

BYLAW 97-2000

A BYLAW OF STRATHCONA COUNTY IN THE PROVINCE OF ALBERTA, FOR THE PURPOSE OF ADOPTING THE REVISED DEER MOUNTAIN AREA STRUCTURE PLAN.

WHEREAS on June 27, 2000 Council passed Bylaw 54-2000 to adopt the Deer Mountain Area Structure Plan; and

WHEREAS it is deemed advisable to amend the Deer Mountain Area Structure Plan;

NOW THEREFORE, the Council of Strathcona County, pursuant to the authority conferred upon it by the Municipal Government Act, S.A. 1994 c-M26.1 and amendments thereto, enacts as follows:

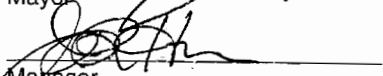
1. Bylaw 97-2000 is to be cited as the "Deer Mountain Area Structure Plan".
2. Schedule "A" attached hereto is hereby adopted as part of this Bylaw.
3. Bylaw 54-2000 is hereby repealed.

Read a first time this 16 day of January, 2001.

Read a second time this 16 day of January, 2001.

Read a third time and finally passed this 16 day of January, 2001.


Mayor


Manager,
Legislative & Legal Services

Date Signed: January 22, 2001

DEER MOUNTAIN
Area Structure Plan

Prepared on behalf of
RESLAND DEVELOPMENT INC.
by
Lovatt Planning Consultants Inc.

December 2000

DEER MOUNTAIN Area Structure Plan

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**DEER MOUNTAIN
Area Structure Plan**

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1.0 Introduction

1.1 Purpose

This Area Structure Plan Technical Report has been prepared on behalf of Resland Development Inc., and is generally in accordance with Strathcona County's guidelines for the preparation of an Area Structure Plan. The report provides a framework for the proposed country residential subdivision and development of the SE ¼ of 14-52-23-W4M, comprising some 62.65 hectares (154.93 acres) as per the Certificate of Title, or 62.35 (154.07 acres) as per a recent survey. This Area Structure Plan must be considered in the context of the accompanying Design Brief, prepared by Infrastructure Systems Ltd. (ISL).

1.2 Locational Context

The Deer Mountain plan area is located 2.4 kilometres (1.5 miles) south of the Sherwood Park (Urban Services Area) and about 4.0 kilometres (2.5 miles) east of Highway 14. Figure 1 indicates that the area is surrounded by country residential development and is bounded by:

