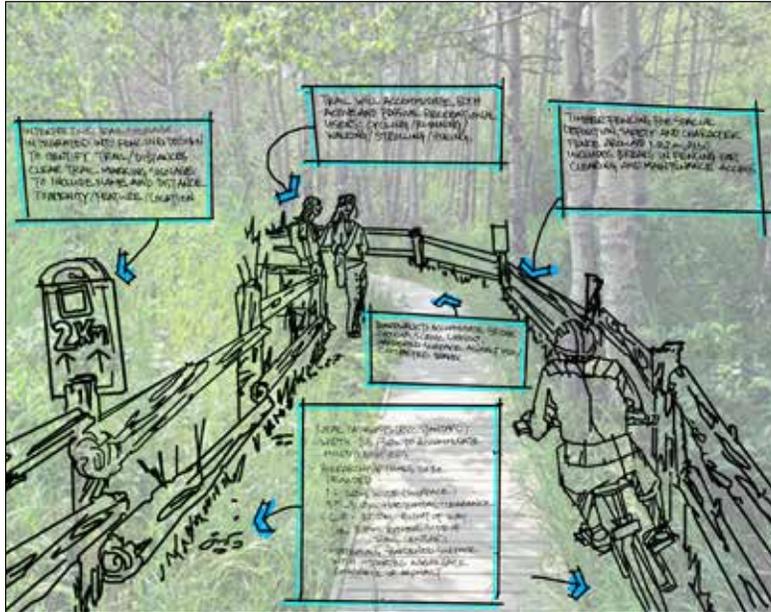


Image 3 - Trail Network

d) Road naming

- i. Road, trail, natural features, and significant infrastructure shall be named with reference to the previous users and uses of the site.
- ii. Site addressing should be indicated using municipal standard signage and also integrating FireSmart principles.
- iii. Road naming shall be completed to the County's satisfaction at the subdivision stage.

e) Dark sky

- i. Low impact lighting shall be incorporated to mitigate light pollution.
- ii. Flood lights, spot lights or any other large-area, high-intensity lighting is prohibited.
- iii. An outdoor lighting plan shall be completed to the satisfaction of the County at the subdivision stage, and shall demonstrate how the outdoor lighting meets the County's Dark Sky policy.

c) Landscaping

- i. Natural site characteristics such as rock outcrops, drainage courses, and mature stands of trees shall be integrated into the landscaping design.
- ii. The retention of existing desirable vegetation shall be a priority for landscaping.
- iii. Any retaining walls shall be terraced and landscaped to reduce visual impact.
- iv. Any new vegetation shall be used for slope stabilization, to minimize the impacts of runoff and should reinforce the natural beauty of the site.



Image 4 - Lookout Location



Style (Form & Function) – Architectural Guidelines

Appropriate development standards ensure that the unique character of Bragg Creek is maintained. The visual aesthetic of the Wintergreen redevelopment is described in the policy and depicted in the following imagery.

Architectural Guidelines

- a) Architectural Guidelines that ensure a consistent standard of design and encourage a mountain-village aesthetic that is compatible with the larger Bragg Creek community shall be prepared to the County's satisfaction at the subdivision stage.
- b) The Architectural Guidelines shall be enforced by the Developer until the enforcement of these controls is transferred to the Homeowner's Association.
- c) Building design shall consider and attempt to integrate into the natural setting considering the natural slope and vegetation on-site.
- d) The use of natural materials, particularly wood and stone, shall be incorporated into the design of the buildings.
- e) Buildings in the Village Core shall be designed to incorporate Crime Prevention Through Environmental Design (CPTED) principles.

Hillside Development Standards

- a) Buildings shall be oriented to run parallel with natural site contours to reduce the need for site grading and to avoid high wall facades on the downhill elevation.
- b) Building placement shall consider the impact on views for both uphill and downhill uses and users.
- c) Yards shall be maintained in a natural slope condition.
- d) Landscaping shall be used to ensure cuts and fills blend in with the natural topography and mimic pre-development site contours.
- e) Lot grading shall be provided on a consistent, comprehensive basis throughout the whole of the development. Grading should not be undertaken on a parcel by parcel basis. All grading should be completed by the Developer, and at an individual parcel level, there should not be a requirement for builders to manipulate land.
- f) Landscaping shall be provided to screen or supplement all retaining features.
- g) Retaining walls shall be terraced to reduce the visual impact and to provide complementary landscaping features.

