Appendix A-1

Landscape
Development Permit Design Guidelines

The quality of design, character and appearance is important to the experience both residents and visitors have of their community. Good design, including the incorporation of good quality landscaping, is important to the aesthetics of a place. The “Landscape Design Guidelines” are based upon community design goals for the landscaping and site planning developments.

These Design Guidelines will be used in reviewing Development Permit applications as set out in this Official Community Plan. It is important that any plan submitted for a Development Permit demonstrate consideration of the Objectives and Design Guidelines.

1. Landscape Design Objectives

1.1 Water is a limited commodity in the Okanagan valley. It is important that we use water resources judiciously. The use of water conservation measures is important.

1.2 Plants fulfill a multitude of purposes such as visually improving and softening the impact of buildings and parking, screening unsightly land uses, moderating the temperature, and improving air quality. People feel an innate connection to the world around us and living plants contribute to our physical and mental wellbeing. Landscaping is seen as a positive and desired contribution to the community in the urban environment.

1.3 Landscaping must consist of a variety of trees and shrubs in a cohesive design.

1.4 Landscape plans must respect and improve the views from public areas. The view of any development from the street is important. It creates the initial impression of the development and contributes to the overall character of the area.

1.5 Landscape plans must respect and improve the views from neighbouring residential properties. It is important that any development adjacent to residential areas be a “friendly” neighbour. Neighbouring residential uses should be buffered and screened with landscaping and fencing.

1.6 Trees filter air, moderate the temperature and are of great visual and environmental value. The planting of trees must be incorporated into landscape plans.

2. Landscape Design Guidelines

All landscape plans should be developed based upon the Landscape Design Goals, in consideration of the following landscape design guidelines.

2.1 Water Economy

2.1.1 All planted areas are to be covered with landscape fabric and mulched.

2.1.2 All landscaped areas must be irrigated. Low volume irrigation methods are encouraged. Even a Xeric (dry land) landscape design must still have an irrigation

system to ensure survival during the initial years and to provide some water if required after the landscape is established.

2.1.3 Irrigated lawns use considerably more water than mulched shrubs. Lawns should be used only for a specific effect such as around main entrances or where the lawn will be used as a gathering or play area.

2.1.4 The use of drought tolerant plant material is encouraged.

2.1.5 The use of man-made water features and fountains is discouraged.

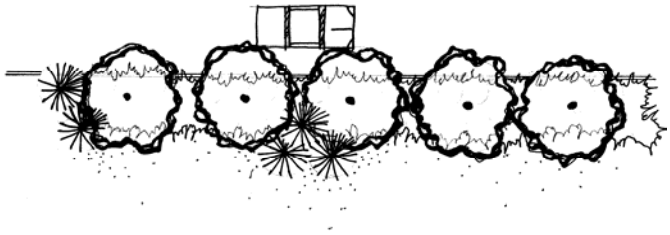
2.2 Views from public areas (such as roads, schools and parks)

2.2.1 Landscaping should be provided:

2.2.1.1 along property lines that are next to public areas.
2.2.1.2 along the base of buildings that are seen from the public areas.
2.2.1.3 between parking areas and public roads.

2.2.2 All front yard setbacks should be landscaped.

2.2.3 Within any landscaped area fronting a public road street trees (several regularly spaced trees of one species) are to be provided at no more than 9 meter intervals and are to be at least 2.5 meters tall. The planting of other trees in addition to the street trees is strongly encouraged.



Street trees are required along roads.

2.3 Views from residential areas

2.3.1 Landscaping and buffering are to be provided next to any adjacent residential area. The entire setback should be landscaped in trees and shrubs.

2.3.2 Landscaped berms create a visual buffer. Even a small elevation change in the ground has an impact. Berms are encouraged especially where the creation of a visual screening effect is desired.

2.4 Parking, vehicular traffic, and waste collection areas

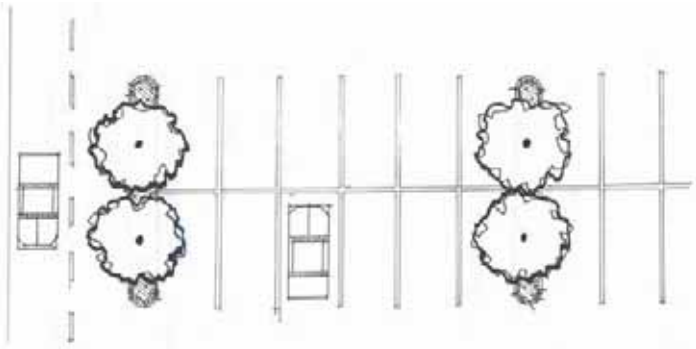
2.4.1 Outdoor storage or waste collection areas should be screened by fencing, hedging or landscaping.

2.4.2 Where landscaping is adjacent to parking or vehicular traffic there should be a concrete curb to protect the landscaping from damage.

2.4.3 In parking areas, landscape islands of trees and shrubs should be used to visually break up large expanses of parking. They are encouraged:

2.4.3.1 Between internal collectors (not used for direct access to parking stalls) and aisles that provide direct access to parking stalls,

2.4.3.2 At the end of aisles.
2.4.3.3 In mid-aisle to interrupt long aisles of parking stalls.



Trees and landscaping improve the parking environment for people and visually softens the impact of asphalt.

2.5 Existing landscaping

2.5.1 Integration with, or augmentation of, any existing landscaping is encouraged.

2.5.2 Retention of existing trees and integrating them into the proposed site and landscape design is encouraged.

2.6 Cohesiveness

2.6.1 To create visual cohesiveness, choose a few types of plants and use them repeatedly in groups throughout the site. This creates overall visual continuity as opposed to a hodge-podge of “one of everything”.

2.6.2 It is best to use a particular type of plant in odd number groupings (7, 9, 11 etc).

2.7 Focus

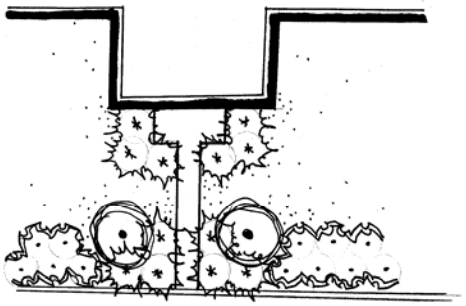
2.7.1 A change in the type or number of plants can be used to create a focus. That focus is important:

2.7.1.1 At entrances onto the site for either cars (driveways) or people (sidewalks).

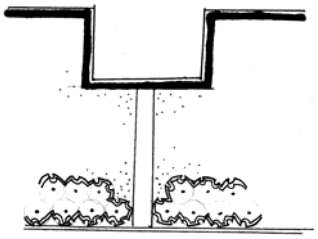
2.7.1.2 Near important entrances and doors into buildings.

2.7.1.3 To emphasize changes in architecture.

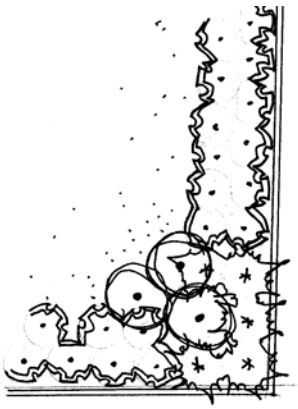
2.7.1.4 At intersections, if the property is on a street corner.



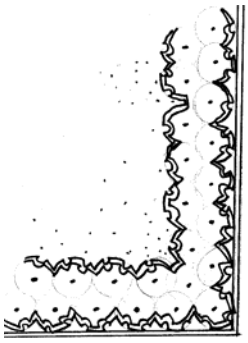
Focus created by the use of landscape material



No focus



Focus



No focus

Landscaping can create a focus at a street corner or where cars access the site.

2.7.2 A focus is created by

2.7.2.1 Changing the shape of the landscaped bed.

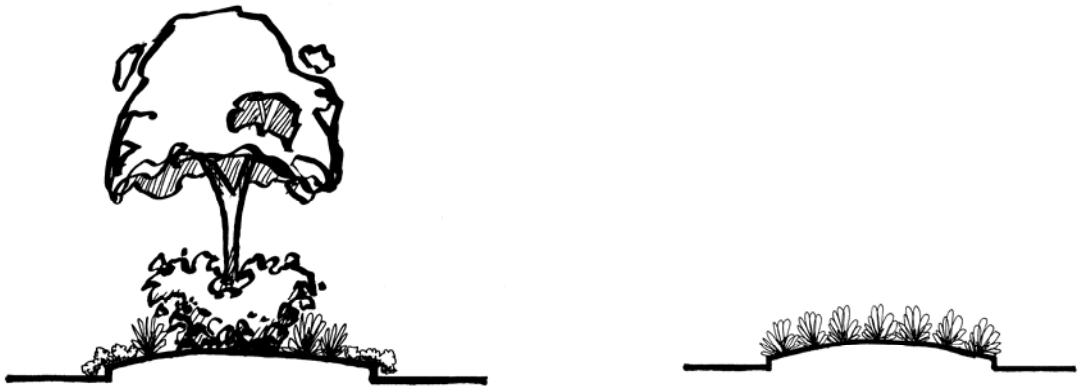
2.7.2.2 Using more landscaping at the focus.

2.7.2.3 Using a certain type of plant(s) or a specimen plant only at a focus.

2.8 Depth and Variety

2.8.1 Plant types should be selected such that there is interest provided in all four seasons. The use of at least one type of evergreen tree or shrub is encouraged.

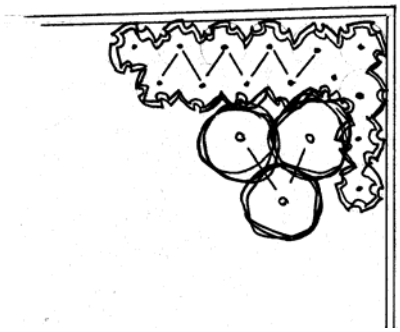
2.8.2 To increase variety and interest, choose different types of plants that will grow to be various heights. Include a combination of groundcovers, shrubs of various heights and trees.



Groundcovers, shrubs and trees create variety. One height is visually monotonous.

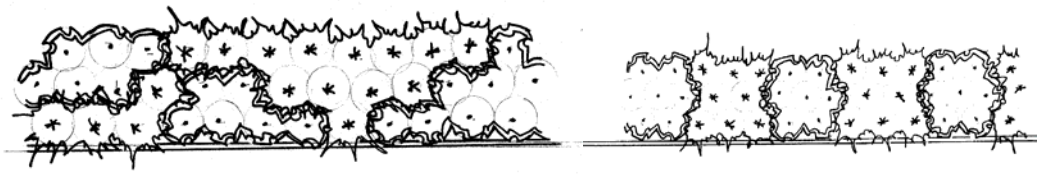
2.8.3 Visual depth is produced by:

2.8.3.1 Staggering plant material. Each plant is slightly offset from the next.



Staggered plants create visual depth and a natural appearance.

