HOPE Residential Cluster
Planning and Design Guidelines
Design and Planning Performance Guidelines
For Sustainable Site Planning in Sensitive Areas

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District of Hope

Residential Cluster Planning and Design Guidelines

Intent
The primary intention of the Residential Cluster Zone is retain the beauty of the Hope mountain and streamside landscapes while encouraging high quality developments that allow Hope to grow in a way fitting to its sensitive mountain environment.

Applicants should realize that a significant amount of useable public open space will be required in return for a substantial increase in development density. There must be a fair and measurable public benefit in return for the additional density.

These development permit design guidelines are to be used to evaluate and guide development for the Residential Cluster (R-C) Zone within the District of Hope. Specifically, these design guidelines apply to those areas outside the downtown area along the mountainsides, in hazard areas, and floodplain areas where a Residential Cluster Zone may be considered and the approving officer is satisfied that the application has fulfilled the minimum standards (outlined below) necessary for consideration.

Application to Official Community Plan and Zoning Bylaw
The Residential Cluster (R-C) designation within the Official Community Plan is not a site-specific designation and will only be considered in areas that are zoned either:
   1. Country Residential (CR-1); or
   2. Limited Use (L-1).

Minimum Standards Criteria
To be considered for a Residential Cluster (R-C) zone the following five minimum standards are required before an application will be accepted:

1. Parcel Size: The parcel is a minimum of 5 acres (2 ha);

2. Geotechnical Study: A geotechnical study is completed if the parcel is located within a designated Hazard Area;

3. Land Use, Open Space, and Lot Size: A dedication of at least 50% open space is being considered in the form of recreation and conservation area (covenanted in specific cases to ensure protection), in addition to the individual residential lots and roads. The open space dedication must be in whole, or at least a significant portion, part of a continuous open space system or conservation area that extends, or has the potential to extend, off-site as part of a larger local or regional system.

   Open space will generally not be accepted that is non-developable and has no recreation value unless it is deemed a significant natural feature or has measurable ecological significance.
# RESIDENTIAL CLUSTER ZONE REQUIREMENTS MATRIX

<table>
<thead>
<tr>
<th>LAND USE</th>
<th>OPEN SPACE % (note 1)</th>
<th>Minimum LOT SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Single Family</td>
<td>50%</td>
<td>SF 7,500 sq. ft. 703 sq. m.</td>
</tr>
<tr>
<td>2. Single Family/Duplex</td>
<td>70%</td>
<td>Duplex 4,000 sq. ft. (note 2) 372 sq. m.</td>
</tr>
<tr>
<td>3. Single Family/Duplex/Ground-Oriented</td>
<td>80%</td>
<td>Ground-oriented multiple residential buildings ½ acre lot (note 2) 2,000 sq. m</td>
</tr>
<tr>
<td>Multiple Unit Residential Buildings</td>
<td></td>
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</tr>
</tbody>
</table>

**Notes:**

1. Publicly accessible open space to be determined by the District of Hope.

2. Duplex and Ground-oriented multiple residential buildings may be granted to category 1, and Ground-oriented multiple residential buildings to category 2, at the discretion of the Approving Officer and the District of Hope Council.

3. The overall gross density may not exceed 2 units/acre (5 u/g/ha) or ½ acre gross density.

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4. **Fit**: The parcel is considered an appropriate choice for cluster residential development in terms of its location along the mountainside or waterfront, and that the cluster concept fits in with the adjoining patterns of development.

5. **Servicing**: The site is in an area that can be accessed by a road in accordance with District of Hope standards, and other services such as potable water, sanitary sewer, and storm water can be managed on site or be readily available to the District of Hope and the Ministry of Health standards.

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**Design and Development Goals**

These design guidelines are used to:

- Create a high quality residential development by coordinating site development, servicing, open space conservation, and residential unit construction;
- Establish design standards that are relevant to the community and the specific mountain and floodplain setting;
- Reduce the visual impacts of development within and from outside the site;
- Protect the residents from potential hazardous situations associated with rock fall, land slides, flooding and other associated impacts of extreme mountain environments;
- Conserve the rural setting and natural environment, so highly regarded by local residents and visitors; and
- Reduce private and public costs associated with servicing, development, and maintenance of these special areas.

