

SCHEDULE "U"³

OFFICIAL COMMUNITY PLAN OF THE RESORT MUNICIPALITY OF WHISTLER

Blackcomb Phase V Development

1. **Scope and application**
 - 1.1 This Blackcomb Phase V Development Official Community Plan applies to all those lands shown outlined and delineated in heavy black on Schedule "A" hereto (hereinafter referred to as the "Blackcomb Phase V Lands").
 - 1.2 This Blackcomb Phase V Development Official Community Plan forms part of the Resort Municipality of Whistler Official Community Plan and if any provision of this Schedule "U" is in conflict with any other provision of the Resort Municipality of Whistler Official Community Plan, the provisions of Schedule "U" shall govern.
 - 1.3 This Blackcomb Phase V Development Official Community Plan is a general statement of the broad objectives and policies of the Council of the Resort Municipality of Whistler respecting the form and character of development and the proposed land uses for the Blackcomb Phase V Lands.
 - 1.4 The Development Concept Plan, being Schedule "B-1" to this Blackcomb Phase V Development Official Community Plan, shows the approximate locations, amount and type of accommodation development proposed for the Blackcomb Phase V Lands.
 - 1.5 The Development Envelope/Tree Retention Plan, being Schedule "B-2" to this Blackcomb Phase V Development Official Community Plan, shows the approximate development envelopes, trail alignments, access routes, tree retention and mitigation zones, and tree replanting and landscape zones required for the Blackcomb Phase V Lands.

³ Bylaw 1111-95/10/10

- 1.6 No industrial or agricultural land uses are proposed for the Blackcomb Phase V Lands.
- 1.7 The Blackcomb Phase V Lands contain no sand or gravel deposits suitable for future extraction and no provision has been made therefor.
- 1.8 No schools, parks, waste treatment or disposal sites are planned for the Blackcomb Phase V Lands.

2. Designation

- 2.1 Pursuant to s.945(4)(b) of the Municipal Act, the Blackcomb Phase V Lands are designated as an area for the protection of development from hazardous conditions.
- 2.2 Pursuant to s.945(4)(e) of the Municipal Act, the Blackcomb Phase V Lands are designated as an area for the establishment of objectives and the provision of guidelines for the form and character of commercial and multi-family residential development.
- 2.3 Pursuant to s.945(4)(a) of the Municipal Act, the Blackcomb Phase V Lands are designated as an area for the protection of the natural environment.

3. Justification

3.1 Protection from Hazardous Conditions

The Blackcomb Phase V Lands are subject to flooding and debris flows from Horstman Creek, and significant surface and sub-surface runoff occurs across the entire site. Development of the Blackcomb Phase V Lands requires special measures to address these hazardous conditions.

3.2 Form and Character of Development

The Blackcomb Phase V Lands are adjacent to the Blackcomb Benchlands, the CP Golf Course and Blackcomb Mountain, and are in close proximity to Lost Lake Park. As such, the development will constitute an extension of the tourist accommodation of the Blackcomb Benchlands, and a transition to the recreational park and alpine areas. It is the objective of the Municipality that all development maintain consistent and complementary design standards in this resort focal area.

The Blackcomb Phase V Lands are characterized by irregular forested alpine terrain which require careful

site planning to minimize the visual and environmental impact of development. Site clearing and excavation must be sensitively handled to maintain or enhance the character of the area. Development must be subject to strict use, density, height and design controls, and must respect the natural site features in consideration of scale. The guidelines must ensure that the development remains visually and physically integrated with its mountain resort setting.

3.3 Protection of the Natural Environment

The Blackcomb Phase V Lands are comprised of a valuable mature forest ecosystem and a wildlife habitat contained within. This ecosystem requires the preservation of minimum island sizes of trees to be sustainable. Due to the difficulty of landscaping and rehabilitation of forest stands on steeper slopes, the retention of trees is very important.

The steeply sloping lands of Blackcomb Phase V may be subject to erosion and may contain drainage corridors. The addition of roads, parking lots, buildings, retaining walls, pedestrian paths, etc. to a site has a definitive effect on the environment which will produce changes in ecology. It is best to make as small a fundamental change in the environment as is practical.

4. Guidelines

4.1 Protection from Hazardous Conditions

(a) In order to ensure adequate protection from the Horstman Creek flooding hazards, no subdivision of the Blackcomb Phase V Lands should be approved until a plan of flood proofing works including training berm, channel improvements, landscaping, and right-of-way acquisition has been approved by the Minister of Environment.

(b) In order to ensure adequate protection from erosion, soil instability, and poor drainage, the Municipality may regulate by development permit all land clearing, land filling, land grading, irrigation works, and landscaping. Special measures may be required around the buildings to address surface and sub-surface runoff.

4.2 Form and Character of Development

(a) The design, siting and exterior finishes of all buildings, structures, and landscaping on the Blackcomb Phase V Lands shall respond to the forested alpine setting, and shall conform as far

as reasonably possible to the Design Guidelines, being Schedule "C" to this Blackcomb Phase V Official Community Plan. Such guidelines are subject to the reasonable interpretation of Council in considering the issuance of Development Permits.