2.8.3.2 Layering plant material in a landscaped bed from one side to the other. Rather than one species across the entire depth of the bed, a few species are placed one behind the other to create a visual layering affect. Different plants are weaved in front and behind each other rather than placed in a linear series of regimented groups.



Layering creates depth and visual variety … *versus no layering*

2.9 Safety

A good landscape design can enhance the safety of both public areas and private property. It is important to ensure that a landscape plan considers some key principles of safety.

2.9.1 Landscaping should not create blind spots or potential hiding places.

2.9.2 There may be a need to screen storage yards or noxious land uses. In other cases though, landscaping should allow for the natural surveillance of the public areas by

those on private property and vice versa … a natural surveillance of the private property by those on the street.

2.9.3 Landscaping can be used along a property line to create a sense of; care and attention, use of the space, and ownership. This definition of space avoids the creation of an empty area that seems uncared for and becomes a visual "no man's land" that does not seem part of either the public or private realm.

2.10 Plant spacing

The distance between plants is called "on-centre spacing" and is measured from the centre of one plant to the centre of the neighbouring plant. The distance is based upon ensuring the plants fill in a reasonable amount of time, yet are far enough apart to avoid overcrowding. Areas that require a development permit often have a relatively high public profile, therefore adequate plant density is important.

2.10.1 An acceptable "on centre" spacing will result in the landscape completely filling in about 5 years time. On-centre spacing is very species dependant and typically varies as follows:

2.10.1.1 Groundcovers (such as arctostaphylos, cotoneaster, paxistima canbyi) – 6 inches to 2 feet on centre.

2.10.1.2 Small shrubs (such as spiraea, japonica, potentilla fruticosa) – 2 to 3 feet on centre.

2.10.1.3 Medium shrubs and junipers (such as many hardy shrub roses, spiraea bumalda, cornus alba, pinus mugo) – 3 to 4 feet on centre.

2.10.1.4 Large shrubs (such as forsythia intermedia, many syringa, amabilis, cotinus coggygria – 4 to 5 feet on centre.

(The plants mentioned as examples of shrub size are not a complete list and are only general examples. Some species may have varieties that are larger or smaller, for example winged-burning bush, euonymous alatus, is a large shrub whereas euonymous alatus "compactus" is a medium sized shrub.)

2.11 Shrub size

It is important that there be a good initial appearance and that landscaping not take too many years to fill in. Planting very small plants will reduce and delay the intended visual effect.

2.11.1 Unless a groundcover, all shrub material must be at least 2 gallon (#2) size.

If the landscaping covers a particularly large area, a reduction in size may be considered by the Regional District for one or more plant types. This would be contingent on plants in areas of high visual impact (such as at areas of focus discussed previously) being of an adequate container size to visually compensate for the other plants being less than a #2 pot size.

2.12 Standards

2.12.1 Plant material in the specified container size must meet the BC Landscape Standard for size and leaf density. (The BC Landscape Standard is published jointly by the BC Society of Landscape Architects and the BC Landscape and Nursery Association).

2.12.2 All trees shall be staked in accordance with the BC Landscape Standards. (The BC Landscape Standard is published jointly by the BC Society of Landscape Architects and the BC Landscape and Nursery Association).

2.12.3 All planted areas are to be covered with landscape fabric and mulched.

2.12.4 All landscaped areas must be irrigated. Low volume irrigation methods are encouraged. A Xeric (dry land) landscape design must still have an irrigation system to ensure survival during the initial years and to provide some water if required after the landscape is established. A low volume irrigation method is encouraged.

2.13 Plant material that is prohibited

2.13.1 There are certain plants that may harbour damaging diseases that can be transmitted to commercial orchards and vineyards in the Okanagan. The following types of plants are not permitted as part of planting plans;

2.13.1.1 All trees of the genus MALUS (apples or crabapples, including all ornamental or flowering crabapples).

2.13.1.2 All trees of the genus PYRUS (pears, including asian and ornamental pears).

2.13.1.3 All trees of the genus PRUNUS (flowering cherries and flowering plum).

2.13.1.4 All plants of the genus CYDONIA (quince).

2.13.1.5 All plants of the genus CHAENOMELES (flowering quince or japonica).

Appendix A-2

Commercial and Industrial Building Development Permit Design Guidelines

The form, character, appearance and landscaping of commercial and industrial properties is an important part of what makes a place attractive and livable. The community has identified good urban design as an important issue for the Ellison. Although commercial and industrial activity is limited in the area, it is important that the community have the tools available to ensure good design. The "Commercial and Industrial Building Design Guidelines" are based upon community design goals for the urban design of Commercial and Industrial developments.

This document contains a summary of the objectives and design guidelines. A detailed set of design guidelines including examples, more detailed explanations and an evaluation form is available from the Regional District. Please obtain the detailed design guidelines prior to making an application.

These Design Guidelines will be used in reviewing Development Permit applications as set out in this Official Community Plan. It is important that any plan submitted for a Development Permit demonstrate consideration of the Objectives and Design Guidelines.

1. Design Objectives

Commercial and industrial building design should create a good neighbour and provide a positive contribution to the fabric of the community. The design of commercial and industrial buildings should achieve the following objectives;

1.1 The support of good urban design principles

1.2 Integrate agricultural and traditional (historical) concepts and styles in design

1.3 Ensure a focus on the human scale and experience

1.4 Ensure increased variety and attention to detail in design

1.5 Ensure cohesiveness (within the building design and with the surroundings)

1.6 Provide for a unified community of harmonious and pleasant design

2. Summary of Design Guidelines

The following is a summary of the design guidelines. These guidelines are further illustrated and discussed in this document.

2.1 There is a focus on the pedestrian and the experience from the street. Detail and variety is important. There is:

- Increased attention to the building design (detail and variety) on the first floor.
- Overall stronger detailing and trim of windows, doors, corners and edges.
- No large expanses of blank wall.

- Localized lighting and benches for pedestrian comfort.
- Awnings of a traditional shape

2. 2 Building design increases the interaction between activities inside and outside of the building. Some methods include:

- A large window area on the first floor. Glass is transparent, not mirrored.
- A design focus on doorways (e.g.: recessing, changing architectural form, using colour and detail.)
- Exterior spaces that encourage use by both businesses and the public such as outdoor cafes or merchandise displays.
- Trim and details that frame significant edges such as doors, windows, the first storey, building corners.

2.3 Windows are distinct “windows” set into walls (as opposed to large curtain windows) and usually are multi-paned (using mullions). Windows are usually taller than they are wide. The multi-paned detailing may be confined to the upper part of the window, especially on large first floor windows.

2.4 There are frequent changes in architecture as one walks along the street. Many vertical breaks in the façade (setting the building form forward or back vertically and/or horizontally), colour, materials, changing window type, details etc.) make for a more interesting street experience. Strive for some type of vertical change at least every 7.5 metres.

2.5 There is a good use of colour. Colour is freely used to emphasize building forms, trim, and, architectural detail. To maintain cohesion, however, usually there are about two main colours plus one trim colour and perhaps an accent colour. Colours should be of the earth and rural countryside.

2.6 There is a hierarchy of forms that compose the building. These forms often focus on entries and corners. They may also be used to create rhythmic repetition and a feeling of balance.

2.7 There is a horizontal balance from floor to floor. There is a unique pedestrian oriented first floor with a high level of detail and variety; distinct upper storey (often with a rhythmic repetition of windows and detail); topped by a visually significant and pronounced roof.

2.8 Buildings take great advantage of the street and street corners. The building has a prominent street orientation. Street corners are an opportunity to be taken advantage of using architectural forms, doorways, and windows can create a focus at street corners.

2.9 The design of buildings can increase safety and the sense of security. The following guidelines should be considered

2.9.1 There should be no blind spots or potential hiding places especially in areas such as entrances, loading docks, or stairwells. Windows and entrances are encouraged in areas fronting or overlooking public spaces, sidewalks or areas used by the public such as parking

2.9.2 Lighting is important. Entries should be well lit. Adjacent sidewalks and paths should also be lit. A series of low wattage lights placed along the exterior of the building at intervals is better than a few high wattage lights. Glare, especially as seen from off the property, is not necessary and should be avoided.

2.9.3 There should be definition of private space from public areas through paving details, landscaping, low, visually permeable fencing and, entry or architectural features.

2.9.4 Where there is housing located in the same building as commercial uses, the entry to the housing units should be separate from commercial entries, be well lit and visible.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Appendix A-3

Fencing and Street Interface Development Permit Design Guidelines

Commercial, industrial and multiple family development property should have a pleasant and positive interface with the community. While such land uses are limited in the Ellison area it is important that the community have the tools to ensure good design. The “Fencing and Street Interface Design Guidelines” are based upon community design goals for urban design.

This document contains a summary of the objectives and design guidelines. A detailed set of design guidelines including examples, more detailed explanations and an evaluation form is available from the Regional District. Please obtain the detailed design guidelines prior to making an application.

These Design Guidelines will be used in reviewing Development Permit applications as set out in this Official Community Plan. It is important that any plan submitted for a Development Permit demonstrate consideration of the Objectives and Design Guidelines.

1. Objective

The objective is that fencing, berming and landscaping achieve the goal of privacy where necessary, and the demarcation of private and public property; yet provide for a transition and interaction between development and the community.

2. Guidelines

Guideline 1

Fences in industrial areas should be used to screen storage areas and unsightly land uses from view. Fences intended to form a visual barrier should be constructed of solid but attractive materials such as wood or vinyl, not chain link, barbed wire or adhoc materials.

Guideline 2

Where fences in industrial areas border a public road, the fences should be set back form the property line and landscaping provided on the public side of the fence.

Guideline 3

Fences are actually architecture. They can create the effect of a wall and so should have similar design consideration. Fences should have detailing and a design treatment that creates variety and interest yet has an overall cohesive appearance. Attention to the details of design and the skillful use of multiple materials and multiple but harmonized colours is encouraged.

Guideline 4

Fencing, while important to privacy, can create a barrier between a multiple family housing development and the larger community. It is important that design options that provide privacy yet create a softer interface with the neighbourhood be investigated and incorporated.

Edge preferences:

- Landscaping and berms or a combination of the two is preferred to fences and walls,
- Low fences with landscaping and/or berms are preferred to high fences,
- Transparent fencing is preferred to solid fencing or walls

Guideline 5

It is important that multiple family residential developments maintain a strong orientation to the street and the neighbourhood that they are a part of. The good design of fencing and landscaping can maintain safety and identify property yet also create a pleasing integration with the neighbourhood.