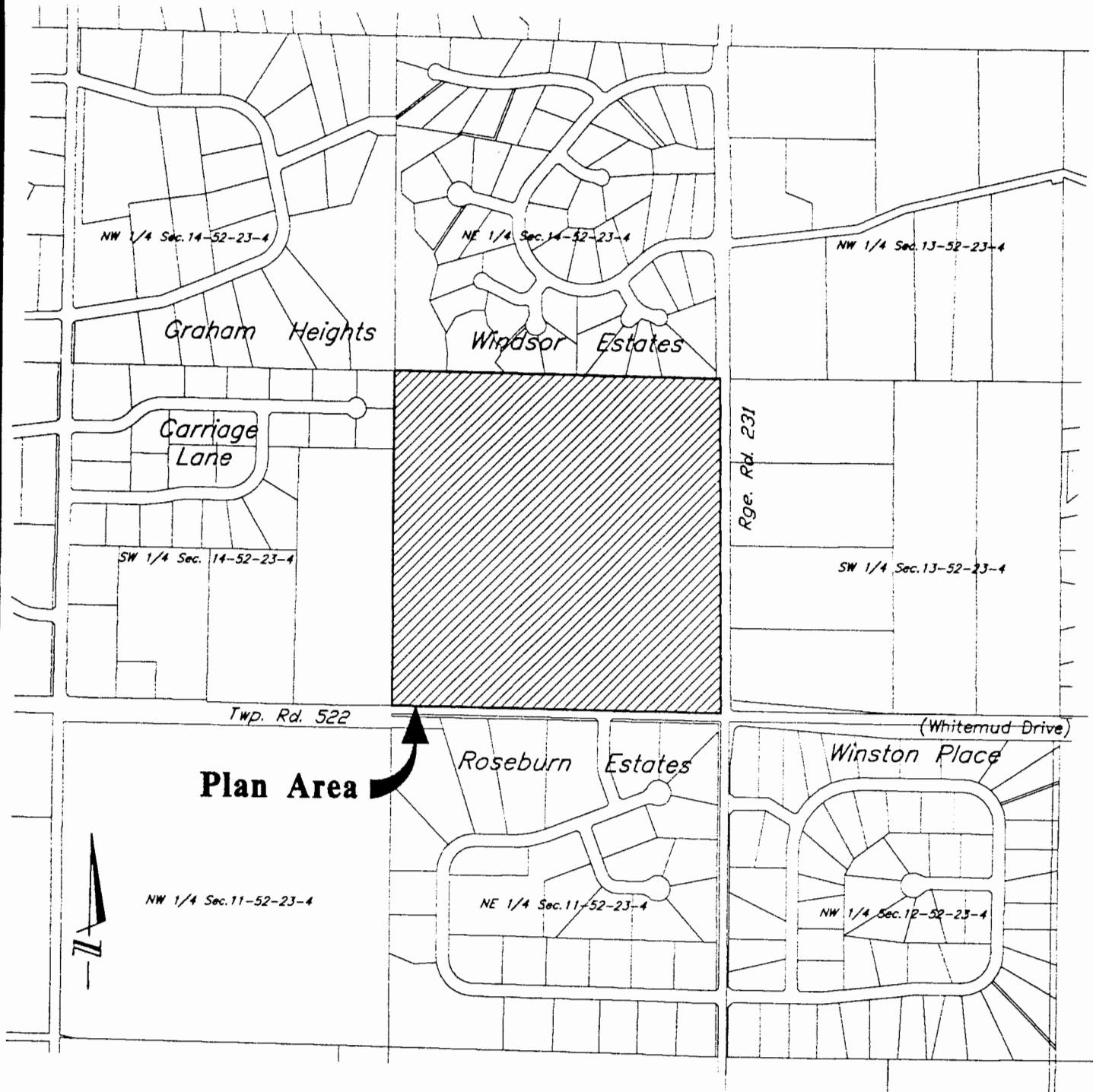
- Township Road 522 to the south;
- Range Road 231 to the east;
- Windsor Estates to the north; and,
- Carriage Lane and a developed 14.9 hectare (36.8 acre) small holding parcel to the west.

The Deer Mountain area is one of the very few remaining unsubdivided ¼ sections located within 3.2 kilometres (2.0 miles) south of Sherwood Park.

1.3 Background and Ownership

The Deer Mountain plan area contains no improvements and has not been previously subdivided. A local farmer (former owner of the site) leases the area for cattle grazing and some limited hay production. According to this farmer, the the general area surrounding, and including, the subject site was referred to at the turn of the last century as Deermound. The name selected for the Area Structure Plan preserves this historic context, while recognizing the natural topography of the site. The lands were homesteaded in the 1930's, and the remnants of a farmstead are evident along the west plan area boundary, along with a cleared pasture concentrated in the northwest quadrant of the ¼ section. The balance of the area is indigenous forested lands, although a natural low lying area covers much of the southeast corner of the plan area.

The plan area is under the single ownership of Allbreed Dog School Ltd. (Certificate of Title # 982 120 972 + 10).



**Deer Mountain
Area Structure Plan
Strathcona County**

**Figure 1
Location Map**

December, 2000 N.T.S.



1.4 Policy Context

This Area Structure Plan meets the requirements of Section 633 of the Municipal Government Act. As such, it describes the land uses proposed, the sequence of development, general future population levels and infrastructure requirements. The plan also conforms with Strathcona County's 1998 Municipal Development Plan Bylaw No. 38-98. The Municipal Plan includes the subject lands in the Country Residential Policy Area, which *is intended to accommodate cluster country residential and estates residential uses and minor variations thereof* (Policy 10.21). Finally, Policy 10.22 states that *Area Structure Plans shall be prepared for development in the Country Residential Policy Area to provide a guide for subsequent subdivision and development*. This plan, therefore, meets the statutory requirements of the County's Municipal Development Plan.