- (b) The general pattern of subdivision of the Blackcomb Phase V Lands shall be in reasonable conformance with the parcelization shown on the Development Concept Plan, being Schedule "B-1" to this Blackcomb Phase V Development Official Community Plan.

4.3 Protection of the Natural Environment

- (a) Those stands of trees which shall be preserved and protected are shown on the Development Envelope/Tree Retention Plan, being Schedule "B-2" to this Blackcomb Phase V Development Official Community Plan.
- (b) In order to ensure the protection and maintenance of the preserved stands of trees and wildlife habitats, the Tree Preservation and Mitigation Guidelines to mitigate impacts to these areas, being Schedule "D" to this Blackcomb Phase V Official Community Plan, shall be followed.

5. Development Permits

Pursuant to s.976 and s.980(5) of the Municipal Act, each parcel into which the Blackcomb Phase V Lands is subdivided shall be the subject of a Development Permit pertaining to matters referred to in Sections 3 and 4 hereof.

SCHEDULE "A"

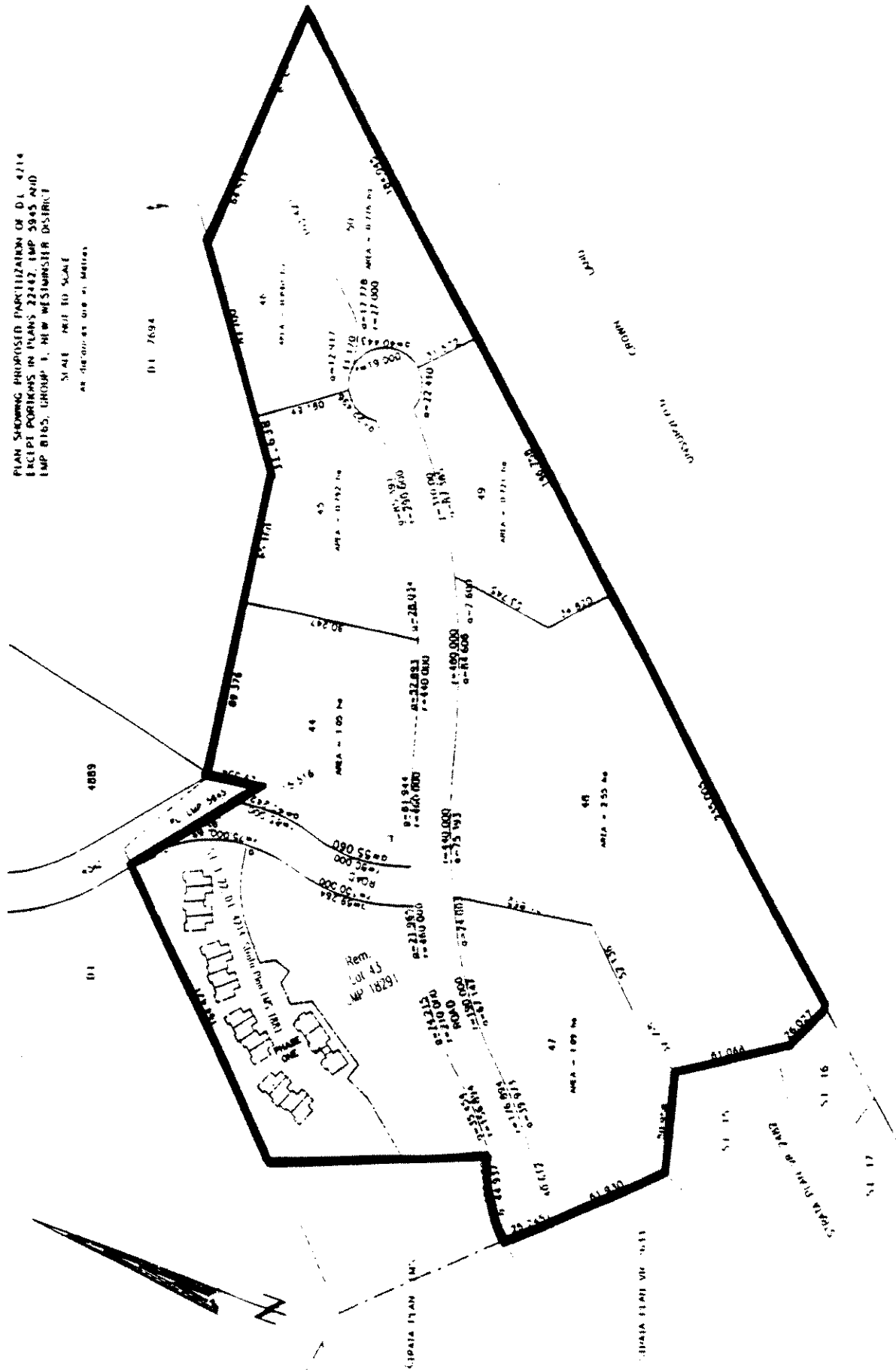
**to the Blackcomb Phase V Development
Official Community Plan**

Blackcomb Phase V Lands

2

PLAN SHOWING PROPOSED PARCELIZATION OF D.L. 4714
EXCEPT PORTIONS IN PLANS 22442 IMP 2945 AND
IMP 8165, URBAN 1, NEW WESTMINSTER DISTRICT