- Fences or walls along a property line should be discontinuous… jog in and out.
- Fences or walls should have landscaping (on the development property) located on the public side of the fence,
- Fences or walls should be visually transparent … have breaks or the addition of lengths of material such as wrought iron that allow for visual continuity between the development and public areas
- Landscaping and fencing should change and create a focus at entries and key transition areas such as corners, gates, etc.

Guideline 6

Rather than the wall effect of a single solid fence, there should be a combination of fencing, architecture and landscaping that "layer" between the public and private space across the site. This creates visual interest, creates a sense of ownership and continuity of the private area, and separates public from private.

Guideline 7

Major vehicle entrances are important features and should not be abrupt transitions with the community. Fencing should set back or end entirely while additional landscaping and entry features dominate.

Guideline 8

It is important that there be access for those living in a multiple family development and the larger community. Secondary pedestrian accesses, especially where there are likely to be desired travel destinations such as parks, schools or retail services should be provided. Such pedestrian accesses can incorporate entry design that indicates private property including porticos, recessing, landscaping, elevation change and visually transparent gates. Secondary entries should have detailed design and landscaping fronting public land.

Guideline 9

The design of the interaction between the public and private realm can have an effect upon safety. There are some key principles

- Natural surveillance and observation. The sense of safety improves when people can see others and be seen.
- Necessary emergency access should be accommodated.

- The creation of territorial control. Landscaping, berms and fencing can be used to create a sense of ownership and indicate that there are people that care about what is happening in that space. This avoids the creation of “no man’s lands” of empty space that has no sense of territory or ownership between the buildings and the public realm.
- Access control. Access should be clearly defined in design.
- The design should not create blind spots and potential hiding places

Guideline 10

Where a multiple unit housing development borders a neighbouring single-family residential neighbourhood, the interface of the edge of the development with the neighbouring private property is just as important as with a public space. The design treatment of that property boundary must consider Guidelines 3, 4 and 5.

A combination of fences, landscaping and material can define private and public space yet avoids the creation of an impenetrable barrier that “turns its back” on the street.

Here the architecture, colours and materials create a cohesive design with emphases on entries and clear delineation of private property. A layered effect from building to the property line.

Elevation changes and landscaping connect to public spaces yet create separation and private areas.

A well-lit, secondary pedestrian access that integrates and extends the design both within and outside of the development site.

Here landscaping and a berm create privacy. A hidden pathway behind the berm connects private units to a single access to public sidewalks.

A combination of landscaping and elevation change help create a feeling of privacy and separation without a walled effect. The use of a mixture of solid and metal fencing creates a feeling of openness and connection between the site and its surroundings.

Here the base of the wall is about 4 feet below the level of the road. The change in elevation and abundant landscaping virtually hide the wall. The wall is detailed in a similar way to the architecture of the buildings on the site to create visual interest and continuity.

Appendix A-4

Multiple Unit Residential Building Development Permit Design Guidelines

One of the most important factors in a community is the livability of the area; a pleasant environment that respects the neighbourhood and has a detailed, human scale in its design. The Ellison community has identified a quality environment as being very important and although such land uses are limited in the Ellison area it is important that the tools are available to ensure good design. The “Multiple Unit Residential Design Guidelines” are based upon community design goals for the urban design of multiple unit residential building developments.

This document contains a summary of the objectives and design guidelines. A detailed set of design guidelines including examples, more detailed explanations and an evaluation form is available from the Regional District. Please obtain the detailed design guidelines prior to making an application.

These Design Guidelines will be used in reviewing Development Permit applications as set out in this Official Community Plan. It is important that any plan submitted for a Development Permit demonstrate consideration of the Objectives and Design Guidelines.

1. Design Objectives

Multiple unit residential development, through design, should be a good neighbour and an interactive part of the community. The design of multiple unit residential development should achieve the following objectives;

1.1 A strong, positive relationship between the street or public space, private property, and the building

1.2 A human scale with attention to details and good visual variety yet harmonious design

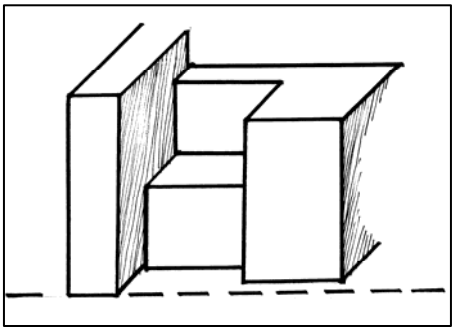
1.3 Landscaping including trees and shrubs

1.4 A good fit with the neighbourhood. Where multiple unit residential buildings are in an existing single-family residential neighbourhood, a residential quality that reflects single-family housing design is of particular importance.

2. Design Guidelines

2.1 The building form should have depth created by a complexity of building planes that recede or step forward both vertically and horizontally. These changes often create a focus such as at entrances or corners.

2.2 The building should have a clearly defined roof with a similar complexity as the building. The roof should step backward or forward and incorporate architectural changes such as a variety of peaks.



2.3 There should be a variety of window shapes and sizes. The windows should have detailing such as trim and mullions.

2.4 There should be the use of a variety of materials and colours that form a harmonious whole in design.

2.5 In 2 or 3 storey buildings it is important on the first floor:

2.5.1 To use materials (either different from the rest of the building or in a unique way) that differentiate and accent the first floor,

2.5.2 Provide a level of detail and orientation in design to the street

2.5.3 Provide a strong visual base to the building. A way of doing this is to use materials, paving, and architectural elements that visually “tie” the building to the ground and layer those materials and design right to the street.

2.6 One building may actually consists of several homes. The building form and design should articulate each unit and reveal the underlying individuality of each unit in the design.

2.7 Lower floor units should have some form of entry available to the street through private space

2.8 New multiple unit residential buildings should minimize the impact upon residential neighbours in single-family homes by placing fencing, landscaping and driveways between the neighbours and the multiple unit residential development. In the case of Sunset Ranch, walls and fencing is to be discouraged and landscaping or berms are encouraged to define exclusivity.

2.9 New multiple unit residential housing should minimize overlook into neighbouring single family residential yards by methods such as considering the placement of windows on upper floors and stepping down the housing height next to residential property.

2.10 The building should have integration with the street and neighbourhood. Individual units and unit entrances should be clearly distinct (individualized) in the building form, hierarchy

of window forms, and the architecture. The boundary between public and private space should be designed using landscaping and architectural features that define private space yet create interaction and transition between the building, the individual units and the street.

2.11 In the case of congregate care housing, the exterior amenity open space should be part of an integrated design. It should include a useable patio area integrated into the landscape of at least 200 square feet (exclusive of entries and paths), and exterior seating options at the major entry to facilitate transportation pickup.

2.12 The design of multiple unit residential development can help create a sense of security and safety for both residents and the neighbourhood. There are some key design guidelines to consider:

2.12.1 Natural surveillance

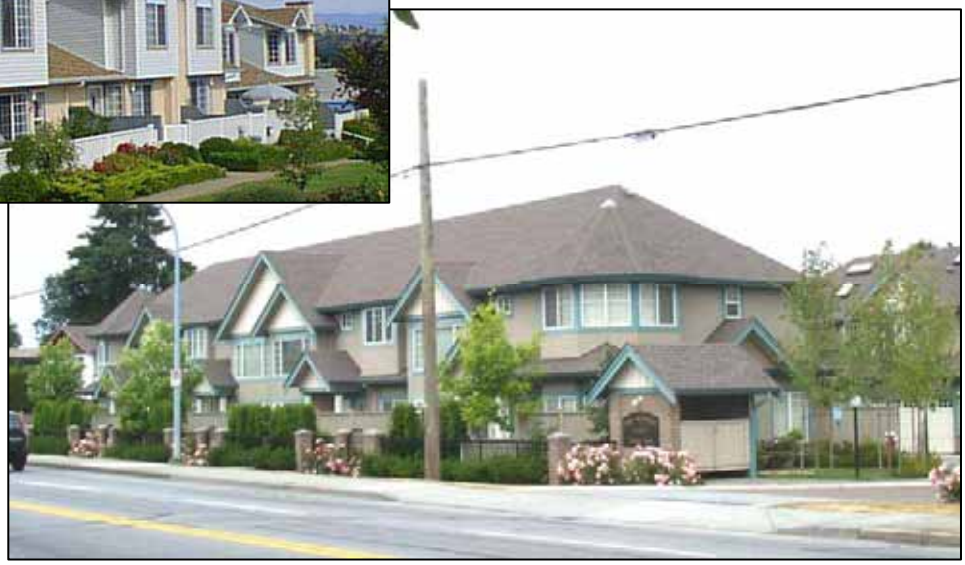
- Ground oriented units and upper storeys should have views onto all parts of their own property and the street,
- The entrances and windows of one unit should be visible from other units
- Doors, stairwells and entrances should be clearly visible and well lit

2.12.2 Territorial definition

- There should be a combination of landscaping, berming or fencing that creates a sense of boundary with the public realm. The intention is to ensure all spaces have a sense of ownership and being cared for.
- Entrances should be clearly identified through landscaping, hard surfaces and architectural treatment. Exterior patios and porches should be well defined and of a useable size

2.12.3 Access definition

- Clearly identified and well-lit accesses to both the site and to the building.



Appendix A-5

Aquatic Ecosystems
Development Permit Design Guidelines

Characteristics – Aquatic ecosystems are wet ecosystems including and surrounding watercourses, lakes, streams, ponds, broadleaf woodlands and wetlands. Some of these ecosystems may be dry during the summer or frozen in winter. The geography and vegetation that surrounds, protects and interacts with the aquatic environment is called the riparian area. Together, the water and the riparian area form an aquatic ecosystem.

Aquatic ecosystems are protected not only because of their great importance to the ecology of the Okanagan but also because legislation of the Province of BC (the *Fish Protection Act*, the *Riparian Area Regulation* and the *Water Act*) and Federal legislation (such as the *Fisheries Act*) all require that the Regional District ensure the protection of the aquatic ecosystem.

Importance – The importance of aquatic ecosystems is far reaching and is only briefly summarized here. In the dry ecology of the Okanagan aquatic habitats are critical for the survival of wildlife and form necessary travel corridors between habitats. Water is an important part of maintaining biodiversity and is essential for many species. Many rare species in the Okanagan are associated with aquatic environments.

The Okanagan also has a limited water supply and the water quality of surface water and aquifers (both below ground and in surface recharge areas) is important. The riparian habitat is a natural water purifier and pollution filtration system. A healthy riparian area also helps slow water flow and prevent erosion.

The entire water system is highly interconnected and fragile. A change in one part of a stream or wetland can have downstream consequences on wildlife, people and property. Finally, the quality of the aquatic environment will affect fish habitat and fish population numbers.