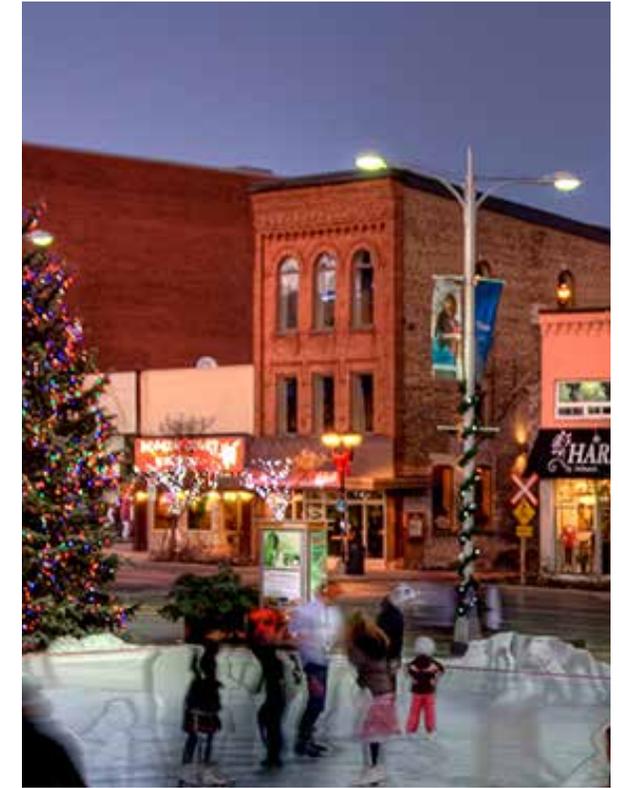
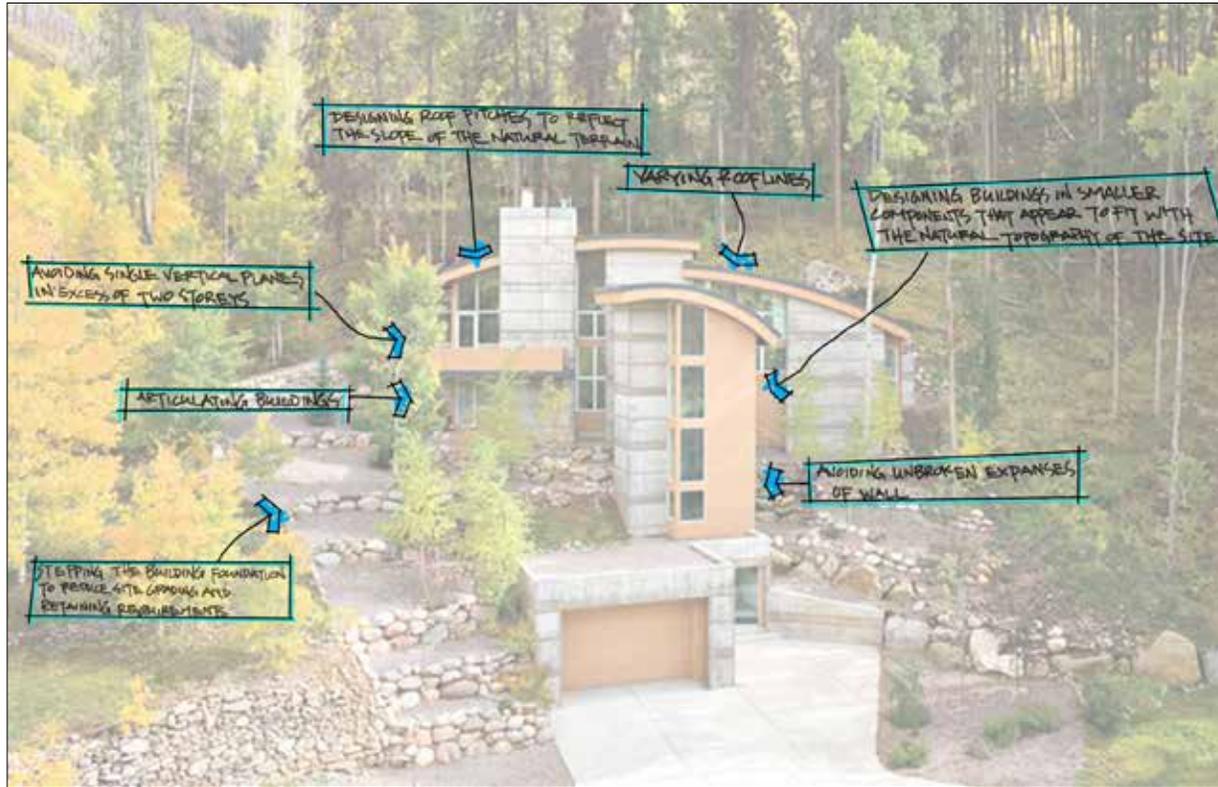