A number of specific Municipal Development Plan policies are particularly significant in identifying an optimal approach to developing the plan area for residential purposes, while still protecting the integrity of the natural environment. These policies are:

1. **Policy 10.25** (*Cluster Country Residential Design Guidelines*) - *The intent of the design guidelines for the cluster country residential development is to conserve environmental and open space features: and to reduce municipality infrastructure capital, operating and maintenance costs. These guidelines include:*
 - a) *the use of a range of protection mechanisms (i.e. Conservation easement, environmental reserve) in conjunction with the development of country residential subdivision;*
 - b) *the maximum base density shall not exceed 50 parcels per developable quarter section (65.0 hectares or 160.0 acres). This density is equivalent to one (1) parcel per 1.3 hectares (3.2 acres) of gross developable land. Lands suitable for storm water management facilities, road widening or for environmental reserve shall not be included in the calculation of gross developable land area;*
 - c) *the maximum base development density may be exceeded only in cases where bonus-ing is used. One (1) additional parcel may be granted for each 1.4 hectares (3.0 acres) of land designated under a conservation easement or other reserve designation for purposes of environmental conservation; and*
 - d) *encouraging country residential developments based on cluster design guidelines:*
 - i) *by grouping country residential parcels on less environmentally significant or sensitive sites to promote protection of open space and environmental features with anticipated reduced construction and subsequent maintenance costs;*
 - ii) *consideration of rural cluster developments should be undertaken in conjunction with the use of voluntary conservation easements or restrictive covenants...*



2. **Policy 10.28** (*Protect Environment*) - Future country residential uses shall be encouraged to protect and develop amenities to take advantage of natural topography and other environmental features such as unique tree stands, ravines and watercourses.
3. **Policy 16.32** (*Conservation Easements*) - A conservation easement may be voluntarily entered into with a landowner to preserve significant natural areas or priority habitats in accordance with those areas identified in the **Prioritized Landscape Ecology Assessment of Strathcona County, 1997**.
4. **Policy 16.5** (*Minimum Developable Area of 0.4 Hectare*) - All parcels shall have an accessible minimum developable area of 0.4 hectares (1.0 acres) with near surface ground water table of not less than 2.0 metres (6.6 feet) below the surface.

In preparing this Area Structure Plan, numerous discussions occurred between the developers, the consultants, and County staff, to ensure proper interpretation of the Municipal Development Plan policies in the context of protecting the natural environment, while still optimizing lot yield. Also, the County provided considerable assistance in identifying a suitable access point onto Township Road 522. The valuable input and suggestions provided by the County staff is appreciated and is reflected in the Structure Plan.

Although designated as country residential by the Municipal Development Plan, the plan area is districted Rural (AR) by the County's Land Use Bylaw No. 42-89. An amendment to the Land Use Bylaw to redistrict the area will be required prior to subdivision. This Area Structure Plan provides the rationale for the required amendment.



2.0 Existing Conditions

2.1 Surrounding Development

The Deer Mountain plan area is surrounded by a mix of country residential subdivisions, small holdings and agricultural ¼ sections. As is noted in Section 1.2, Windsor Estates and Carriage Lane are located to the north and west, respectively. Both these established subdivisions are almost fully developed. Roseburn Estates and Waterton Estates are located south of the plan area, across Township Road 522. Roseburn Estates is fully developed and Waterton Estates is partially developed. The proposed country residential development of the subject lands, therefore, is compatible with the surrounding land use pattern.

2.2 Existing Conditions

Figure 2 illustrates the major features of the Deer Mountain plan area. The topography within the area is described as primarily hummocky, gently undulating terrain, with a flatter, low-lying area in the southeast corner. The lands generally slope from the high points in the north and drain towards the southeast low area via an intermittent drainage course which bisects the north, central portion of the area. A hummock or small rise in the terrain is evident in the extreme southeast corner of the area. Excepting the pasture noted in Section 1.3, and some trails linking segments of the plan area, most of the area is relatively undisturbed diverse, natural vegetation. The pasture comprises some eight hectares (20 acres), more or less.