1. Objectives

1.1 To protect, restore and enhance aquatic ecosystems (water, wetland, riparian and broadleaf woodland),

1.2 Protect water quality and quantity,

1.3 Protect vital wildlife functions such as (but not limited to) a travel corridor, a place of refuge, water source, fish habitat, and a breeding habitat to ensure future generations.

2. Guidelines

The following guidelines apply to all development permit applications in all Aquatic Ecosystem Development Permit Areas

2.1 A leavestrip for the protection and restoration of the riparian ecosystem is to remain undisturbed near watercourses. The intention is that the leavestrip will be untouched by development and left in its natural condition, or, if damaged by previous use or construction, the ecosystem restored or enhanced.

2.2 The leavestrip should be evaluated, established and monitored by a professional engineer experienced in environmental assessment and design registered in the province of BC, or, a professional biologist registered in the province of BC, following evaluation of the leavestrip requirements and recommendations. (*Note – There are provisions where undertaking some initial steps to protect the aquatic ecosystem may mean that a development permit and professional evaluation will not be required. See Section 18 of the Official Community Plan for the conditions when an Aquatic Ecosystem Development Permit is not required.*)

2.1.1 The assessment will include (but is not limited to) the consideration of:

2.1.1.1 The Sensitive Ecosystem Inventory of the Regional District, the Sensitive Habitat Inventory and Mapping of the Regional District, and any other environmental information available from the Regional District or provincial environmental agencies.

2.1.1.2 Leave strips of sufficient width to accommodate the dynamic nature of the hydrologic system, maintain water quality, base flows and natural drainage patterns. A report prepared by a professional hydrologist may be required in circumstances where the hydrological condition has been or may be significantly disturbed.

2.1.1.3 The drainage, sediment and erosion control measures and the Storm water Management provisions of the Regional District's Subdivision and Development Bylaw.

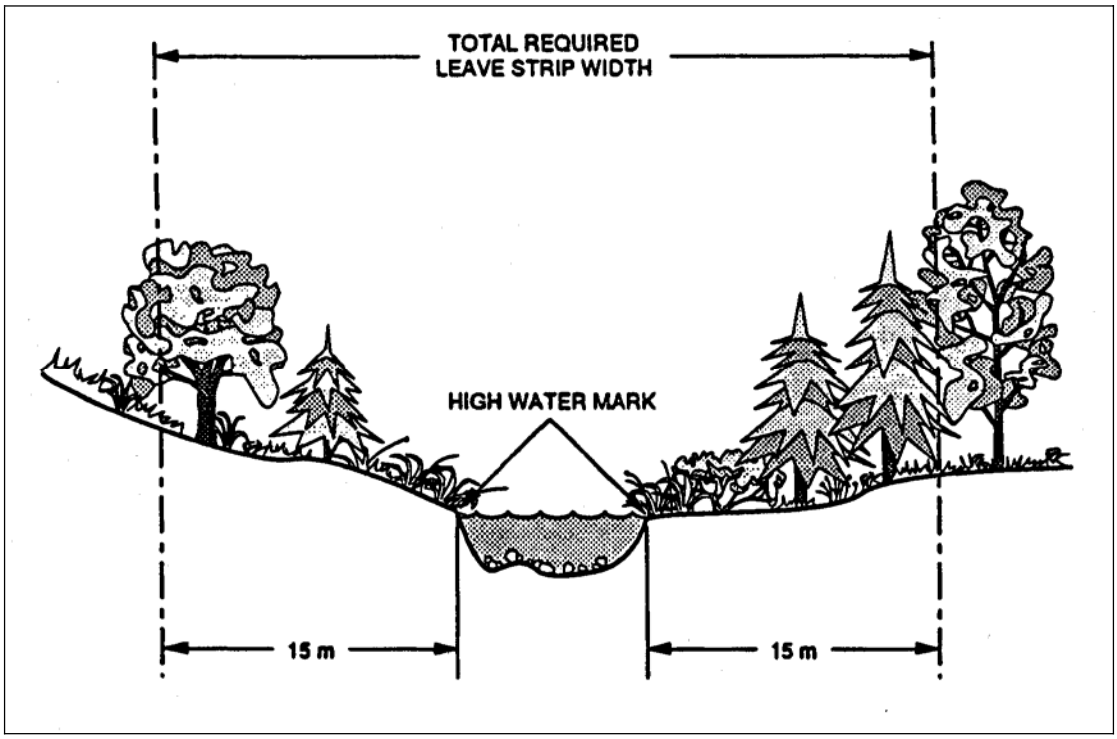
2.1.1.4 Provincial Best Management Guidelines pertaining to aquatic habitats, groundwater management and drinking water protection.

2.1.1.5 An indication of when monitoring of important environmental conditions by the professional will occur.

2.3 Leave strip widths will be determined based on the following factors:

- Whether the watercourse is fish bearing
- Whether the watercourse has downstream water intakes
- What the intended land use is within the property (both within and outside of the Development Permit Area)
- Whether the land use includes livestock storage, on site septic disposal, fuel storage, aggregate extraction, or other sources of potential surface or groundwater contamination
- Proximity to stream or shore spawning areas

- The location of the natural wetland, riparian and broadleaf woodland ecosystem communities
- The location of important denning or nesting habitat
- Ecosystem continuity off site and in the larger area
- The extent of land clearing, berming, or removal of vegetation and topsoil
- The timing of site work and rehabilitation and
- The natural slope of the land.
- In consideration of the guidelines of the development permit area



2.2 Leave strips and open spaces should be linked to develop a continuous network of ecosystems.

2.3 Networks of leave strips, open spaces and foreshore may provide for public access where such access is designed in a way that is not detrimental to the natural environment.

2.4 Where impact on the leavestrip may be permitted during construction, provisions should be in place to rehabilitate the leavestrip using native species. Rehabilitation is intended to restore or enhance the ecosystem in the leavestrip.

2.5 Should damage occur to the leavestrip during construction, the Regional District may require a professional assessment of the damage and a report on recommendations for rehabilitation.

2.6 All leave strips may be required to be identified along their perimeter during all phases of construction by means such as brightly coloured snow fencing in order to prevent any accidental disturbance.

2.7 Heron rookeries (whether occupied or not) are protected by provincial legislation. They are rare and essential habitat for a vulnerable species. Target buffers are 60 metres in urban areas, 200 metres in rural areas and 500 metres in undeveloped areas.

2.8 Avoid the location of road, driveways and utility corridors along, parallel to, or across riparian ecosystems in order to maintain natural connectivity. Where it can be demonstrated that alternatives are not possible, design crossings that are narrow and perpendicular to riparian areas and elevated in order to maintain connections.

2.9 Manage and minimize opportunities for livestock crossings and access to water.

2.10 Maintain hydrologic regimes. Changes to surface and ground water flow can negatively impact aquatic, riparian, wetland and broadleaf woodland ecosystems. Trails, roads, construction and development should be designed to maintain the hydrology of these ecosystems. Inflow and outflow streams should not be dyked or dammed.

2.11 Maintain normal wetland and water processes such as flooding, seasonal drawdown, and groundwater recharge.

2.12 Maintain entire intact ecosystems wherever possible discouraging any disruptive uses. Damage from ATV's, unplanned and unmaintained trails, mountain bikes and vehicles can easily adversely alter this ecosystem and the water quality of the aquifer. Manage access actively with fencing and railings.

2.13 Riparian vegetation should be maintained where intact, or restored where disturbed or where invasive weeds have intruded.

2.14 For land fronting Lake Okanagan, provision may be made in the development permit for recreational access, docks, or marine transport designed in accordance with the best environmental management practices available.

2.15 In general, development design should reflect the objectives and guidelines of the Best Management Practices produced by the province of BC.

3. **Specific Guidelines**

3.1. The following specific objectives and specific guidelines pertain the broadleaf woodland ecosystem as identified by the site-specific assessment or by the Central Okanagan Sensitive Ecosystem Inventory, 2001. They are in addition to the Objectives and Guidelines for aquatic ecosystems and relate to the important characteristics of that particular ecosystem.

Broadleaf woodland ecosystem

Characteristics – Broadleaf woodland ecosystems are where the natural changes in the ecological community over time have resulted in mature broadleaf woodlands as the climax stage of succession (the long term stable ecosystem for the site). Typically these are areas dominated by trembling aspen and other broadleaved trees and shrubs. Broadleaf woodlands are located in broad, moist depressions or areas of subsurface water seepage. This ecosystem can have an understory that is predominantly shrubby with Saskatoon bushes, snowberry bushes, Oregon grape, or grassland. Soils tend to be rich due to decomposing leaf litter and nutrients carried to the site by moisture. These sites are very rare and important ground water (aquifer) recharge areas as well as habitat. The tree cavities found in broadleaved woodlands are important nesting habitat.

Importance – According to the Sensitive Ecosystem Inventory the importance of this ecosystem includes its extreme rarity (covering only .3% of the SEI study area), high biodiversity, specialized habitat (many species depend on features found only in broadleaf woodlands), fragility (the water seepage makes the soils very vulnerable) as well as social and visual values.

Objectives specific to this ecosystem

- To conserve, intact, as much of the ecosystem as possible
- Where there are changes intended, maintain the key characteristics of the ecosystem as much as possible;
    - Aspen and other broadleaf trees and their root systems,
    - a single layered high canopy,
    - a complex understory of grasses and shrubs,
    - extensive and thick leaf litter (or other organic matter) surface layer
    - fragile underlying wetlands and seepage areas.

- There is potential that changes may actually help improve and restore this ecosystem by removing the ingrowth of young coniferous trees that natural fires would have normally periodically cleared out.

Specific Guidelines

3.1.1 Protect nesting and denning sites that were identified on site through an initial reconnaissance or in the ecological inventory. It is important for animals and birds to reproduce and ensure future generations. Important features include dens, raptor nest or perch trees, owl roosts, woodpecker cavities and bat roosts. Cavities in aspen trees are an important unique feature of the broadleaf woodland.

3.1.2 Conserve soil leaf litter and fallen debris. The decay of fallen vegetation is an important source of nutrients as well as habitat and protection for animals.

3.1.3 Should the removal of dangerous trees or encroaching coniferous trees be necessary, when choosing trees to thin or remove maintain the high canopy layer of the forest and its filtered sunlight affect. Choose trees carefully in a way that maintains the key characteristics of the broadleaf woodland ecosystem.

3.1.4 Maintain habitat structures such as standing trees, trees with cavities, fallen trees and snags, and leaf litter

4. Definitions

4.1. In applying Aquatic Ecosystem Development Permit guidelines, the Regional District uses the following definitions:

4.2. Ecosystem - a functional unit consisting of all of the living organisms and abiotic (non-living) factors of a unit or portion of the landscape, together with the processes that link them including nutrient cycling and energy flow.