SCALE: NOT TO SCALE
AS SHOWN ON D.L. 4714

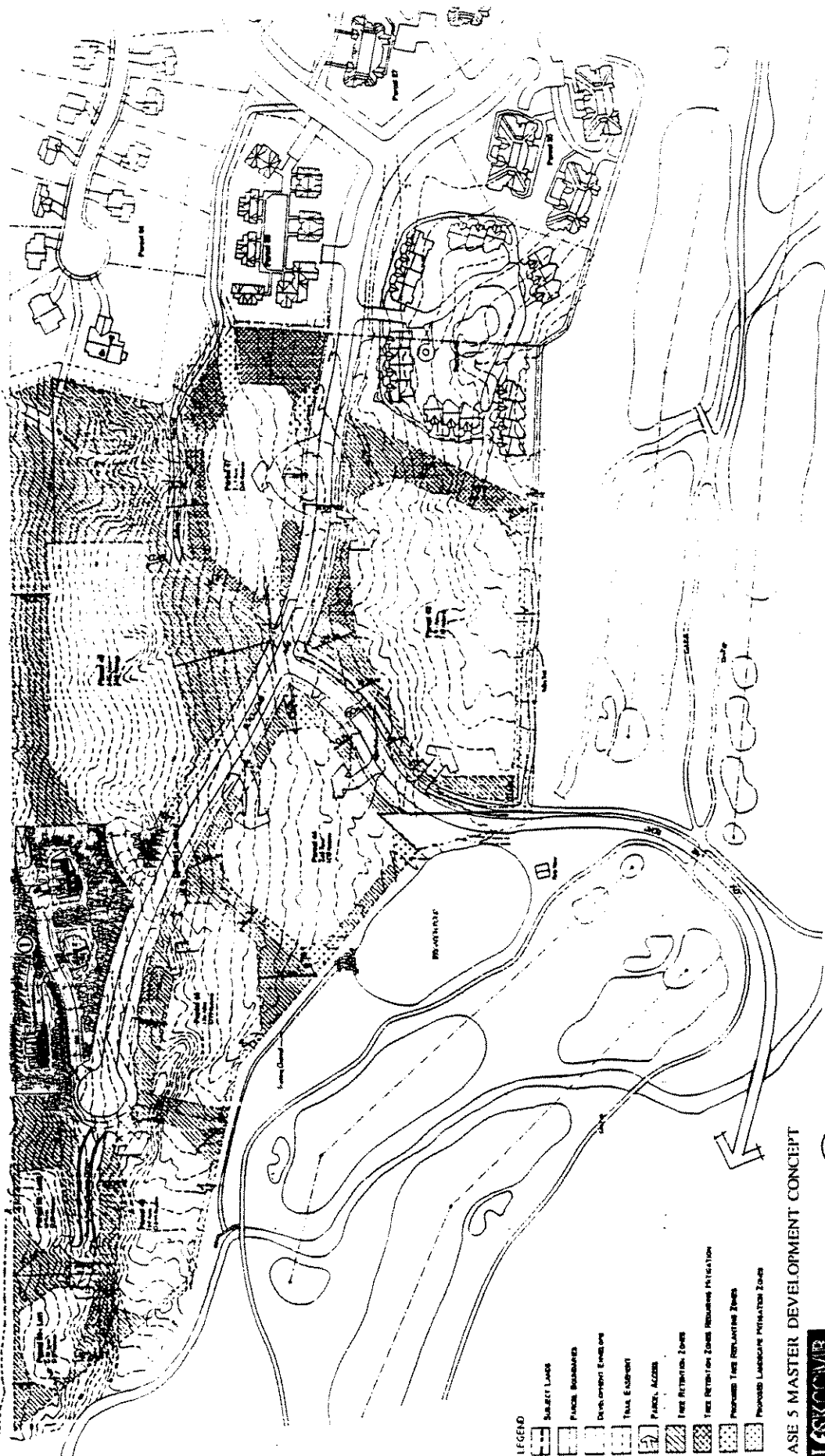


SCHEDULE "B"

to the Blackcomb Phase V Development Official Community Plan

- "B-1" Development Concept Plan
- "B-2" Development Envelope/Tree Retention Plan

Development Envelope / Tree Retention Plan



- LEGEND**
- SUBJECT LOTS
 - PARCEL BOUNDARIES
 - DEVELOPMENT ENVELOPE
 - TREE ENLARGEMENT
 - PARCEL ACCESS
 - TREE RETENTION ZONES
 - TREE RETENTION ZONES RESOURCE INTEGRATION
 - PROPOSED TREE RETAINING ZONES
 - PROPOSED LANDSCAPE MITIGATION ZONES