Image 5 - Hillside Development Standards

- h) A range of design tools shall be used to reduce apparent building height and mass. These design tools include:
- i. Stepping the building foundation to reduce site grading and retaining requirements
 - ii. Avoiding single vertical planes in excess of two storeys
 - iii. Varying rooflines
 - iv. Articulating buildings
 - v. Avoiding unbroken expanses of wall
 - vi. Designing buildings in smaller components that appear to fit with the natural topography of the site
 - vii. Designing roof pitches to reflect the slope of the natural terrain



7. TRANSPORTATION

Roadways

A detailed Transportation Impact Assessment (TIA) has been prepared in support of this Conceptual Scheme and recommendations from this TIA provide direction for internal road sizing and regional road network improvements.

Highway 22 is a two lane undivided highway at the point of intersection with Balsam Avenue. It is owned and operated by Alberta Transportation, and upgrading is planned for the intersections of Balsam Avenue and Whyte Avenue.

Balsam Avenue is an Urban Primary Collector with two-way stop control intersections at Burnside Drive/Range Road 50 and River Drive, six driveway accesses into the existing commercial uses on the south side of the roadway, two marked pedestrian crossings, and a four way stop condition at Wintergreen Road. There is no parking permitted on Balsam Avenue, and pedestrians are accommodated with an asphalt pathway on the south side of the road. Balsam Avenue crosses the Elbow River with an existing bridge crossing between River Drive and Wintergreen Road.

Wintergreen Road is a two lane Regional Transitional Paved roadway. The posted speed for Wintergreen Road 600 m north of Balsam Avenue is 40 km/h. The remaining 2.4 km north to Township Road 234 is posted as a 60 km/h design speed. The existing pavement width varies between 8.25m and 8.50m, including the shoulder on both sides of the roadway. The minimum existing horizontal curve radius is 75m, and the existing side slope does not meet the minimum 3:1 requirement. Therefore, the existing conditions for this roadway do not meet the minimum design criteria set forth in the Rocky View County Servicing Standards (2013).

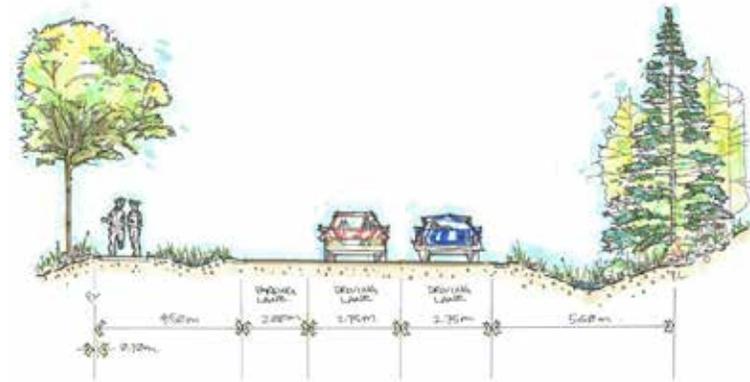


Figure 10: Residential Local 2-Way (RL2 - Parking one side) (17.5 m)