4.3. Fish Habitat – means spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes

4.4. Ground water - Water occurring below the surface of the ground.

4.5. Habitat – the natural abode of a plant or animal, including all biotic, climatic, and edaphic factors affecting life.

4.6. Leavestrip – an area adjacent to a water feature intended to preserve the biodiversity of the riparian ecosystem, protect and buffer that ecosystem from surrounding activities, maintain and enhance biodiversity by protecting the diverse riparian ecosystems, and, maintain and enhance corridors between ecosystems thus supporting the diverse needs of various species. This area of land and vegetation should remain undisturbed throughout and after the development process

4.7. Riparian area – the area of the stream bank, including any side channels and associated banks, which contains upland areas not normally inundated during high water conditions that has a direct influence on aquatic habitat values.

4.8. Watercourse – include any natural depression with visible banks, or wetland with or without visible banks, with contain water at some time; and include any lake, river, stream, creek, spring, swamp, gulch or surface source of water whether containing fish or not; and include intermittent streams; and includes surface drainage works which are inhabited by or provide habitat for fish.

Appendix A-6

Rural Hillside Development Permit Design Guidelines

Hillsides are important, visually dominant features in the Okanagan. Hillside locations can also be subject to hazards and adverse impacts from subdivision and road building. It is important that future subdivision or proposed major landform changes on the Ellison hillsides be undertaken sensitively, in consideration of environmental and visual impact, and also in consideration of the potential impact on neighbouring properties.

1. Objectives

1.1 To support rural subdivision and road building on hillsides in a manner that minimizes damage to property (both the property under application and neighbouring property) from erosion, soil instability, rock fall, or other identified hazard.

1.2 To support rural subdivision and road building on hillsides in a manner that is sensitive to the natural topography and that protects significant landscape features.

1.3 To support rural subdivision and road building on hillsides in a manner that is responsive to the natural environment and drainage patterns.

2. Guidelines

The following guidelines apply within the Rural Hillside Development Permit area:

2.1 Development opportunities, constraints and conditions of design will be identified on the basis of a topographic and feature survey showing natural slope contours (in 2 to 5 meter contour intervals), spot elevations, swales, knolls, ridgelines, bedrock outcrops, cliffs and slope transitions, seasonal and permanent watercourses, drainage routes, vegetation, top of bank, and break lines.

2.3 The topographic survey will include current and future roads (public, strata, and forest), site grading and post development contours (in 2 to 5 meter contour intervals), water intakes on or adjacent to the development site, prominent views, and will identify potential hazards to neighbouring properties from existing or future development.

2.4 A plan of site remediation including but not limited to; sensitive grading, revegetation, erosion control, and soil amelioration, prepared by the appropriate professional (registered landscape architect, professional forester) should be provided in advance of any site grading or removal of forest vegetation.

2.5 The pattern of development should be responsive to the varied topography and natural landscape. Changes to existing terrain should be kept to a minimum.

2.6 Roads, access, and driveways should follow topography and avoid excessive cut and fills. Roads are encouraged to incorporate gentle curves and avoid long stretches of straight road.

2.7 A reduction of road widths for local roads in order to reduce construction impact may be considered subject to agreement by the road authority

2.8 The impact of road design on potential road access to neighbouring lands beyond should be considered in accordance with the principles of these guidelines.

2.9 Fill or cut slopes exceeding 10 metres in vertical height should be graded to resemble naturally occurring terrain and revegetated.

2.10 Cut and fill slopes and road construction should be safe and not create a hazard of debris torrent or landslide.

2.11 Natural drainage ways should be protected and used when possible.

2.12 Manmade storm drainage and retention ponds should have a natural appearance and restored to the condition of natural environment. Drainage should be designed as natural environmental corridors wherever possible.

2.13 Drainage flow rates offsite should be retained as close as possible to pre-development conditions and drainage retention and detention is encouraged.

2.14 The protection of water quality should be ensured.

Appendix A-7

Wildfire Interface Development Permit Design Guidelines

These Design Guidelines will be used in reviewing Development Permit applications. It is important that construction within the development permit wildfire interface area designated in the Official Community Plan show a consideration of these guidelines. While these guidelines directly apply only to development permit areas, the recommendations for the reduction of wildfire hazard would be wise considerations for many homeowners in the Regional District. Flying embers can ignite structures up to 1.5 kilometers from the fire source.

A detailed set of design guidelines including examples and a more detailed explanation is available from the Regional District. Please obtain the detailed design guidelines prior to making an application.

These Design Guidelines will be used in reviewing Development Permit applications as set out in this Official Community Plan. It is important that any plan submitted for a Development Permit demonstrate consideration of the Objectives and Design Guidelines

A development permit is not required …

Where plans for construction within the development permit wildfire interface area;
- Are submitted for a building permit and;
- The plans show compliance with these guidelines, and,
- An undertaking is provided by the property owner, and
- A restrictive covenant registered to the title of the property, or,

Where a wildfire interface construction development permit previously was issued and the above conditions have previously been met, a development permit will not be required, or, Where the construction, or alterations in accessory buildings or structures, is not in excess of 40 square meters, a development permit will not be required.

Introduction

The Okanagan has a naturally dry climate and a large community interface with forested land. Homes have been lost to wildfire and it will be an ever-present danger in the valley.

An important part of reducing wildfire hazard involves modifying how individual homes are constructed near areas of forested public land such as provincial forest or large forested parks. The accumulation of small choices such as siding material, building material, screening of soffits, screening the tops of chimneys, using noncombustible landscape mulch, and the choice of landscape plants, can add up to either saving or losing a home to wildfire.

The basis for the Guidelines is the document "FireSmart, Protecting Your Community from Wildfire" supported by the Alberta Department of Sustainable Resource Development, the British Columbia Forest Service, Natural Resources Canada, most Canadian provinces and endorsed by the report of the Province of BC "2003 Firestorm Provincial Review".

The design guidelines do not cover all measures for wildfire hazard reduction possible but are minimum standards that focus mainly on new home construction, large additions, and their immediate vicinity. A good source for additional information is www.for.gov.bc.ca/protect/safety/. The Planning Department of the Regional District also has brochures available.

Zones of Fuel Management

The design guidelines are based upon the typical Priority 1 zone of 10 metres from the building established for flat land. While these guidelines represent some minimum requirements, it is advisable to consider a larger Priority 1 zone for properties on a slope, especially on the downhill side. There are three priority areas as outlined in "Fire Smart, Protecting Your Community from Wildfire":

Priority 1 zone is within 10 metres (30 feet) of a building and is the most critical zone. The development permit deals only with this area. While these design guidelines deal with the typical situation, a property owner may wish to consider widening the priority area if located on a slope, especially on the downhill side.

Priority 2 zone begins 10 metres (30 feet) from a building and extends to 30 metres (100 feet) depending upon topography. The more the land slopes, the more the zone should be extended. Radiant heat and burning embers originating from an area this close to a structure may cause it to burn. Vegetation and potential fuels in this area should be managed to reduce fire intensity and rate of spread by methods such as removing dead needles, dead wood and combustible debris from the ground, removing any tree limbs within 2 metres of the ground, and spacing trees so that no tree limb is closer than 3 metres to the next.

Priority 3 zone begins 30 metres from a building and extend to 200 metres or more. High intensity crown fires that occur in this zone may be a potential high source of burning embers.

The guidelines reduce the level of the threat to structures from wildfire but do not eliminate it.

Objective

The objective is to reduce the susceptibility to wildfire of new construction or large additions near the provincial forest interface, or the interface with large forested parks.

Guidelines

1. Roofing – The roof covering shall conform to Class A, B or C fire resistance as defined in the BC Building Code.

Roofs catching fire are the number one cause of building losses during a wildfire event. The roof presents a large, flat area that fire embers can land on and start a new fire. Roofing material has several classifications with Class A being the most fire resistant. Some materials that either fall within the rating system or, can be obtained in forms that meet Class A, B or C requirements, include composite (asphalt and fiberglass) shingles, concrete or clay tile, metal roofing, and wood shake roofing.

2. **Exterior Wall Finishes – Any material used for exterior wall finishes should be fire resistant such as stucco, metal siding, brick, cement shingles, concrete block, poured concrete, logs or heavy timbers as defined in the BC Building Code, and rock.**

Second only to the roof material, siding material is the part of the building most prone to ignite in a wildfire event. The intense heat of the fire itself, fire embers, and burning vegetation at the base of the wall, can individually or all together cause the side of a building to catch fire.

3. Chimneys – All chimneys should have spark arrestors made of 12 gauge (or better) welded or woven wire mesh with mesh openings of less than 12 millimetres.

Chimneys can present a serious hazard as a source of sparks that can start fires, and as a way for burning embers to enter a building.

4. Eaves, vents, and openings – All eaves, attic and under floor openings should be screened with corrosion-resistant, 3-millimetre noncombustible wire mesh (as a minimum).

Vents are important for the healthy air exchange and moisture escape required in a building. They also are ready-made accesses into a building. Unprotected eaves can allow burning embers to enter and also allow flames that are spreading up a wall to penetrate into the roof structure.

5. Windows and glazing – All windows must be double paned or tempered.

Glass can be shattered by the heat of a fire and create openings for fire and burning debris to enter the building. It is highly unlikely that an interior will ignite from thermal radiation through intact glass.

A single pane thickness of glass is most susceptible to collapse. The larger the pane of glass, the more likely it is to shatter.

6. Balconies, decks and porches –

a. Decks should be constructed of heavy timber as defined in the BC Building Code, or, with 1-hour fire resistant rated assemblies or noncombustible construction as defined by the BC Building Code.

b. Manufactured homes should be skirted with a fire resistant material as outlined in the previous guideline for exterior wall finishes.

As with roofs, decks present a large horizontal surface for burning embers to land on and take hold. In addition, decks have an undersurface that also can be a source of fuel for fires. It is important to consider the vulnerability of decks to fire from both above and below.

7. Landscaping on the property within 10 metres (Priority 1 zone) of a building shall not include coniferous evergreen shrubs such as junipers, mugo pines, or coniferous evergreen hedges.

There are three priority zones for the modification of vegetation to reduce wildfire hazard. Priority Zone 1, the most important, is within 10 metres (30 feet) of the building. Without fuel modification in this critical area, the fire intensity and the rate of spread can make firefighting difficult or impossible.

Coniferous evergreen shrubs are resinous and have a large surface area. They are an excellent fuel for fire and can be a source of flames and sparks that can enter a building. Coniferous evergreen shrubs can also be a source of heat that can burn or melt materials and shatter windows.

It is important to choose plants that are less combustible and burn with less intensity. Deciduous shrubs (shrubs that lose their leaves in the winter), broad-leaved evergreen shrubs (such as bearberry, Oregon grape, cotoneaster, rhododendrons, etc.), perennials, annuals and trimmed grass are preferred.