The result of comprehensive development review and consideration in accordance with these guidelines should be an appropriate development solution to difficult development challenges. The associated thoughtful design will integrate with the surroundings and provide for the growth of Hope in an efficient, and sensitive manner.
Use and Interpretation of the Guidelines
These design guidelines are meant to inform development permit review with enough flexibility to adapt to specific site constraints and opportunities. Specific elements within these guidelines are "minimum standards" with no flexibility, while others are simply a guideline to help direct development. Minor variations from the design guidelines may be accepted if the general project design intent and benefit to the District of Hope can be demonstrated. No exceptions will be made in Hazardous Areas that are not supported by comprehensive geotechnical studies. In all these cases, the Approving Officer has the sole right to approve or reject any proposal.

In Cluster Residential Rezoning applications, it is recommended that an environmental land use planner and/or architect, experienced in mountain or floodplain site planning, be used to assemble the proposed rezoning application in association with appropriate other professionals including, but not limited to: geotechnical engineer, civil engineer, landscape architect, and certified arborist.

These design guidelines outline a list of requirements and recommendations that the applicant is expected to meet to obtain a rezoning for the specific parcel and the subsequent Development and Building Permits. Strict requirements read as 'shall', 'is', and 'must', while recommendations read as 'should', 'preferred', 'avoid', 'encouraged' etc. Failure to meet these design guidelines may prolong approval, and may, in some instances, result in rejection of the application.

In specific cases, registered covenants may be required to protect the open space from development or undesirable uses in perpetuity. These Covenants are intended to protect the long-term interests of the community and future residents of the development area.

Where conflicts occur in areas of overlap between the design guidelines and the District of Hope Zoning Bylaw and associated development Bylaws, development must ultimately conform to the Zoning Bylaw and the associated Bylaws. In exceptional cases, the applicant may obtain a Development Variance Permit issued by Council to alter the Zoning Bylaw regulations, excepting for land use and density variations.
Approval Process and Requirements
In each of these rezoning applications, the applicant will be required to follow a review process that ensures that the proper due diligence is completed for the property and that the site fits the minimum qualifications criteria as outlined previously. This development review process is meant to reduce risk, increase design quality, and conserve the rural qualities associated with the area.

Specifically, the applicant will be required to examine and report on each of the following steps:

STEP 1: Site Development Feasibility
- Geotechnical study of hazards and building feasibility (safe building site)
- Potable water availability and waste water treatment feasibility
- Tree survey and management plan
- Environmental and Fisheries constraints
- Open space and conservation strategy (private and public ownership)

STEP 2: Site Development Concept (Assumes Step 1 is approved)
- Land Use Concept (residential density, location, and type)
- Recreation and Conservation Strategy (use, ownership, and management)
- Servicing Plan (potable water, waste water, and storm water)
- Roadway and Emergency Access
- Conservation Strategies for: trees, slopes, streams, wildlife, meadows, and visual sensitivities.

STEP 3: Rezoning Application for Residential Cluster Zone (R-C)
- Rationale to Rezone
- Topographical survey by a B.C. Land Surveyor (to 1m contour interval, trees shown over 20cm (8") diameter, and spot elevations of features or low and high points)
- Studies submissions
- Detailed Plans
- Conditions of Rezoning Approval (open space, covenants, and development agreement)
- Public Hearing

STEP 4: Development and Building Permit Applications
- Detailed submission of Engineering, Environmental, Architecture and Landscape Architecture drawings
- Detailed Development Conditions for Approval
A. OVERALL SITE DEVELOPMENT GUIDELINES

Overall Review Criteria:

- Protect and enhance the mountainside terrain, forest ecosystem, and naturally controlled drainage patterns;
- Maximize the protection of important ecological features in an integrated and thoughtful open space system that connects with adjoining properties;
- Minimize site grading, storm water management, access, and other associated improvement costs to the District of Hope and the applicant in both site development and long term maintenance costs; and
- Minimize any hazards associated with the location and the adjoining potential flooding, rock fall or other issues.

Cluster Concept and Density Transfer on Site

In exchange for significant open space dedication (see matrix in minimum standards section), the District of Hope may grant a rezoning to permit higher density on the balance of the site, while retaining the overall gross density of no more than 2 units per acre or 5 units per hectare. The concepts below illustrate the application of this cluster residential concept in four different locations along mountainsides and watercourses.

Concept 1 illustrates a residential cluster alternative in a relatively flat open area part way up a mountain side.
Concept 2 illustrates a residential cluster alternative along a stream with setbacks from the top-of-bank.