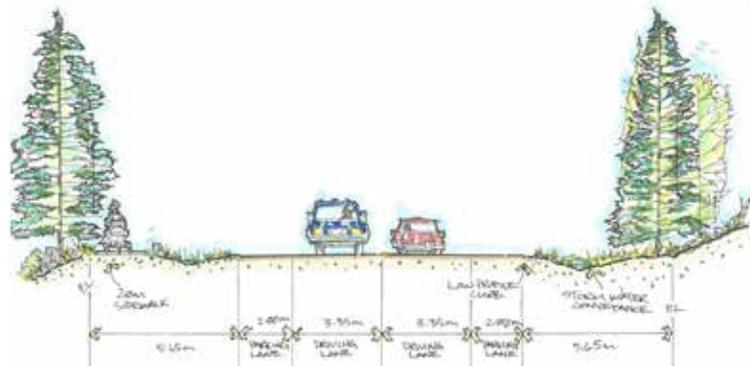


Figure 11: Residential Collector (RC2 - Parking both sides) (22.0 m)

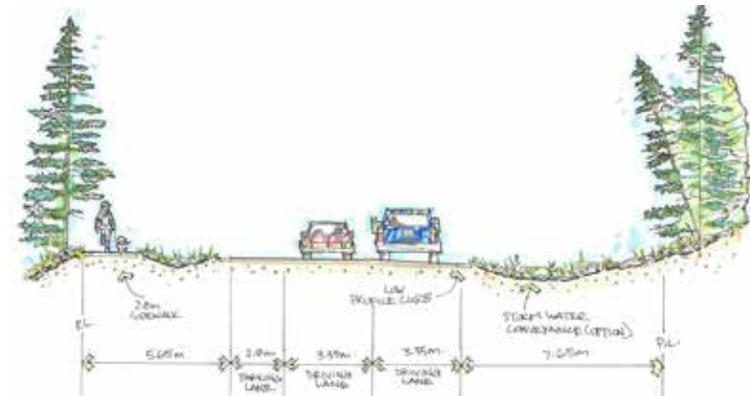


Figure 12: Residential Collector (RC2 - Parking one side) (22.0 m)

Internal Road Network

Within the development there will be one Residential Collector that will intersect with Township Road 234. This Residential Collector road will provide access to all development on the site through direct frontage, or via nine intersecting Residential Roads. All roads will conform with the County's Low Impact Development Standards as shown in *Figures 10, 11 and 12*.



Figure 9: Transportation Network

| Key | |
|---|---|
|  | Study Area Boundary |
|  | Residential Local 2-Way (RL2-Parking one side)(17.5m) |
|  | Residential Collector (RC2-Parking both sides)(22.0m) |
|  | Residential Collector (RC2-Parking one side)(22.0m) |
|  | Emergency Access |