PHASE 5 MASTER DEVELOPMENT CONCEPT



Black Hills Biological Institute of the University of South Dakota

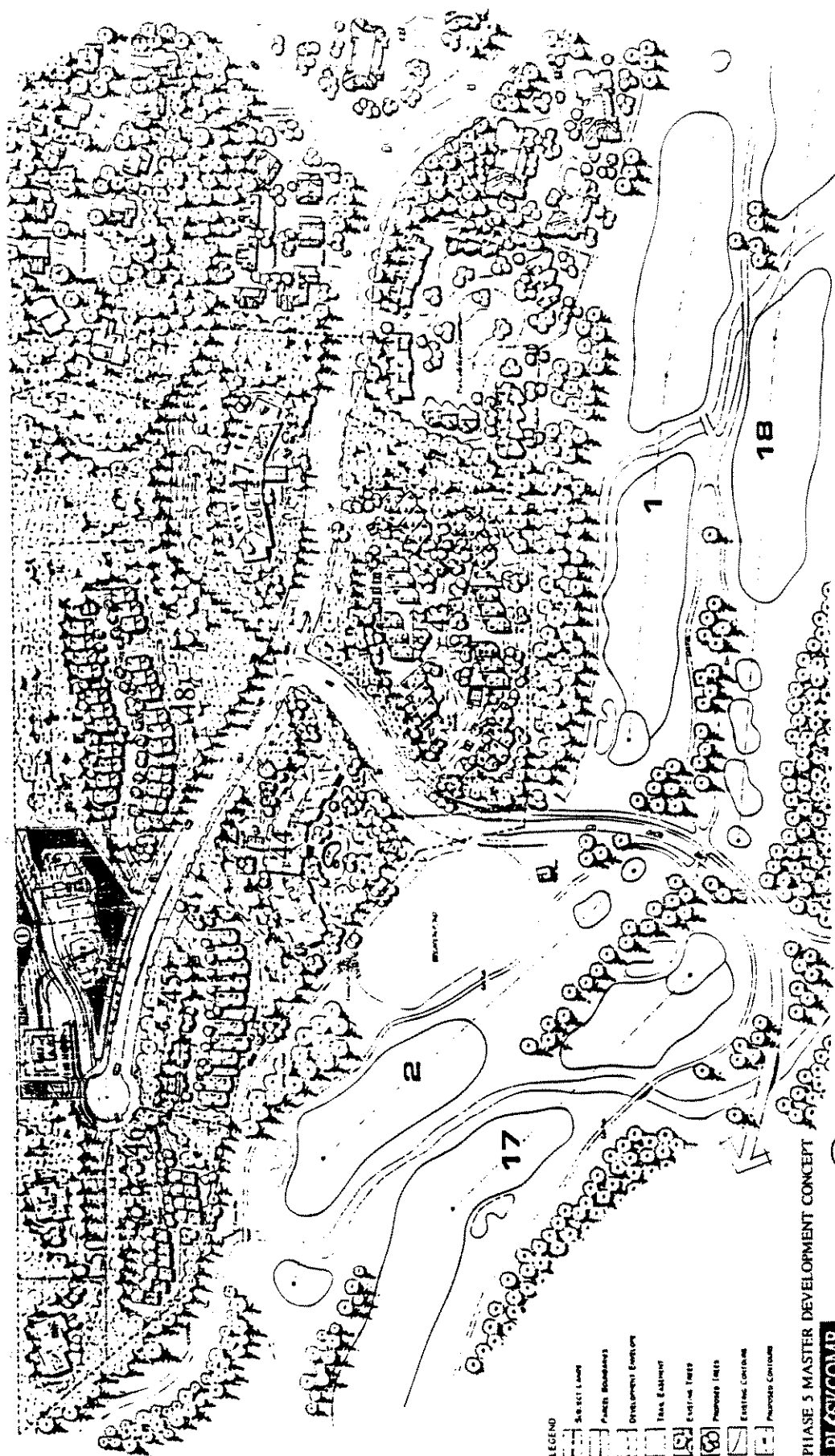


July 1991

REVISION KEY

KEY NO.	BYLAW NO.	DATE
1	1109	96/07/15

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- LEGEND**
- SUBJECT LINES
 - PARCEL BOUNDARIES
 - DEVELOPMENT ENVELOPE
 - TREE RETENTION
 - EXISTING TREES
 - PROPOSED TREES
 - EXISTING CONTOURS
 - PROPOSED CONTOURS

PHASE 5 MASTER DEVELOPMENT CONCEPT



BLICKCOMB ENGINEERING LTD. PERMITS



ecosign ENGINEERING LTD.



July 1993

REVISION KEY

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1	1109	96/07/15

SCHEDULE "C"

to the Blackcomb Phase V Development
Official Community Plan

Design Guidelines

Design Guidelines

BLACKCOMB PHASE V

1. Objectives

The success of Whistler as a resort depends on the success of the visitor experience. A high quality of design, and the preservation of the natural environment is expected in all major projects to help achieve this central goal. The Blackcomb Benchlands exists to offer visitors a mountain setting distinct from their everyday environment. The Blackcomb Phase V lands are intended to be developed with a distinct character, as a gateway from the Blackcomb Benchlands area to Lost Lake Park. Its special image as a forested mountainside should be retained.