8. No additional or new coniferous evergreen trees are to be planted within 10 metres of the building.

9. It is not advisable to retain previously existing mature coniferous evergreen trees within 10 metres (Priority 1 zone) of the building. Any coniferous evergreen trees that are to be retained on the property that lie within 10 metres (Priority 1 zone) of the building must;

a. Have limbs pruned such that they are at least 2 meters above the ground.

b. Be spaced so that they have 3 metres between crowns. (In other words, the tips of the branches of a tree are no closer than 3 meters to the tips of the branches of another).

c. No limbs should be within 3 meters of the building or attachments such as balconies.

Evergreen trees contain resin, have needles that provide a lot of surface area, and are excellent fuel for fires. Close to a building, they act as a ladder that allows the fire to climb onto the building, under eaves and leap onto roofs. They can also be a source of heat that shatters windows. Deciduous trees are a safer alternative in the Priority 1 area. However, the measures outlined here somewhat limit the hazard should the choice be made to retain pre-existing evergreen trees in the Priority 1 area. White pine,

ponderosa pine and western larch have a medium flammability while most other coniferous evergreens are highly flammability.

10. Landscaping on the property within 10 metres (Priority 1 zone) of a building shall use only noncombustible landscape mulches.

Areas covered with landscape mulches are a large horizontal surface for embers to land on, much like roofs and decks. Some commonly used mulch, such as bark chips, are also highly flammable. The combination of flammability and a large surface area creates a perfect environment for fire. Combustible fuel sources should not be located next to a building.

Various sizes and colours of landscape rock are a common alternative. Another ground covering choice is low-lying plants that are either deciduous (lose their leaves in the fall), or broadleaved evergreen, trimmed grass, annuals or perennials. The use of landscape fabric can reduce the need for a very thick layer of mulch.

Appendix A-8

Sensitive Terrestrial Ecosystem Development Permit Design Guidelines

1. Objectives

1.1 To protect the ecological attributes and socio-economic values that are common to all Sensitive Terrestrial Ecosystems.

1.2 To conserve Sensitive Terrestrial Ecosystems in a relatively natural state while supporting rural land uses.

1.3 To plan land development and new subdivisions carefully in a manner that protects Sensitive Terrestrial Ecosystems.

1.4 To protect Sensitive Terrestrial Ecosystems through the use of buffers.

1.5 To identify feasible habitat corridors connecting core conservation areas.

1.6 Incorporate wildfire management in a way sensitive to the ecosystem that mimics the effect of the natural fire cycles that once occurred in the Okanagan and helped to shape and maintain the natural balance.

2. Overall Guidelines

The following general guidelines apply to all development permit applications in all ecosystems within Sensitive Terrestrial Ecosystem Development Permit Areas:

1.1 An environmental assessment should be prepared by a qualified professional biologist together with other professionals of different expertise, as the project warrants. Hydrologists and hydro-geologists should be consulted where wetlands, riparian areas, and broadleaf woodlands exist within the development area to ensure the proper hydrological function is maintained within these ecosystems. A professional geoscientist should be consulted where there are erosion potential or slope stability hazards. The consultant or team of consultants should have an understanding of wildlife biology, especially for species at risk, geomorphology, environmental assessment, and development planning in British Columbia. Specific expertise in Okanagan Valley wildlife species, wildlife habitat, and ecosystems is highly preferred. (*Note – There are provisions where undertaking some initial steps to protect the ecosystem may mean that a development permit and professional report will not be required. See Section 18 of the Official Community Plan for the conditions when a Sensitive Terrestrial Ecosystem Development Permit is not required.*)

1.2 Discourage settlement, construction, land disturbance, and other development within or directly adjacent to sensitive terrestrial ecosystems.

1.3 Concentrations of high quality ecosystems and habitat for rare species should be prioritized for conservation.

1.4 Delineate buffers around sensitive terrestrial ecosystems. Fencing may be necessary along some buffers where further adjacent development and activity is anticipated.

1.5 Avoid the creation of isolated islands of ecosystems. Delineate corridors between sensitive terrestrial ecosystems to create interconnectedness especially for critical wildlife travel routes.

1.6 Conserve snags and standing dead trees where safe to do so. Soft decaying wood is a valuable home and food source for many birds and animals. For some species it is essential. Standing dead trees are typically topped to within 6 metres of the ground in an area that is safe should it eventually fall. It is recognized that dead wood decays over time and the eventual removal of standing dead wood and snags is acceptable. Locate settlements, drives, construction and other development away from existing large, old trees and snags. Artificial snags can be located in safe areas to help improve habitat.

1.7 Plan, design and implement land development and subdivision to protect endangered, threatened, or vulnerable species or plant communities. Avoid disturbance to sites where rare plants are growing and where rare natural plant communities occur, and maintain critical habitat structures such as old trees, snags, trees with cavities, natural grasslands.

1.8 Conserving trees in communities (groups of trees along with their associated understory) rather than isolating individual specimens is preferred. Groups of trees form a larger intact ecosystem and are more likely to maintain the important characteristics of the ecosystem over time than a few scattered trees. However, some ecosystems are characterized by or may contain some isolated trees and their conservation as well is important.

1.9 The conservation of trees should extend beyond the drip line of the tree. The roots of established trees are very sensitive. A trees root system on the surface and below ground may be larger than the part of the tree you see above ground. Damage to the roots (especially in mature trees) can impede the trees ability to obtain water and nutrition and may eventually kill the tree. The drip line is an imaginary line drawn around the tree(s) outside the full extent of the branches.

1.10 Maintain water quality. Water quality can be affected by excessive land alteration, erosion, and the improper use and storage of chemicals and hazardous materials.

1.11 Prevent disturbance of nesting sites and breeding areas. It is important that animals have the habitat that supports their reproduction and so ensures future generations.

1.12 Control invasive species.

1.13 Restore native vegetation where it has been disturbed.

1.14 Carry out erosion and sedimentation control measures to prevent ecosystem degredation.

1.15 Restore the effects of the natural cycle of low intensity fire once common to the Okanagan. The suppression of fire by mankind has dramatically altered the ecology of the valley as well as increased the available fuel for wildfire. Wildfire hazard mitigation can happen in an environmentally sensitive way that restores ecosystems to the natural condition that would be expected if the normal cycle of fire was permitted to affect the environment.

1.16 Identify critical habitat. Where disturbance cannot be mitigated it may be acceptable, at the discretion of the Director of Planning, to do environmental improvements off the property in compensation for loss on-site with the intention of no net loss of critical habitat overall in Ellison.

1.17 Plan land development carefully.

3. Specific Guidelines

The following specific objectives and specific guidelines pertain the specific ecosystems as identified by the site-specific assessment or by the Central Okanagan Sensitive Ecosystem Inventory, 2001. They are in addition to the Overall Objectives and Overall Guidelines and relate to the important characteristics of that particular ecosystem.

1.1 Old Forest Ecosystems

Characteristics - Old forest ecosystems are forests that are dominated by large, old trees. Historically, most forests had frequent surface fires that killed most young trees and allowed only a few trees to live in the understory. The big trees were generally multi-aged and had a single layered canopy. Understories were open and dominated by grasses and shrubs. Frequent low intensity fire limited the amount of shrubby growth and dead wood on the ground. The control of natural, frequent, low intensity fires has led to degradation of these ecosystems due to infilling of young trees and plants and excessive ground debris.

Importance – According to the Sensitive Ecosystem Inventory the importance of this ecosystem includes its extreme rarity (only .5% of the SEI study area), high biodiversity, specialized habitat (many species depend on features found only in old forests), as well as social and visual values.

Objectives specific to this ecosystem

- To conserve, intact, as much of the ecosystem as possible
- Where there are changes intended, maintain the key characteristics of the ecosystem as much as possible;
    - big old trees and their root systems,
    - a single layered high canopy,
    - as well as an understory of grasses, shrubs or wetland.
- There is potential that changes may actually help improve and restore this ecosystem by removing the ingrowth of young trees, scrub and dead ground debris that natural fires would have normally periodically cleared out.

Specific Guidelines

1.1.1 Protect nesting and denning sites that were identified on site through an initial reconnaissance or in the ecological inventory. It is important for animals and birds to reproduce and ensure future generations. Typically, dens and nests in this ecosystem are found in and around old trees, snags, and the roots of fallen trees.

1.1.2 Manage access to minimize vehicular and livestock access. The root systems of old trees are sensitive to disturbance and the soils in this ecosystem may be dry with sparse vegetation and easily disturbed and eroded.

1.1.3 Design linear corridors such as roads, driveways, or trails to be as narrow as possible, create as little disturbance as possible and configure them to allow for wildlife crossings.

1.1.4 When choosing trees to thin or remove, maintain the high canopy layer of the forest and its filtered sunlight affect. Choose trees carefully in a way that maintains the key characteristics of the old forest ecosystem.

1.2 Grassland Ecosystems

Characteristics – Grasslands are dominated by bunchgrasses with scattered broadleaf perennials and wildflowers. Grasslands are found in dry areas where frequent, low intensity natural fires historically occurred. There are two categories of grassland. "Grassland" ecosystems are open and dominated by grasses and wildflowers with a surface mulch of decaying vegetation, lichens and mosses. "Shrubland" ecosystems are grasslands that contain shrubs such as snowberry, saskatoon berry, and roses. This ecosystem is typically not as dry as the grassland ecosystem and so can sustain some scattered shrubs. The soils of the shrubland ecosystem are typically richer than open grasslands.

Importance – According to the Sensitive Ecosystem Inventory the importance of this ecosystem includes its extreme rarity (covering only 1.5% of the SEI study area), high biodiversity, high sensitivity to disturbance (due to very fragile soils), as well as social and visual values.

Objectives specific to this ecosystem

- To conserve, intact, as much of the ecosystem as possible

- Limit disturbance. Because of the lack of moisture and the poor nature of the soils disturbance in the grassland ecosystem can damage the thin crust of viable soil and recovery is very tenuous and slow.
- Where there are changes intended, maintain the key characteristics of the ecosystem as much as possible;
    - a predominance of native grasses and perennials (with some scattered shrubs on the moister sites with better soils),
    - Conservation of the vital thin active surface soil layer.
- Remove invasive weeds and maintain a healthy ecosystem so that invasive weeds cannot re-establish themselves.
- There is potential that changes may actually help improve and restore this ecosystem by removing the ingrowth of young trees encroaching into the grasslands that natural fires would have normally periodically cleared out.

Specific Guidelines

1.2.1 Protect nesting and denning sites that were identified on site through an initial reconnaissance or in the ecological inventory. It is important for animals and birds to reproduce and ensure future generations. Many grassland birds are ground nesters.