Figure 13: Required Transportation Network Upgrades

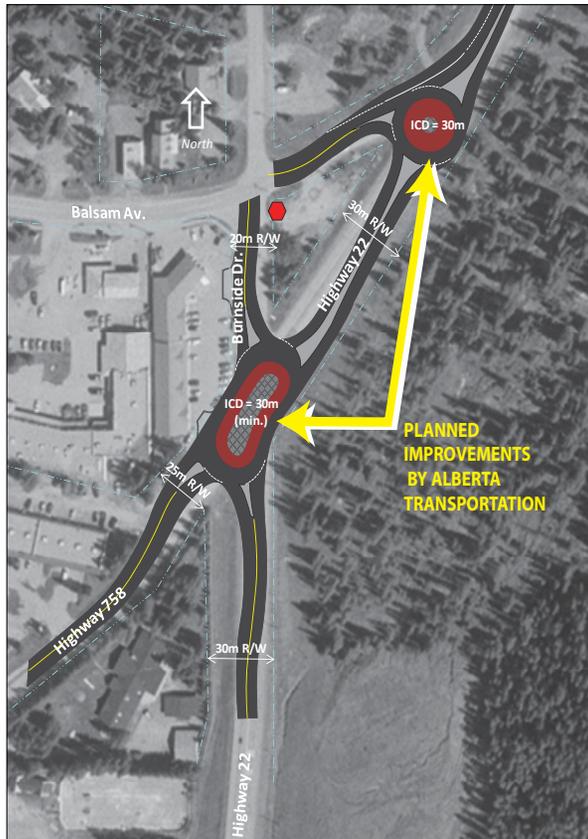


Figure 14: Required Transportation Network Upgrade

External Road Network

The Wintergreen redevelopment will require the following developer-funded upgrades in line with *Figures 13, 14 and 15* and shall be completed in accordance with appropriate timing as described in the TIA:

- Upgrade the intersection of Balsam Avenue and Burnside Drive/Range Road 50 to a four-way stop control.
- Upgrade the intersection of Balsam Avenue and River Drive North to a four-way stop control.
- Upgrade Wintergreen Road to a Regional Arterial road standard with a 10m pavement width.
 - Rocky View County and the developer shall share the costs of upgrade to account for the sub-standard existing conditions of the roadway.
- Upgrade Township Road 234 to a Low Impact Development Residential Collector Standard.



- a) All external roads shall be constructed and maintained in accordance with Rocky View County's Servicing Standards.
- b) All roads within Wintergreen will be located within public road right-of-way; to be maintained by Rocky View County and fully accessible to the public.
- c) Transportation network improvements shall be as recommended in the TIA, as amended or updated, or as otherwise required by Rocky View County and Alberta Transportation (where applicable) when impact is a result of the development.
- d) Timing and cost obligations for improvements shall be determined at the Subdivision and/or development permit stage for each phase of development.
- e) An update to the TIA shall be provided with all future subdivision or development permit applications as required by the County.



Figure 15: Required Transportation Network Upgrades

8. WATER SUPPLY & SERVICING

The Wintergreen redevelopment will be serviced by the Wintergreen Woods Water Utility (WWWU) who operates the water supply and treatment facility and sources from the Elbow River. RCR and the WWWU share the ownership of three water licenses, two for potable water use and one for snowmaking (which is in the process of being converted to potable water use) which accounts for a total water supply allocation of 250,700 m³/yr. At full build-out of the development, there will be a demand of up to 250,580 m³/yr of domestic water annually, which is 120 m³/yr lower than the existing licenses.

Two 2.0 m diameter vertical steel perforated culverts, located adjacent to the Elbow River, act as intake galleries, and collect infiltration. The collected water flows to an adjacent pump well via a 300 mm pipe and is then pumped via the 200 mm raw water transmission main to the water treatment plant located within the development. The existing infiltration gallery and raw water main are adequate to produce and convey the required water supply for full build-out.

Raw water is conveyed to an existing reservoir below the water treatment plant where it is treated for potable consumption. The existing water treatment plant provides potable water to an adjacent subdivision with 75 residences, the Clubhouse, Turf Shop, Caddy Shack and 12 residences in the 14 lot Wintergreen subdivision. The plant will be expanded to

accommodate the service of the full build-out of the development. In addition, a new 1,210 m³ reservoir will be built within the development to provide the required potable reservoir and fire protection, as shown on *Figure 16 - Water Servicing*.

The Wintergreen redevelopment recognizes the value of water as a limited natural resource and will implement low water consumption principles into the site design. These will include low maintenance or xeriscape landscaping, mandatory water meters, and low flow water fixtures (for example, toilets, sinks, showers, appliances).

- The water servicing system shall be in accordance with Rocky View County and Alberta Environmental Guidelines.
- A water servicing analysis shall be submitted to Rocky View County's satisfaction at the subdivision stage.
- Fire suppression infrastructure shall be provided through a charged hydrant system that is consistent with Rocky View County policy (C-7152-2012, as amended) and standards.
- Water conservation measures shall be implemented through architectural controls and include, but are not limited to, low maintenance or xeriscape landscaping, water meters, and low flow water fixture.