Concept 3 illustrates a residential cluster alternative on a mountaintop, set back from the sensitive edges.
Concept 4 illustrates a residential cluster alternative along a mountainside, with gaps between the individual clusters, to integrate the development into the vegetation and natural features.

Site Disturbance

No site disturbance (grading, excavation, tree removal etc.) of any kind shall be undertaken until issuance of the Building Permit. Only those required site disturbances associated with geotechnical, arborist, or site servicing evaluations will be accepted. Nearby trees and undergrowth on public and private land shall be protected from damage. Protective fencing will be used to protect trees on adjoining properties and delineate construction zones when necessary.

Site Grading

Existing terrain and drainage patterns should be maintained as much as possible by adapting the access roads and housing forms and main floor levels to suit the natural contours. Site grading should be minimized as much as possible to protect existing vegetation and drainage patterns.
In addition, soils will be retained on site as much as possible, especially topsoil for final grading and planting areas. Soil retention on site will also balance cut and fill, therefore minimizing related costs of bringing in soil to the property. No material will be stored on adjacent property—public or private, without the owner's prior written consent.

Rocks greater than one meter (3.3 feet) in diameter should be considered part of the final landscaping. Underground watercourses exposed during excavation should be retained by rerouting to surface if possible and incorporating them into the amenity features of the site.

Access and Driveways

Access roads and driveways to individual lots should not exceed 15% slope, with an average grade in the 12% range if possible. The access roads should include smooth transition sections. The minimum paving width will be 7.0 meters (23 ft.) on access roads with a shoulder provided on either side of no less than 2.0 meters (6.6 ft.). The paving material will be asphalt, unless otherwise specified and accepted by the District of Hope.

Access roads and driveways should be designed to minimize grade changes by creating “switchbacks” where appropriate and aligning the road to reduce ecological impact (significant trees, watercourses, wildlife corridor, rock features etc.). Driveways to individual residences shall not exceed 6 meters (20 ft.) in width.

Storm Water Management Plan

Storm water should be managed on site through a combination of swales, storm water detention, and retention ponds. A storm water master plan will ensure that soil erosion is minimized and no excess run-off affects adjoining sites or watercourses. A civil engineer is required to complete this plan in conformity with District of Hope standards, or in absence of specific standards, accepted professional engineering standards.

Potable Water and Waste Water Management Systems

Site servicing shall include a potable water system, either on site or off-site, on a communal or individual well system to the Ministry of Health standards.
Site servicing shall also include an individual septic system, or where lots are smaller that the required minimum standard, a communal waste water system "Plant" that meets the Ministry of Health standards. The waste water system and associated building should be appropriately integrated into the open space system.

**Tree and Undergrowth Protection Plan**

A tree management plan should be developed as part of the required Landscape Plan to minimize disturbance on the site and reduce associated development costs. If the tree plan is coordinated with storm water management, site grading, road layout, and building layout, site development costs should be reduced.

A certified arborist shall be consulted to ensure that the recommendations do not leave potentially hazardous situations or threaten the future health of existing trees or trees on adjoining properties. Trees and undergrowth protection areas should be explicitly delineated on a plan with protective fencing erected during construction.

Trees on adjacent property must not be cut, pruned or have roots severed or disturbed during construction. Large tree roots encroaching on construction areas shall be left intact up to the foundation. Fill or any other material shall be kept well clear of existing trees. Foreign materials and substances should be prevented from entering or leaching into soils and definitely not be stored or placed in the tree protection areas. At the same time, root systems of retained trees shall be protected from compaction and grade changes.

**Landscape Plan**

(see also Section C: Landscape Guidelines and Appendix A: Native Landscape Plants)

The applicant is also required to illustrate replanting areas where trees and undergrowth have been disturbed. These replanting areas associated with housing and conservation areas should specify tree or shrub location, quantity, type, and planting requirements. A registered Landscape Architect is required to complete the Landscape Plan. This Landscape Plan can be coordinated with the Tree and Undergrowth Protection Plan as specified above.
Graded Slopes and Retaining Walls

Slopes up to 1:2 (50%) should be planted to minimize erosion. slopes exceeding that gradient require a retaining wall. all grading is to conform to the site development plan and meet existing grades on adjoining lots where possible. maximum grade changes between lots shall not exceed 0.6 meters (2 ft.). retaining walls should be minimized where possible and will only be accepted in exceptional circumstances where no other reasonable solution is possible. in situations where retaining walls are the only reasonable alternative, all such retaining walls shall not exceed 1.2 meters (4 ft.) and within a line projected at a vertical angle of 45 degrees between retaining walls. these retaining walls shall have adequate footings and drainage control and may require a structural engineer’s seal.