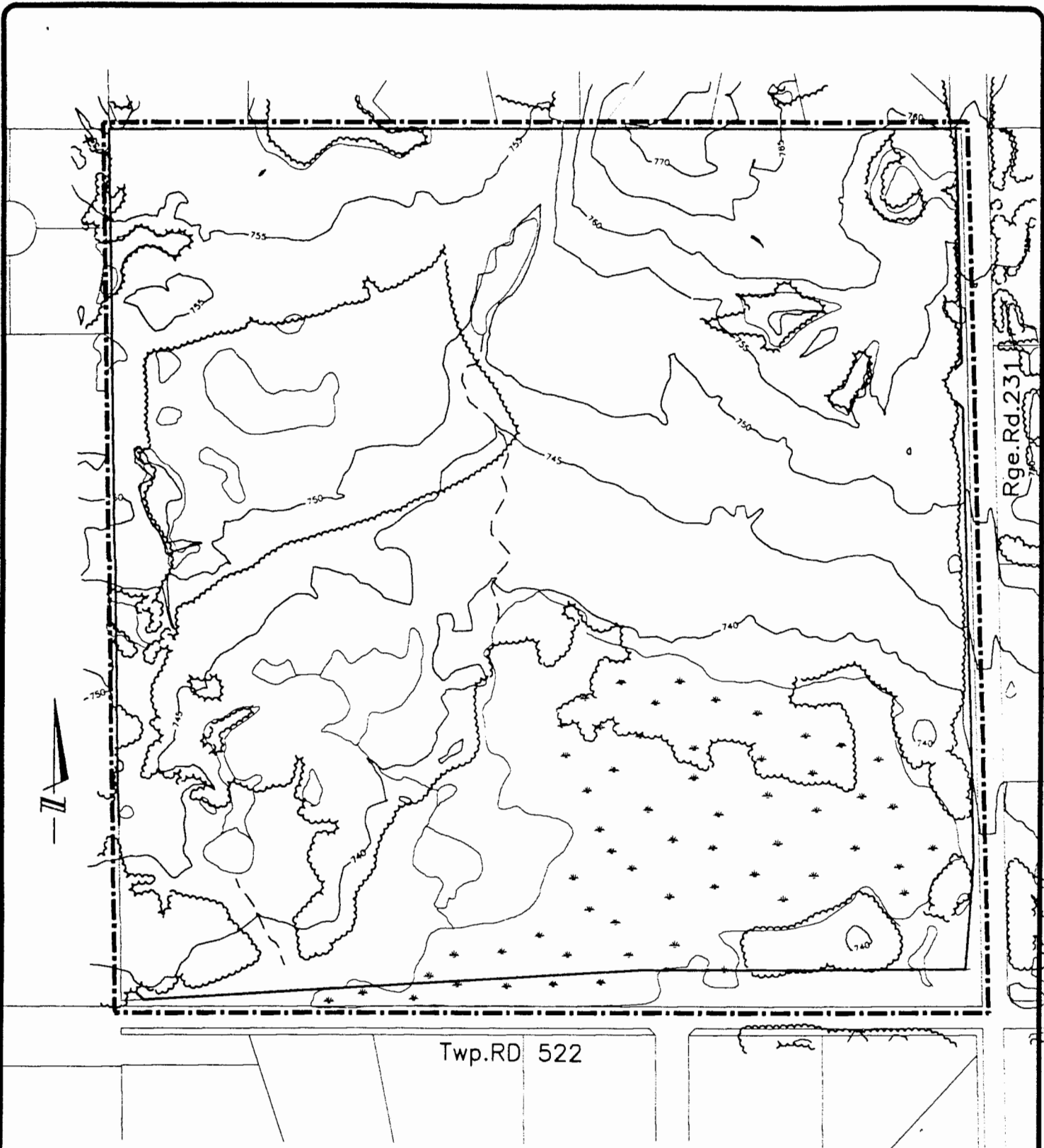
An investigation of the natural features of the Deer Mountain plan area was undertaken by Spencer Environmental Management Services Ltd. in November, 1999. The investigation was based upon:

- the information contained in the 1997 **Prioritized Landscape Ecology Assessment of Strathcona County**, prepared by Geowest Environmental Consultants Ltd.;
- a comprehensive on-site inspection;
- discussions with the former landowner (and long time area resident); and,
- aerial photo interpretation.