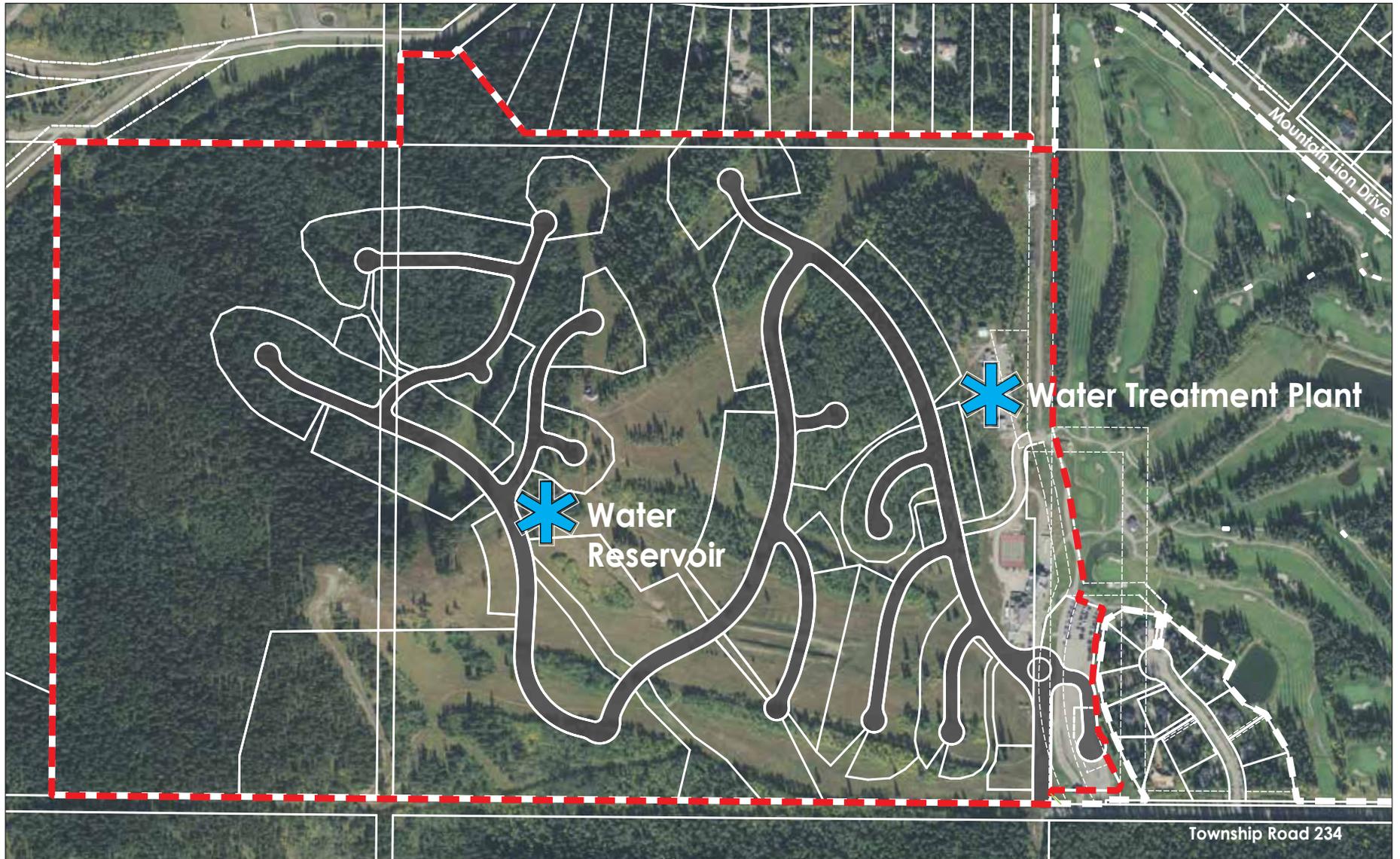


Figure 16: Water Servicing

9. WASTEWATER COLLECTION, TREATMENT & DISPOSAL

Sanitary sewer servicing will be accommodated through on-site collection, treatment, and disposal. At full build-out, the development's estimated annual volume of effluent would be 133,170 m³/yr.