Concrete retaining walls in the front yards or in public view shall be finished with a desirable material such as local split granite or equivalent or constructed with interlocking split face concrete blocks (‘Allan Block’, ‘Pisa Block’ or equivalent – “Geogrid” reinforced over 0.9 meters (3 ft.) or equivalent). Horizontal wood cribbing is also an accepted application and planting hanging over retaining walls or climbing vines should be planted to mask the walls. Dry stacked rock or plain face concrete block walls are not permitted. Retaining walls shall be backfilled with suitable free draining material. The drainage layer shall be piped to minimize flooding potential. It shall be connected to the storm water connection or a dry rock sump on the property.

Pedestrian and Bicycle Access and Trails

Pedestrian and bike trails should be incorporated into the overall site plan as an integral part of the open space system. These trails should be connected with similar trails off site that will eventually create a District network of trails. Consideration for privacy and a natural experience, incorporating views, natural features, and moderate grades, should be part of the trail layout. Coordination with the District of Hope, Regional Parks, and adjoining owner’s plans is important.

Trails should use natural mulch if possible, unless they are in urban areas where another surface treatment is more appropriate. Trail widths should be a minimum 1.5 meters (5 ft.) for pedestrian trails and 3.0 meters (10 ft.) for a combined bicycle and pedestrian trail. These dimensions might vary depending on the location, amount of use, and environmental sensitivity of the site.
B. BUILDING GUIDELINES

Overall Review Criteria:
- Require building setbacks from the top of the slope and in floodplain areas;
- Create views, yet protect the external views into the site;
- Conserve energy by passive solar orientation;
- Follow a heritage character (ranch, alpine or appropriate themes); and
- Protect and enhance the natural areas and features of the site.

Building Siting

The building siting and clustering of units will be located on the "developable" portion of the site (as opposed to the open space conservation area). The building units sitting should consider open space connections and associated amenities. Buildings will also abide by the required setbacks for watercourses (flooding and streamside protection) and setbacks in potential rock fall areas. Trees over 20 cm (8 inches) in diameter, at breast height, shall be retained where possible and integrated into the building or cluster site plan.

In sloped areas, orient the house in the direction of the slope. The building orientation and form should also maximize solar heating benefits as well as protect against the prevailing winds. Consideration should also be given to snow removal and accumulation especially at higher elevations.

Buildings or clusters of buildings (townhomes, semidetached units or small lots) shall be setback a minimum of 10 meters (33 ft.) from the top of slope to protect external views, provide privacy, and protect the top of slope from failure. In areas adjacent to watercourses, building setbacks shall be in accordance with Provincial stream stewardship and floodplain standards.
Building Design Character

House, cluster house designs (townhomes, semidetached or small lots) or associated support buildings, should follow an alpine character, or west coast/craftsman style. Non-regional styles (e.g., Tudor, Mediterranean, Californian) are not permitted. Buildings form should emphasize structural elements and vertical components. Exposed supports should be used to provide greater three-dimensional definition. Large window openings should match the shape of the structural framing.

Building Plans

Building plans should be completed by a professional design service. Stock plans are not permitted.

Building Forms

Buildings should step-up with the slope rather than be superimposed in one mass in sloped areas. A mix of scales and forms should be considered in single-family lot layouts and in cluster housing sittings to give diversity and richness to the plan.

Roofs

The roof to these buildings will be an important feature in the overall massing of the buildings, especially in the mountainside environment where the roof can be more readily seen. Emphasis should be given to the overall roof form using peaked and shed roof styles. Flat roofs are not acceptable. Weather protection features such as extended overhangs should be maximized. Overhangs greater that 1.8 meters (6 ft.) should have visible support.

Cedar shakes and shingles are recommended. Muted colours in asphalt shingles, fiberglass shingles, and ribbed metal roofing are permitted. Earth tone colours are recommended to integrate the roof structure with the surrounding landscape colours.

Building Materials

Wood and stone should be elemental to the buildings and building clusters to emphasize the locale and history of construction. Materials like vinyl, aluminum siding and brick facing are not preferred or should be only a portion of the building materials. Accents in wood and stone are recommended.
Exposed concrete shall be sandblasted or clad in split faced granite or similar material. Coloured concrete, if used, should be muted earth/rock tones.