The general intent of these design guidelines is to explain and illustrate various design elements which need to be considered by prospective developers of the Blackcomb Phase V Lands. These guidelines set out the intended character and theme of all development on the lands. Special design is encouraged; consideration of special environmental conditions is required. These guidelines will assist the owner/developer, and provide an evaluative context for the approving authority. They do not negate or overrule building codes or municipal bylaws. They are not intended to be exhaustive; other imaginative design solutions are encouraged provided they meet the general design intent. Applicants should review these guidelines and meet with municipal planning staff at the outset of the design process to discuss the design objectives and issues. Each design will be reviewed in the context of surrounding development, and the specific design objectives for the property.

2. Environmental

2.1 Natural ecological systems should be maintained outside the designated building envelopes. Natural vegetation must be preserved in all areas to the greatest possible extent. All natural vegetation in the tree preservation areas must be preserved.

2.2 Alterations to existing site contours must be minimized. Where possible, the need to cut and/or fill around the perimeter of buildings must be minimized. All such areas are to be re-landscaped to an acceptable standard to achieve a stable bank condition and a natural appearance.

3. Landscaping

3.1 Landscaping and screening elements such as seating, lighting, planter design, and plant types must be able to withstand Whistler's harsh climatic conditions and be coordinated with adjacent landscaping.

3.2 The natural features of the site are to be respected. Indigenous plant materials must form the basis of the majority of new planting. Planting used for screening must be primarily coniferous.

3.3 Trees and planting must be protected from snow clearing operations. Plant material located in snow dump areas must be sufficiently durable to survive the effects of snow dumping.

3.4 Planters and landscaped areas must incorporate an automatic irrigation system.

4. Site Planning

4.1 The maximum site area possible must be devoted to landscaped areas and recreation uses. Building location, size and shape may be varied subject to the limitations set out by maximum permitted development as specified in the Zoning Bylaw, and subject to these design guidelines.

4.2 Sensitive site planning is required to minimize disturbance to natural contours and existing vegetation. Extensive site excavation and alteration is discouraged unless no other practical alternative is available to permit the development of a site. Scarred or disturbed portions of a development site must be replanted to achieve natural appearance.

5. Built Form

5.1 Building forms should respond to the natural conditions of the site, take maximum advantage of views, permit snow accumulation to be handled in a

safe manner, provide a varied built environment, and respect aesthetic conditions of adjacent development.

5.2 Building design must employ techniques that will minimize the overall mass appearance of any one building. Design techniques to be used may include variations to the roof line by stepping, variation to floor levels by stepping, and articulation by varying the building in plan. Buildings shall generally conform to the site contours.

6. Built Form Adjacent View Corridors

6.1 Those buildings adjacent to the golf course, valley trails, and public roads will be highly visible and therefore will require special design considerations. The design intent for these buildings is to minimize the building mass.

6.2 Buildings should be stepped in conformance with the natural contours to minimize the mass.

6.3 Concrete foundation walls should generally not exceed 1 metre in height above finished grade. The use of framed pony walls is preferred, however concrete foundation walls that exceed 1 metre in height are permissible provided that in no case do they exceed 2 metres in height above finished grade, and that the exposed concrete is architecturally treated.

6.4 Post or column supports on point footings are permitted provided the underside of the exposed building is finished in materials compatible with the adjacent walls above, all pipes and ducts are concealed, and the columns do not exceed 5 metres in height. Structural elements such as beams and cross-bracing may be exposed provided they are compatible with the overall design concept.

6.5 Adequate planting and grading is required to screen the foundation and soften the impact to view corridors.

7. Roof Design

7.1 Roof design is important for snow management, and is a major contributor to architectural character.

7.2 Roof forms should be broken up with the use of dormers or other architectural features. Ridge lines should not be continuous but should be varied in height or broken with chimneys, cupolas, towers or other features.

7.3 All roofs shall be designed to safely handle snow accumulation and snow shedding. In the case of sloping roofs, snowshedding areas shall be incorporated into the design such that pedestrian and vehicle circulation areas are avoided. Roof design must avoid conditions which result in ice build-up, and ensure the roof space is properly ventilated.

7.4 Roof forms shall generally be sloping. Sloping sections of a roof may vary from 5/12 to 12/12 pitch. Tack-on mansards are not permitted. The integration of flat roofs is acceptable for certain type of buildings.

7.5 The following roof appurtenances are permitted to project above the permitted roof height: exit stairs, chimneys, vents, air conditioning and water cooling units, T.V. satellite dishes, and similar items, providing they are adequately screened and integrated into the overall roof design of the building.

8. Snow Management

8.1 The effects of snow and ice build-up, if improperly handled, can be destructive to buildings, pose risks to pedestrians and vehicles, and impose high ongoing snow removal and maintenance costs. The heavy snows and extreme freeze/thaw cycle of Whistler's climate combine to make snow management an important design consideration. Designers not thoroughly familiar with snow country design should retain an expert consultant early in the design process.

8.2 Roofs must be designed to shed snow away from pedestrian and vehicle circulation areas. Snow dump zones which are to be kept free from pedestrian and vehicle movement must be identified.

8.3 All entry, deck and walkway areas adjacent to sloping roofs must be covered to protect pedestrians from snow shed and ice accumulation. Patio decks may not extend beyond the roof projection if they are located in a snowshed area.

8.4 Storage areas for snow cleared from walks, decks, parking areas, and driveways must be provided, including allowance for the use of appropriate clearing machinery.