1.2.2 Manage access to minimize vehicular and livestock access. The root systems and thin soils of grasslands are sensitive to disturbance and rely on a very thin active layer of the soil. This ecosystem is one of the most sensitive to surface disturbance.

1.2.3 Protect large old trees (and their root systems) and snags. Such isolated trees scattered through the grasslands provide shelter, nesting habitat, and food source for wildlife.

1.2.4 Remove encroaching trees. Without the natural cycle of fire in the Okanagan, the forests that neighbour the grasslands eventually encroach and destroy this very rare ecosystem.

1.2.5 Minimize soil disturbance.

1.2.6 Manage livestock use. Overgrazing can seriously damage or destroy native grasslands. Also the poor timing of grazing can mean that native plants cannot reproduce or suffer damage. Excessive or improper grazing can cause enough damage to allow invasive weeds (often detrimental to grazing animals) to colonize an area.

1.2.7 Encourage the maintenance of natural sites and the planting of gardens with native, dry land species. This can actually extend habitat for native birds and animals into the backyard.

1.3 Coniferous Woodland Ecosystems

Characteristics – Coniferous woodland ecosystems have open coniferous tree canopies of scattered ponderosa pine and Douglas fir with an understory of plants such as grasses, saskatoon bushes, and arrow leaf balsam root. They occur on steep sites, south-facing slopes, and rocky knolls where the shallow soils and limited moisture prevent a dense forest from forming. This ecosystem consists of various types of ecological communities depending upon the stage of succession. Succession is the transition of ecosystems from one to another as ecological communities replace each other through time. Those successional stages begin with a shrubby understory and only a few young trees, progressing to a growing young open forest, and finally an open forest with a high canopy and mature trees. Historically these ecosystems burned frequently and the suppression of natural, frequent, low intensity fires has led to degradation of these ecosystems due to infilling of densely packed young trees and plants, and the accumulation of excessive ground debris.

Importance – According to the Sensitive Ecosystem Inventory the importance of this ecosystem includes its rarity (only 15.6% of the SEI study area), high biodiversity, specialized habitat (many species depend on the broad range of habitat features found in coniferous woodland), fragility (due to shallow soils, steep sites and sandy soils), as well as social and visual values.

Objectives specific to this ecosystem

- To conserve, intact, as much of the ecosystem as possible
- Priorize the conservation of mature woodlands over younger successional stages. Younger successional woodlands form a good buffer for mature areas.
- Where there are changes intended, maintain the key characteristics of the ecosystem (given its successional stage) as much as possible;
    - trees and their root systems,
    - as well as an understory of grasses and shrubs associated with the trees.
- Remove invasive weeds and maintain a healthy ecosystem so that invasive weeds cannot re-establish themselves.
- Limit disturbance. Because of the lack of moisture and the poor nature of the soils disturbance in the coniferous woodland ecosystem can damage the thin crust of viable soil and recovery is very tenuous and slow.
- There is potential that changes may actually help improve and restore this ecosystem by removing the ingrowth of young trees encroaching into the woodlands and the

accumulation of ground debris that natural fires would have normally periodically cleared out.

Specific Guidelines

1.3.1 Protect nesting and denning sites that were identified on site through an initial reconnaissance or in the ecological inventory. It is important for animals and birds to reproduce and ensure future generations. Important features include dens, raptor nest or perch trees, owl roosts, woodpecker cavities and bat roosts..

1.3.2 Manage access to minimize vehicular and livestock access. The root systems and thin soils of coniferous woodlands are sensitive to disturbance and rely on a very thin active layer of the soil. This ecosystem is one of the most sensitive to surface disturbance.

1.3.3 Minimize soil disturbance.

1.4 Sparsely Vegetated Cliff and Rock Ecosystems

Characteristics – Sparsely vegetated cliff and rock ecosystems occur on sites where rock, cliffs, or talus slopes only allow for discontinuous vegetation cover interspersed with bedrock or blocks of rock. This ecosystem provides protected shelves and crevices that are important for shelter, breeding, and overwintering for a variety of reptiles, animals and birds. Slopes with a warm orientation are especially important.

Importance – According to the Sensitive Ecosystem Inventory the importance of this ecosystem includes its extreme rarity (only 3% of the SEI study area), high biodiversity, specialized habitat (a number of species including some threatened or endangered species are dependant on these habitats), as well as social and visual values.

Objectives specific to this ecosystem

- To conserve, intact, as much of the ecosystem as possible
- Where there are changes intended, maintain the key characteristics of the ecosystem as much as possible;
    - Exposed rough rock and its surrounding plant community,
    - Talus slopes and debris accumulation at the base of cliffs and rock outcrops
    - Access to and from the area for wildlife that needs this as essential habitat,
    - Future protection from disturbance.

Specific Guidelines

1.4.1 Protect nesting and denning sites that were identified on site through an initial reconnaissance or in the ecological inventory. It is important for animals and birds to reproduce and ensure future generations. Important features include hibernacula (hibernation chambers) for snakes and reptiles, raptor nests or perch trees, nesting cavities, woodpecker cavities, and bat roosts.

1.4.2 Manage access to minimize vehicular and livestock access. Avoid roads near hibernacula and prevent the disturbance of snake hibernacula. Manage road location to prevent snake mortality.

1.4.3 Minimize soil disturbances and minimize disturbance of rock debris.

1.4.4 Plan, design and implement land development and subdivision to protect endangered, threatened, or vulnerable species or plant communities. Avoid

disturbance to sites where rare plants are growing and where rare natural plant communities occur, and maintain habitat structures such as talus slopes at the base of rock outcrops, steep faces or rock outcrops and cliffs, scattered large old trees and snags.

1.4.5 Protect large old trees (and their root systems) and snags. Such isolated trees scattered through the sparsely vegetated areas provide shelter, nesting habitat, and food source for wildlife.

1.4.6 Discourage rock climbing in areas that have not been assessed for important habitat considerations. Do not allow rock climbing in important nesting, denning and other habitat features when identified.

1.5 Mature Forest Ecosystems

Characteristics – Mature forest ecosystems are forests of multi-aged trees (deciduous, coniferous or both) ; mostly mature with a few large old trees. There is a single-layered canopy of largely older trees with understories dominated by grasses and shrubs. This ecosystem has been greatly altered by the suppression of the natural, low intensity fires that were historically frequent in the Okanagan. The formerly open and park-like forests are infilling with waves of young trees and dead material is accumulating on the ground. Mature forests provide excellent buffers for old forests and have good potential to be restored to their former stand structure. Where sites are wetter and can support more growth, mature forests may be multi-layered with more difference in ages in the trees.

Importance – According to the Sensitive Ecosystem Inventory the importance of this ecosystem includes its limited extent (only 9.9% of the SEI study area), potential as a future old growth forest (thus expanding that critical habitat), high biodiversity, as a buffer and for connectivity between other ecosystems, as well as social and visual values.

Ojbectives specific to this ecosystem

- To conserve, intact, as much of the ecosystem as possible
- Where there are changes intended, maintain the key characteristics of the ecosystem as much as possible;
    - A high canopy over a multilayered forest
    - Characteristics that support the areas potential to become an old growth forest

- There is potential that changes may actually help improve and restore this ecosystem by removing the ingrowth of young trees, scrub and dead ground debris that natural fires would have normally periodically cleared out.

Specific Guidelines

1.5.1 Protect nesting and denning sites that were identified on site through an initial reconnaissance or in the ecological inventory. It is important for animals and birds to reproduce and ensure future generations. Important features include dens, raptor nest or perch trees, owl roosts, woodpecker cavities and bat roosts..

1.5.2 Manage access to minimize vehicular and livestock access. The root systems and thin soils of coniferous woodlands are sensitive to disturbance and rely on a very thin active layer of the soil. This ecosystem is one of the most sensitive to surface disturbance.

1.5.3 When choosing trees to thin or remove, maintain the high canopy layer of the forest and its filtered sunlight affect. Choose trees carefully in a way that maintains the key characteristics of the mature forest ecosystem.

1.5.4 Minimize soil disturbance.

1.6 Disturbed Grassland Ecosystems

Characteristics – Disturbed grassland ecosystems were once intact grasslands that now contain between 20% and 50% invasive weeds like diffuse knapweed and sulphur cinquefoil. Grasslands that were covered by more than 50% of invasive weeds were not included in the inventory as, sadly, they would be too challenging to restore and save.

Importance – According to the Sensitive Ecosystem Inventory the importance of this ecosystem includes its extreme rarity (only 2.3% of the SEI study area), high biodiversity, potential to be restored to the rare natural grassland ecosystem, as well as social and visual values.

Objectives specific to this ecosystem

- To restore as much of the ecosystem to the natural grassland ecosystem as possible and conserve it.

- Remove invasive weeds and maintain a healthy ecosystem so that invasive weeds cannot re-establish themselves.
- Limit disturbance. Because of the lack of moisture and the poor nature of the soils disturbance in the grassland ecosystem can damage the thin crust of viable soil and recovery is very tenuous and slow.
- Where there are changes intended, maintain the key characteristics of the ecosystem as much as possible;
    - a predominance of native grasses and perennials with some scattered shrubs on the moister sites with better soils,
    - conservation of the vital thin active surface soil layer.
- There is potential that changes may actually help improve and restore this ecosystem by removing the ingrowth of young trees encroaching into the grasslands that natural fires would have normally periodically cleared out.

Specific Guidelines

1.6.1 All Specific Guidelines that apply to the Grasslands Ecosystem apply to the Disturbed Grasslands ecosystem.

1.6.2 The removal of invasive weeds and the restoration of the grassland is a priority.

4. Definitions

4.1 In applying Sensitive Terrestrial Ecosystem Development Permit Design Guidelines, the Regional District uses the following definitions:

Disturbance: A discrete force that causes significant change in structure or composition through human caused events such as cutting trees, driving vehicles off-road, grazing of domestic animals.

Ecosystem: A functional unit consisting of all of the living organisms and abiotic (non-living) factors of a unit or portion of the landscape, together with the processes that link them including nutrient cycling and energy flow. An ecosystem can be any size, but here we define them as a portion of the landscape with relatively uniform vegetation and soils.

Erosion: The loosening and removal of soil by running water, wind or glaciers. Also can be caused by construction, development and disturbance.

Forest encroachment: The establishment and growth of trees onto areas formerly dominated by grasses (grasslands). This phenomenon is usually associated with the suppression of the natural fire cycle by man.

Habitat: The natural abode of a plant or animal, including all biotic, climatic, and edaphic factors affecting life.

Hibernacula: A refuge (den) from extreme conditions, usually during winter; generally applies to animals that undergo extended dormancy, such as reptiles and bats; these are usually specific sites and are used by countless generations.

Hydrological: Water-related features and processes.

Invasive species: Species that were absent in undisturbed portions of the landscape and will invade or increase, especially following disturbance.