Two options are available to development to treat and dispose the generated effluent throughout the various phases of development.

- a) The generated effluent could be treated and disposed onsite. The existing Wintergreen wastewater treatment plant, modified trickling filter type plant, treats raw sewage from 12 homes, the clubhouse, turf shop, Caddy Shack and water used within the WWTP. The treated effluent is stored in an onsite lagoon and spray irrigated to the adjacent driving range.

For the first phase of development, the existing wastewater treatment plant can be upgraded relatively inexpensively to increase the capacity to 90 m³/d to serve 20 new residential units. The existing storage pond is of adequate size to handle the storage requirements from the additional 20 units and the irrigation area can be easily be expanded to the available land adjacent to the driving range within the golf course.

To accommodate the full build-out maximum day flow of 688 m³/d, it will be necessary to build a new onsite wastewater treatment plant to be constructed in logical phases to match development phases. Some of the effluent would be stored over the winter and some of it would be converted to snow. The golf course effluent irrigation system would be expanded to accommodate the spray irrigation needs as the development progresses to full build-out. The irrigation area would be easily expanded to the available land within the golf course.

- b) The generated effluent could be conveyed to the Bragg Creek WWTP where it would be treated and disposed.

For the development of a first phase of 20 units and maximum day flow of 90 m³/d, there may be the possibility that the Bragg Creek WWTP has some residual capacity that could be allocated to the first phase of the development without triggering a plant expansion. The existing onsite WWTP would be converted into a lift station and a 3.1 km long, 150 mm diameter forcemain would be constructed through the golf course and then along Wintergreen Road to the upgraded Bragg Creek WWTP to accommodate the full build-out maximum day flow of 688 m³/d.

- Prior to the issuance of a development permit or the registration of a subdivision, all necessary licenses and permits required for the sanitary sewer system shall be obtained from Alberta Environment and the County.
- Effluent treatment and disposal works shall be phased and sized to accommodate the flows projected for each phase of the project.
- The sanitary sewer system shall consist of collection, treatment and disposal systems designed and operated to the satisfaction of Alberta Environment and the County.
- Sanitary system design should make efficient use of existing infrastructure where possible for sustainable growth.
- The sanitary system for the Wintergreen redevelopment shall be designed in accordance with Rocky View County and Alberta Environmental Guidelines.



Figure 17: Wastewater Servicing



10. STORMWATER MANAGEMENT

Stormwater drainage from the Wintergreen redevelopment has been designed to mimic natural drainage systems while preventing erosion of natural channels and promoting infiltration. The Bragg Creek Master Drainage Study stipulates that stormwater runoff must not exceed the predevelopment flow rates and volumes.

The Stormwater Management Plan for the Wintergreen redevelopment considers onsite flow conveyance down the slopes and through the existing ponds on the Wintergreen Golf Course. The proposed stormwater management system will convey drainage along roadside ditches and back of lot swales so as to mimic and merge with natural drainage features. Other stormwater management techniques that are considered include preservation of existing trees and vegetation, and encouraging rainwater harvesting for on-lot irrigation. As much as is possible, impervious surfaces should drain over pervious surfaces to encourage infiltration and to avoid erosion.

- a) Stormwater shall be managed to meet pre-development flow rates and volumes to minimize the risk of erosion to natural ravines and water courses.
- b) Flow conveyance via roadside ditches shall be designed in accordance with Rocky View County Servicing Standards.
- c) On-lot low impact development techniques such as rainwater irrigation and absorbent landscaping shall be encouraged.
- d) Preservation of natural trees and vegetation should be encouraged to increase slope stabilization and avoid erosion from runoff.