9. Pedestrian and Vehicular Access

9.1 Building entry ways, lobbies, stairs, corridors and exterior walkways should be designed to accommodate people wearing ski boots and carrying bulky equipment. Extra width, gentle pedestrian access grades, more generous steps, and heavier more durable materials should be provided to accommodate skier traffic.

10. Unit Orientation

10.1 All development shall maximize sun penetration to pedestrian levels and to neighbouring public and private spaces to provide for outdoor activity areas. Important view corridors must also be preserved.

10.2 Units should be designed to take advantage of natural views unique to each location. Windows should, where possible, be oriented to the south and minimized to the north to maximize passive solar gains.

10.3 Visual privacy between units is desirable. In the larger multiple unit developments, visual privacy can be achieved by ensuring one unit does not overlook another unit, by separating private outdoor areas by articulating the building in plan, and by screening with landscaping or walls. The varying site contours should also be used to advantage where possible.

10.4 Usable outdoor space shall be provided to facilitate year round use. Useable outdoor space shall not be located in snowshed areas.

10.5 Wherever site conditions permit, private outdoor space shall be provided at grade. These areas should be accessible to the dwelling units, well drained, and with a southerly exposure.

10.6 The use of decks and balconies are encouraged.

11. Unit Identity

11.1 In townhouse developments, unit identity should be created through the use of materials, colours, architectural detailing, and variation in building mass and roof contours. Special attention shall be given to the design of windows and entry ways to create a more varied and diversified exterior appearance to the building.

11.2 All apartment building entry ways must have visual prominence.

11.3 Landscaping, pathways, and signage should emphasize building and unit access points and entry ways.

12. Exterior Materials

12.1 All building materials are to be sufficiently durable and detailed to withstand Whistler's harsh climate.

12.2 Exterior cladding materials shall generally consist of wood siding, wood panels, wood shingles, brick, stucco, stone and/or glass. Other materials may be acceptable in certain situations. Prestained wood siding is strongly encouraged where permitted by the building code.

12.3 Stucco must be acrylic based and incorporate an acrylic (as opposed to painted) finish. Stucco should incorporate heavy reveals and expansion joints. Stucco must be protected from weather exposure by overhanging eaves. Wood trim is recommended wherever possible.

12.4 Exposed concrete should be heavily ribbed, textured, coloured or bushammered.

12.5 Roofing may consist of cedar shakes, cedar shingles, metal, and/or built-up tar and gravel systems for any flat roof portions only. All chimneys should be enclosed in a material identical or similar to the building cladding (or other architectural treatment).

12.6 A limited number of exterior finishing materials is recommended for use on the walls and roof of any one building. Facade modelling and colour may be varied for variety.

12.7 Materials used below the snow line must be durable to both weathering and snow clearing.

12.8 Other materials may be acceptable in limited areas subject to particular technical and design justification.

13. Colours

13.1 The principal colour of all buildings should consist of earth tones, beige, tan, grey, brown, green tones, or other muted natural colours typically found in the surrounding landscape. Wood siding shall be salt-treated or treated with a semitransparent stain.

13.2 Accent colours may be used for trim, door, window sash, railing, and similar areas to effectively accent and highlight the principal colour of the building.

14. Exterior Lighting

14.1 Low level or indirect lighting shall be used to avoid "hot spots" and contrasting shadow areas, and to reduce lighting glare especially when viewed from off-site. No flashing, blinking, or coloured lighting is permitted. Warm colour lighting is preferred.

14.2 Walkways shall be adequately lit for both winter and summer use. All street lighting shall be constructed to municipal specifications.

14.3 Lighting should be designed to provide a sense of security to pedestrians. It is not necessary to over-light, nor to uniformly light everything to achieve security. Security lighting must be carefully integrated with landscape design and building planning.

15. Signage

15.1 Principal access roads and entrances to parking areas shall be clearly identified at key locations on the site. Building signage should be visible, but must complement, not contrast, with the architectural features and finishes of each building.

16. Garbage Storage/Collection

16.1 Garbage storage areas shall be located in low visibility areas. Garbage containers shall be well screened from view, and constructed in a manner which discourages natural predators. Collection should be facilitated, giving particular attention to vehicle maneuvering, and grades of access roads in pick-up areas. Provisions for the storage of recyclable materials must be included.

17. Vehicle Access and Parking

17.1 Access roads to parking areas should be constructed at minimum available grade differentials. Parking structure entries should be located in unobtrusive areas, and be visually screened.

17.2 Parking areas should be located to provide convenient access during heavy snow conditions.

17.3 All vehicle access roads shall be designed and constructed to permit fire fighting equipment to gain direct access to buildings on a site.

17.4 Townhouse parking may be a combination of covered parking attached to or within the dwelling unit and/or surface clusters as site conditions permit. The majority of apartment and hotel parking shall be provided in parking structures beneath the buildings.