Litter: The uppermost layer of organic debris on the soil surface.

Plant community: A unit of vegetation with relatively uniform species composition. Plant communities also tend to have characteristic environmental features such as soil type, topographic position, and climate.

Riparian: Terrestrial areas adjacent to the banks of a stream or any other water body that are influenced by that stream or water body.

Sensitive ecosystem: Those remaining natural terrestrial ecosystems, which are considered, fragile or rare in the SEI study area: wetlands, riparian, old forest, grassland, broadleaf woodland, coniferous woodland, and sparsely vegetated ecosystems.

Slope stability: Pertains to the susceptibility of slopes to landslides or the rupture and collapse or flow of surficial materials, soil or bedrock.

Talus: Angular rock fragments accumulated at the foot of a steep rock slope and being the product of successive rock falls.

Understory: In a forest or woodland, the plants growing beneath the canopy of other plants (trees).

Weeds: Weeds can be commonly defined as plants growing in where it is unwanted or a plant having a negative value within a given management system. Here we define weeds as plants that do not naturally occur in an area.

Wildlife: Animals, such as invertebrates, amphibians, reptiles, birds and mammals.

Appendix B-1

Sunset Ranch Neighbourhood Plan

This neighbourhood plan was completed several years ago and the site is zoned accordingly. A copy of the neighbourhood plan “Sunset Ranch” can be viewed or purchased at the Regional District Planning Services Department offices. The Sunset Ranch CD zone (CD-1) can be viewed in the text of Zoning Bylaw #871, and on the zoning maps, both available at the Regional District website (www.regionaldistrict.com) in the Planning Department Section or at the Planning Services Department offices.

The following are key points form the completed Sunset Ranch Comprehensive Development Plan.

Overview

The plan was prepared in consideration of the Regional District's Ellison Area Official Community Plan and policies with respect to development on hillsides, adjacent to watercourses, integration of natural features and minimizing site disturbance and tree removal.

The plan builds on the key site conditions to create a comprehensively planned residential community with a maximum of 450 residential units. Of the total 99.24 hectares (245 acres) area encompassed by the Sunset Ranch development approximately 23 hectares (57 acres) are slated for residential development.

The concept development plan includes three residential categories incorporating a variety of unit types and densities. The following statistical summary details the approximate allocations of the proposed land uses.

Potential unit count/density

Development Cell		Area (hectares)	Area (acres)	Units
A – Cluster Villa		2.10	5.18	78
B – Cluster Villa		0.77	1.90	29
C – Cluster Villa		2.10	5.19	78
D – Cluster Villa		1.71	4.23	65
	Subtotal	**6.68**	**16.50**	**250**
E- Cluster Estate		1.06	2.62	21
F- Cluster Estate		0.40	0.99	8
G- Cluster Estate		0.74	1.83	15
	Subtotal	**2.20**	**5.44**	**44**
H - Single Family Cluster		2.48	6.13	27
I - Single Family Cluster		2.94	7.26	32
J- Single Family Cluster		2.24	5.53	25
K - Single Family Cluster		3.09	7.63	34
L - Single Family Cluster		3.45	8.52	38
	Subtotal	**14.20**	**35.07**	**156**
Total		**23.08**	**57.01**	**450**

Gross density

99.24 hect./ 450 units = 4.53 Units/Gross hectare (1.8 units/gross acre)

Assumptions are:

1. Single Family Cluster Homes - 11 units/gross hectare
2. Cluster Estate Homes – 20 units/gross hectare
3. Cluster Villa Homes – 37.5 units/gross hectare
4. Total Approximate Area West Parcel 56.40 hectares
5. Total Approximate Area East Parcel 42.84 hectares
6. Total West Parcel Developed area - 11.84% (6.68 hectares)
7. Total East Parcel Developed area - 38.28 % (16.4 hectares)

Layout

The Illustrative Concept Plan “Figure 8” indicates development clusters and a conceptual layout for the new neighbourhood.

Parks and Open Space

The Illustrative Concept Plan “Figure8” identifies two potential public neighbourhood park siteds integrated by the linerar park/pathway network which will provide pedestrian connections betweent her esidential enclaves adjoining residential areas, Scotty Creek School and the new neighbourhood parks. The public trails will be dedicated to the Regional District.

The interface between the proposed residential enclaves and the neighbouring agricultural rangelands will be of significance to ensure a peaceful co-existence. Through extensive discussions with the Provincial Agricultural Land Commission a buffer/leave strip will be established along the east boundary of the development. The buffer/leave strip size and design will be developed through ongoing discussions with the Provincial Agricultural Land Commission.

Road Network

Anderson Road – A conceptual 2 lane collector road alignment for a proposed Anderson road extension was undertaken as part of the is study process. It was determined that a new east/west alignment could be accommodated within Ministry of Transportation standards (road grade of 8%) that conceptually would join with the existing Anderson road at the western entrance to the sunset Ranch Golf Course and extending through the Sunset Ranch property and joining with the Deadpine Sierra area. The proposed conceptual alignment has received endorsement from both the Provincial Agricultural Land Commission and the Ministry of Transportation.

On-site road network – Access to the golf course and residential enclaves will be from the new Anderson Road alignment. The internal road system will provide access to individual housing clusters and be designed within Ministry of Transportation strata development standards. Within these standards, the internal road system will be strategically placed to minimize site disturbance and maximize visual coherence. All of the internal traffic circulation will be entering and exiting the site form the main entrance off of Anderson Road. An emergency only exit is proposed for an alternative fire route connecting to Scotty Creek Road.

Traffic Generated by the proposed development – The “t” intersection of Old Vernon Road and Anderson Road will require improvement. An additional left turn lane will be added for southbound traffic on Anderson Road as well as intersection alignment improvements to correct the angle of the intersection to improve sight lines.

Implementation

The Regional District will prepare a comprehensive development zone with the purpose of providing for a residential golf course community based upon the Sunset Ranch Concept Development Plan.

The zone should contain the following principle permitted uses:

a)

NOTE – COMPLETE WITH REFERENCE TO POINT 2 PAGE 35 AND PUT IN KEY POINTS GOING ON FROM THERE.
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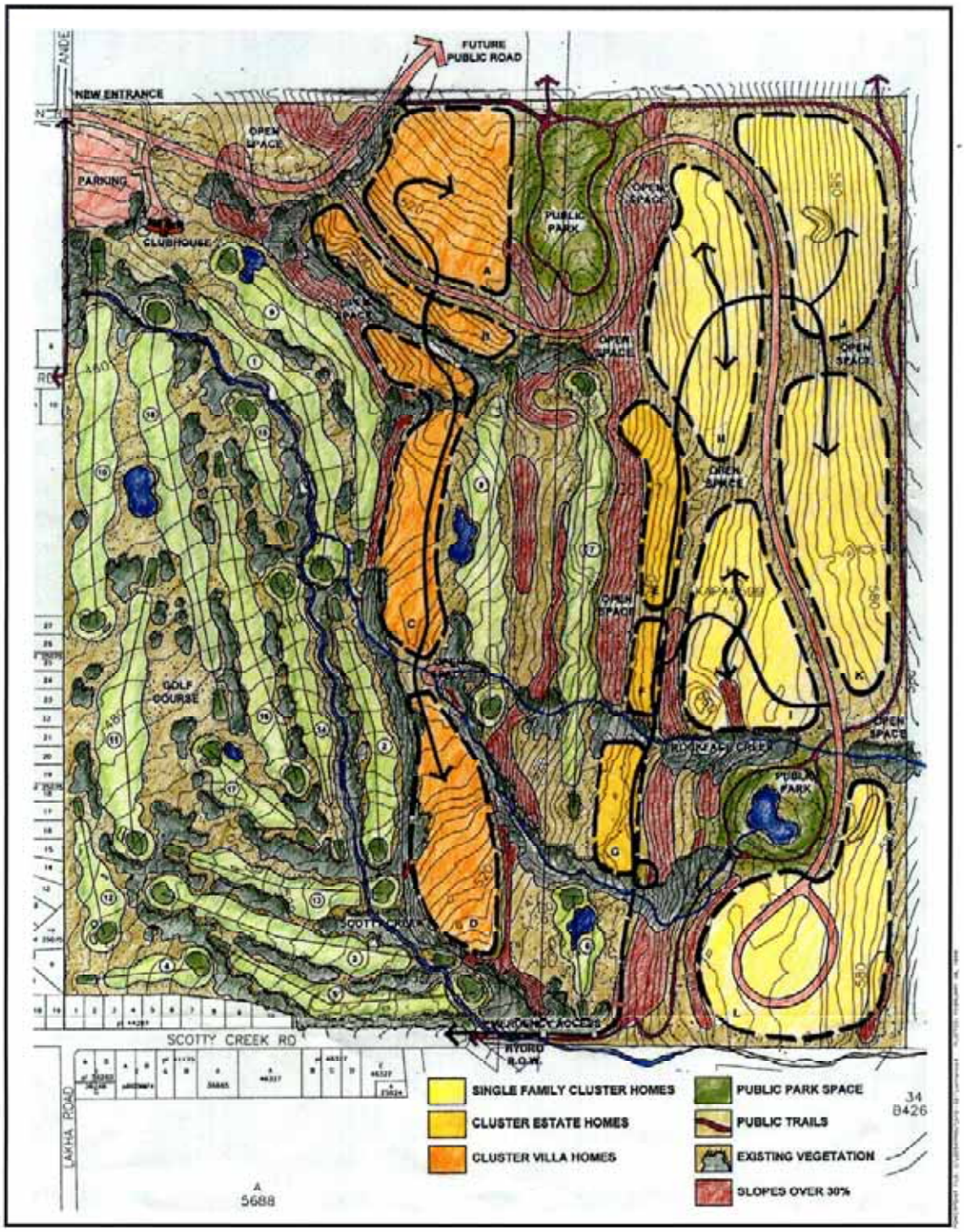

SUNSET RANCH
CONCEPT DEVELOPMENT PLAN

ILLUSTRATIVE CONCEPT PLAN

SCALE 1:2000

Figure 8

TRUE

REGIONAL DISTRICT
OF CENTRAL OKANAGAN

Appendix C-1

Agricultural Plan

The purpose of the Agricultural Plan is to enhance the viability of the agricultural sector in the Regional District by addressing farm viability issues arising from resource potential, diversification opportunities, urbanization conflicts, and competition for agricultural land. While it is recognized that there are a broad range of issues and jurisdictions that have an impact upon agriculture, the main focus of this Agricultural Plan is on those issues that lie within the jurisdiction of the Regional District of Central Okanagan.

A copy of the Agricultural Plan can be viewed or purchased at the Regional District Planning Services Department offices. The Plan is also available at the Regional District website (www.regionaldistrict.com) in the Planning Department Section or at the Planning Services Department offices.