**Colours**

Clear or muted colours, used with stains, or earth tone coloured materials are recommended; accent colours shall only be permitted on minor building elements.

**Mechanical Equipment**

Mechanical equipment should be screened from neighbouring properties and noise abatement may be required (for fans, compressors etc.).

**Garages**

A double size garage is permitted, and collective parking for building clusters is encouraged, to reduce paving and site impacts. The garages should be integrated into the main house structure or follow the adjoining building cluster forms for continuity in the case of multiple family housing.
C. LANDSCAPE GUIDELINES

Overall Review Criteria:
- Retain native vegetation and second growth forest stands;
- Retain mature undergrowth;
- Enhance the landscape with additional planting;
- Improve and respect the natural drainage and hazard areas; and
- Enhance the wildlife potential on the site within the context of adjoining parcels.

Standards

A registered Landscape Architect must prepare the Landscape Plan. All landscape methods and materials should meet current BCSLA/BCNTA Landscape Standards.

Landscape Character

The landscape plan is to retain and enhance the natural settings as much as possible with minimum disturbance to the natural areas to be conserved outside the building sites. Landscape elements should follow an informal design and be understated.

Plants

Native British Columbia species should be maximized. Any supplemental planting should be compatible in variety and size. Minimize cultivated, decorative, and non-indigenous plants and lawns. Naturalized landscapes should be the general approach to reduce maintenance, enhance wildlife, and water use. Tall tree species should be located to minimize impact on views from neighbouring properties. (see Appendix A)
Grading

All final grading must match adjoining, undisturbed natural grades and should be integrated with the storm water master plan.

Fences

Fences on individual properties should be minimized where possible to enhance the natural integration of the overall site plan. Where a buffer or screen is required to delineate a property line or for privacy, an informal grouping of trees or shrubs is recommended. Overall, project gateways or fence accents (wood rail or similar heritage fencing) are acceptable if they enhance the overall natural heritage of the site.

Lighting

Lighting should be low key including down-lighting or non-glare type lumination for functional purposes only.

Security

Planting should afford clear views between the house and the access roadway; use of low shrubs and high canopy trees near the house is recommended.

Timing of Landscape Installation

The landscape plan shall be complete within 12 months of issuance of the Occupancy Permit for any particular phase of development.
APPENDIX A: Native Landscape Plant List

The following are potential native plants options for individual, cluster site, and overall site development enhancement. This is a general list of plants. Some of the following plants might not be suitable for the Hope mountain environment, especially at higher elevations. Sometimes the best solution with native planting is to mimic the tree types and patterns on the existing site to maximize compatibility and survival. Also, be aware that some native tree species can grow up to 1.8 meters (6 ft.) each year and can affect views. Therefore, longer-term impacts of large trees on the site development should be considered. All plant material will meet BCNTA standards.

Deciduous Trees
Red Alder, *alnus rubra*
Vine Maple, *acer circiium*
Red Maple, *acer rubrum*
Paper Birch, *betula papyrifera*
Pacific Dogwood, *cornus nutallii* (and smaller varieties)
Douglas Maple, *acer glabrum*
Black Hawthorn, *crategus douglasii*
Pacific Crab Apple, *malus fusca*
Bitter Cherry, *prunus emarginata*

Coniferous Trees
Douglas Fir, *pseudotsuga menziesii*
Western Red Cedar, *thuja plicata*
Western Hemlock, *tsuga heterophylla*
Western Yew, *taxus brevifolia*
Red Cedar, *thuja plicata* 'Excelsa'
Western White Pine, *pinus monticola*
Shore Pine, *prunus contorta*
Mugho Pine, *pinus mugo mughus*

Shrubs
Maidenhair Fern, *adiantum pedatum*
Deer Fern, *blechnum spicant*
Western Sword Fern, *polystichum munitum*
Oregon Grape, *mahonia aquifolium*
Huckleberry, *vaccinium parviflorum* & *ovatum*
Redtwig Dogwood, *cornus stolonifera*
Wild Mock Orange, *philadelphus lewissii*
Viburnum, *viburnum davidii*
Pacific Rhododendrons, *rhododendron macrophyllum*
Azaleas, (local evergreen varieties)
Sarcococca, *sarcococca ruscifolia*

Ground Covers, Vines
Kinnickinnick, *arctostaphlos uva-ursi*
Saial, *guaiathera shallon*
Clamatis, *clamatis armandii*