SCHEDULE "D"

**to the Blackcomb Phase V Development
Official Community Plan**

Tree Preservation and Mitigation Guidelines

Tree Preservation and Mitigation Guidelines

BLACKCOMB PHASE V

1. -- Objectives

Preservation of the natural environment is a vital component to Whistler's success as a resort. Furthermore, it is recognized that as development takes place, ecosystems will become vulnerable to the impact of construction activity. These *Tree Preservation and Mitigation Guidelines* present a strategy intended to encourage the preservation of trees, and to minimize any negative environmental impacts that may be associated with the development of the Blackcomb Phase V Lands. Potential developers should also be familiar with the "Blackcomb Phase 5 - Environmental Review" (Geo Alpine, 1992).

The areas identified for tree retention and mitigation are illustrated in the "Development Envelope/Tree Retention Plan," being Schedule "B-2" to the "Blackcomb Phase V Development Official Community Plan," and are divided into the following zones:

1. Tree retention zones
2. Tree retention zones requiring mitigation
3. Proposed tree replanting zones
4. Proposed landscape mitigation zones

Tree retention zones and *tree retention zones requiring mitigation* are comprised of areas in which the existing groves shall be preserved. Trees within a *tree retention zone* are isolated from the impact of development, and are protected by the mass of the grove and the feathering of the forest edge. Therefore, little mitigation will be required in this zone, and trees shall be retained with very few exceptions. Areas in which mitigative measures are required in order to assist in tree survival have been designated as *tree retention zones requiring mitigation*. Trees in these areas may have been impacted by development, groves may be of insufficient mass, or they may be especially sensitive to the effects of development. Both *tree retention zones* and *tree retention zones requiring mitigation* are referred to as "tree preservation zones" throughout this document.

Proposed tree replanting zones are areas denuded of vegetation, such as old road beds. These areas shall be replanted to enhance the tree preservation zones. *Proposed landscape mitigation zones* are areas which will become void of vegetation due to construction activities, and shall be revegetated with indigenous plant species. These guidelines focus on tree preservation zones, and do not specifically address *proposed tree replanting* and *proposed landscape mitigation zones*. Landscape plans for these areas shall be reviewed at the time of development permit application for each development parcel.

2. Vegetation Management Plan

A Vegetation Management Plan shall be prepared for each development site within the Blackcomb Phase V Lands. The plan shall be required prior to the granting of a development permit, and shall be prepared by a landscape architect, forester or related equivalent qualified professional. The plan may be integrated with a landscape planting plan, but shall include the following components respecting the tree preservation zones:

- tree survey and tree health assessment information;
- areas and sources of potential impacts to trees;
- forest habitat enhancement plan;
- mitigative and maintenance measures such as irrigation, fertilization or pruning;
- revegetation using native plant species;
- grading around preserved trees to appropriately "feather" edges;
- extent of hazard/diseased/leaning tree removal; and
- alignment of required wood hoarding.

The tree preservation zones extend across the boundaries of development parcels, but each are best dealt with as a single preservation zone. As a result, each Vegetation Management Plan should be coordinated with any existing plans for adjacent development parcels. All existing plans shall be available for review at the offices of the Municipality.

3. Municipal Tree Preservation Process

The following municipal tree preservation process shall be followed prior to any clearing, disturbance or construction on the Blackcomb Phase V Lands:

- i) The edges of the tree preservation zones shall be flagged with a continuous yellow tape. The tape shall be suspended at a height of 1.0 metre. Minimum brush clearing is permitted to ease access into the site.
- ii) The flagging shall be inspected and signed-off by staff of the Parks and Recreation Department.
- iii) All tree retention and mitigation boundaries in contact with, or downhill from, disturbed ground shall be hoarded with a wood fence. The wood hoarding shall be a minimum 1.2 meters in height, self supporting, and under no circumstances shall the hoarding be nailed to trees.
- iv) The wood hoarding shall be inspected and signed-off by staff of the Parks and Recreation Department.
- v) Upon municipal sign-off of hoarding, and receipt of all other required approvals, the owner will be permitted to clear the site. (In some situations, with the prior approval of the Municipality, clearing may take place prior to the wood hoarding being erected.) The owner shall ensure trees are felled away from the tree preservation zones. Appropriate maintenance and mitigative measures shall be followed.
- vi) Prior to excavation of a development site, the Vegetation Management Plan shall be reviewed and updated if necessary to reflect current conditions. The tree preservation zones shall be surveyed and assessed by a qualified Landscape Architect, Forester, or related equivalent qualified professional.
- vii) During excavation of the site, the owner shall ensure that earth moving is carefully executed adjacent to tree preservation zones, and that severing and compaction of root systems is avoided.

- viii) At time of excavation, all hazard, diseased and leaning trees identified in the Vegetation Management Plan shall be removed.

4. **Activities Within Tree Preservation Zones**

No construction activities shall be carried out within the tree preservation zones. Nor shall the zones be subjected to impacts arising from traffic or materials storage. Activities within the tree preservation zones shall be limited to the following:

i) **Surveying**

Surveying shall consider the intent of the tree preservation zones and should avoid all unnecessary impacts to the trees and understory vegetation. No trees of a diameter exceeding eight centimeters shall be cut. No shrubs or trees under one metre in height shall be cut; instead, offsets shall be used to obtain sitings around trees. No trees shall be limbed, nor shall the bark be removed from the trees within the tree preservation zones.

ii) **Hazard Tree Identification and Removal**

Trees which are deemed unsafe due to damage, or under guidelines of the Workman's Compensation Board, are of concern in the tree preservation zones. Western hemlocks have typical levels of fungal infection for this area. The western red cedars and cypress are generally healthy. Leaning, diseased and dangerous trees should be removed.