11. IMPLEMENTATION

The provisions of this Conceptual Scheme will be implemented through:

- The adoption of the Wintergreen Redevelopment Conceptual Scheme and appending it to the Greater Bragg Creek Area Structure Plan;
 - The preparation of a new land use district specific to the Wintergreen redevelopment and the approval of a redesignation application.
- a) The subdivision of land within the Wintergreen Redevelopment Conceptual Scheme shall be in general accordance with *Figure 5-Development Concept*. The final size, configuration, and design of the individual parcels and road system shall be identified on the tentative plan for subdivision approval.
 - b) Public utility lots may be located throughout the development where necessary. Their size, shape and configuration shall be determined to the satisfaction of the County at the subdivision stage.
 - c) Municipal Reserves shall be dedicated at the subdivision stage in accordance with *Figure 18 - Municipal Reserve*.
 - d) Reserves owing for the golf course lands shall be deferred by caveat at the subdivision stage to the satisfaction of the County.
 - e) A report that details key site design elements shall be submitted with each application for a development permit or subdivision application. This report will ensure that the approved plan meets the goals of the Conceptual Scheme. The report shall include the following:
 - i. A site plan that shows the general integration of key site design elements such as general building locations, pedestrian elements, and open space features.
 - ii. A plan delineating public amenities to be provided for the subject phase.



- iii. A pedestrian circulation plan.
 - iv. A landscaping plan for Municipal Reserve parcels, open spaces, pedestrian circulation components, and parking areas that integrates stormwater infrastructure as recommended by the Stormwater Management Plan.
 - v. A parking lot plan.
 - vi. Updated calculations for municipal reserve owing, detailing the amount of land that is being provided as credit municipal reserve dedication and/or a cash-in-lieu payment. This should include updated calculations of the amount of land deferred for MR owing in future phase(s).
- f) Development Approval shall be contingent upon a signed Development Agreement between the County and the Developer.
- g) Development permits for stripping and grading may be approved in advance of each phase of development.

Wintergreen MR Statistics

| | Ha. | Ac. | Percent |
|---|---------------|---------------|-------------|
| TOTAL GROSS AREA | 156.05 | 385.61 | 100% |
| Less | | | |
| Environmental Reserve | 0.44 | 1.09 | |
| Overall Developable Area | 155.61 | 384.52 | 100% |
| Less | | | |
| Golf Course (to be deferred) | 52.73 | 130.30 | |
| DEVELOPABLE LAND | 102.88 | 254.22 | 100% |
| Municipal Reserve Owing | 10.28 | 25.40 | 10% |
| MUNICIPAL RESERVE TO BE DEDICATED | 12.59 | 31.11 | 12% |
| Privately Owned Open Space (Homeowners Association) | 38.70 | 95.63 | 38% |
| Lands to be developed for Residential, Hotel/Commercial/Roads/PUL | 51.59 | 127.48 | 50% |

Table 2: Wintergreen MR Statistics



Figure 18: Municipal Reserve



12. LIST OF STUDIES



- **Wintergreen Biophysical Impact Assessment**
 - Prepared by Sweetgrass Consultants Ltd. – January, 2013
- **Wintergreen Redevelopment Transportation Impact Analysis**
 - Prepared by Urban Systems Ltd. – April, 2015
- **Wintergreen Stormwater Management Report**
 - Prepared by Urban Systems Ltd. – April, 2015
- **Wintergreen Redevelopment – Visibility Analysis**
 - Prepared by Urban Systems Ltd. – April 14, 2015
- **FireSmart Wildfire Risk Assessment**
 - Prepared by Montane Forrest Management Ltd. - March 31, 2015
- **Water and Wastewater Management Options – Final Report**
 - Prepared by Urban Systems Ltd. – April, 2015
- **Historic Resources Application – Clearance**
 - HRA Number: 4835-15-0029-001 – March 4, 2015
- **RCR Geotechnical Investigation**
 - Prepared by Clifton Associates – December 1, 2014
- **Phase 1 Environmental Site Assessment**
 - Prepared by Trace Associates Inc. – December 14, 2012