Trees which are removed should be assessed for habitat potential. These trees may be dealt with in the following ways (listed in order of preference): modified to become standing wildlife trees; felled, cleaned, and left to become wildlife trees on the ground; or felled, bucked into rounds, and removed by hand.

iii) **Pathways**

Some underbrush may be removed to establish a limited number of approved, soft surfaced paths, but no trees should be removed, or adversely affected. Paths within tree preservation zones shall not exceed 1.0 metre in width

and shall be approved by the Municipality as part of the Vegetation Management Plan. Surface materials shall consist of fine aggregate (3/4 minus basalt or granite).

iv) Servicing

When no other alternatives are available (as determined by municipal staff) servicing will be allowed within the tree preservation zones. Service corridors shall be revegetated with municipally approved native plant species and returned to a natural state.

5. Mitigation Within Tree Preservation Zones

As a result of the other priorities and requirements of servicing and developing the Blackcomb Phase V Lands, tree preservation zones of substantial critical mass may not always be attainable. When this situation arises, extraordinary measures may be required to provide the affected trees with the best chance of survival. If, as a result of site development, negative impacts occur within the tree preservation zones, then mitigation efforts may be applied to the affected areas. This section includes a number of mitigative measures.

i) Tree Preservation Priorities

Preservation efforts should concentrate on and be prioritized as follows: the cedars, any existing and safe wildlife trees, the firs, and finally any safe western hemlocks.

ii) Damaged Trees

Machine damaged trees shall be treated with an appropriate tree wound dressing ("Braco" or equivalent).

iii) Windfirmness

Most of the trees located within the Blackcomb Phase V Lands are shallow rooted and susceptible to blowdown. Mitigation of this problem should consider: feathering of the forest edges to break up winds, limbing to reduce the sail areas of specific trees, and topping of trees along the edges and close to buildings.

iv) Visual Screening

Preserved trees may serve as a visual screen to the clear-cut area above the Blackcomb Phase V Lands and preservation shall be considered as a priority along the higher elevations.

The trees lining the golf course serve as a visual screen that may be selectively thinned to improve the views of the course. Thinning within tree preservation zones shall not compromise the ecological integrity of the affected stand, nor shall it jeopardize the visual screening provided by the stand. Care shall be taken to preserve the shrub understory within areas to be thinned.

v) Wildlife and Wildlife Habitat

The mature forest is of primary importance in the preservation and maintenance of wildlife habitat and movement corridors for larger mammals and birds. However, attention should be given to maintenance of smaller islands of successional timber and shrubs throughout the developments to provide habitat for songbirds and small mammals. Development of forest edge effect, through preservation and replacement of shrubs and small trees, will also provide habitat for small animals and birds. Preservation of wildlife trees, such as old snags and deadfall will provide nesting and denning sites.

Old timber on the ground shall be left in situ. Hazardous leaning trees shall be felled and treated as recently downed trees. Recently downed trees may be limbed and cut into sections, with the limbs piled beside the sections to minimize potential fire hazard and enhance small mammal habitat. Windthrown roots shall be left attached to the tree stem. The stem shall be of sufficient length to retain the root in a windthrown position. Recently downed trees and the associated debris shall not exceed 10% of the ground cover within a tree preservation zone. Excess downed timber shall be cut into rounds and removed by hand.

vi) Root Systems

No compaction of native soils shall occur in the mature forest habitat of the tree preservation zones when constructing pathways or installing underground services, except along the pathway or servicing corridor.

When building or excavating in the proximity of mature trees within a tree preservation zone care shall be taken to prevent cropping of root systems.

The potential effects on the mature trees of residual motor oils and winter salt application to roads shall be considered, and adequate ditching provided to intercept effluent runoff.

vii) Irrigation

As a result of the impacts of servicing, the groundwater and soil moisture regime may be altered. As a result it may be necessary to irrigate groves to ensure health of the stands.

6. General Mitigation Techniques

As a result of the impacts of development, the natural environment will be affected. Every effort should be made to return as much as possible of the site outside the built and landscaped areas to a modified natural state. This section identifies a number of preferred mitigation practices that should be used to achieve this objective.

i) Forest and Grove Edges

Enhancement of forest edges adjacent to the developed environment shall be addressed through a landscape plan and a vegetation management plan. Forest and grove edges shall be feathered and scalloped to maximize the edge effect for wildlife habitat. Wherever possible, the integrity of ground cover species should be maintained to preserve a natural buffer between buildings and ecological units.

ii) Soils

In areas of disturbance within mitigation zones the soil strata shall be preserved. When the disturbed sites are revegetated, the soil strata shall be replaced with the preserved organic layer used as top dressing. All imported fill shall meet Level "A" standards (Criteria For Managing Contaminated Sites in British Columbia, MOE, 1989). Burial of wood waste materials shall not be permitted on site.