The results of the investigation are contained in Appendix A, and are summarized below:

1. The Priority Assessment rated the naturally-vegetated segments of the plan area as a mix of Priority 1 and Priority 2 wildlife habitat (out of three possible categories). The assessment defines priority habitats as remnant habitats that can serve conservation purposes. ***These priority ratings suggest that, to the extent possible, the country residential development of the plan area should protect the integrity of existing habitats through conservation measures.***





- ASP Boundary
- ~740~ Contours
- ☁ Treed Area
- ★ Open Areas and Wetlands
- .-.- Intermitent Drainage Course

**Deer Mountain
Area Structure Plan
Strathcona County**

Figure 2

Existing Conditions

December, 2000 Scale 1:5000

**Lovatt
Planning Consultants Inc.**

2. Based on topography, vegetation and habitat, Spencer Environmental indicates that the area can be divided into three distinct components:

- **The Upland Forest Component** comprises the majority (approximately 70 percent) of the quarter section. The hummocky terrain which characterized the uplands is occupied by a largely continuous, variably-aged, upland deciduous woodlot. The woodland habitat occupies most of the northern half and central portions of the property and extends south along the west and east property edges. Alberta Community Development requires that an Historical Resources Impact Assessment of the undisturbed north portion of the upland component be completed prior to development.

Within the woodlot, some scattered, low-lying areas support small (less than 0.2 hectares in size), depressional wetlands, primarily wet meadows. No open water was observed.

Based on the woodlot size, topographical variation, complex vertical structure and specific diversity, this woodlot is expected to support a diverse assemblage of numerous mammalian and avian species.

- **The Grassland Component** comprises one significant, irregularly- shaped, grassy area in the west-central and south portions of the plan area. This grassland includes the previously mentioned pasture. The grassland also supports a farm track road that leads north, from Township Road 522 to the north $\frac{1}{4}$ section boundary. A superficial inspection indicated that the grassy area is typical of grazed fields in Strathcona County. An artesian well surfaces at the east end of the cleared grassland to create an open pond (approximately 0.2 hectares in size). Cattle trampling has prohibited development of a natural shoreline so that the pond provides very low-quality wildlife habitat. Regardless, the well will be capped and the natural drainage restored thereby eliminating the pond.

- **The Wetland Component** comprises the southeast portion of the plan area. The wetland is relatively flat and poorly-drained. The vegetation grades from the mixed wood forest at the north, to a semi-open swamp dominated by clusters of closed-canopy willows. A scattering of sapling White Spruce, young Balsam Poplar and Paper Birch exists.

Further south, the willows open up and a sedge understory becomes more obvious. This willow/sedge stand then grades to the south and west into a flatter, more expansive tussocky, sedge/grass wet meadow or shallow emergent marsh. Each year, the sedge area likely holds some standing water until late spring or early summer, after which standing water disappears but soils remain moist. As such, the province has verbally indicated that it does not have any interest in this wetland. A knoll in the extreme southeast corner supports a disturbed, Balsam Poplar Trembling Aspen stand. Evidence of deer and moose (dropping and bedding areas) was observed within the willow component of the wetland. Based on habitat present, in spring and summer and early autumn, the area is expected to support a diverse grouping of breeding and migrating songbirds.

3. The habitat diversity of the site, with the juxtaposition of grassland, wetlands and woodland, comprises prime wildlife habitat suitable for many of the avian and mammalian wildlife species typically found in Strathcona County.

The Spencer Environmental investigation concludes that, based on the high quality habitat, which has been somewhat degraded by cattle grazing, the plan area may support some less common species. However, no special status wildlife or plan species were identified.

An Atco Gas line runs parallel to Township Road 522, along the southern boundary of the plan area. Widening for the upgrading of this road has been provided. Township Road 522 is the easterly extension of the Whitemud Freeway. The recent completion of the all-directional interchange of the freeway and Highway 14 provides high quality access to the plan area. However, the increased traffic volumes on the Township Road also limits the number of access points from internal, adjacent subdivisions. Strathcona County will permit only one such access between Range Roads 231 and 232. This access is to be located about mid-way between the two range roads.

No other rights-of-way or easements encumber the plan area.

2.3 Development Implications

The high priority habitat rating of the plan area, combined with its natural diversity, creates a particularly challenging opportunity for Resland and Strathcona County to co-operate in developing a clustered country residential subdivision, which responds to the environmental conservation policies contained in the County's Municipal Development Plan, while still optimizing the area's considerable development potential. The Deer Mountain plan area exhibits many of the natural features valued by residents of Strathcona County, and which can be protected through the sensitive design and conservation approaches proposed by that plan. The plan area's natural features also result in the opportunity to create highly desirable and marketable residential parcels. A co-operative, somewhat flexible approach, therefore, is required for developing the Deer Mountain lands to ensure that the full benefits of this unique site are realized by both the landowner (developer), and the residents of Strathcona County.

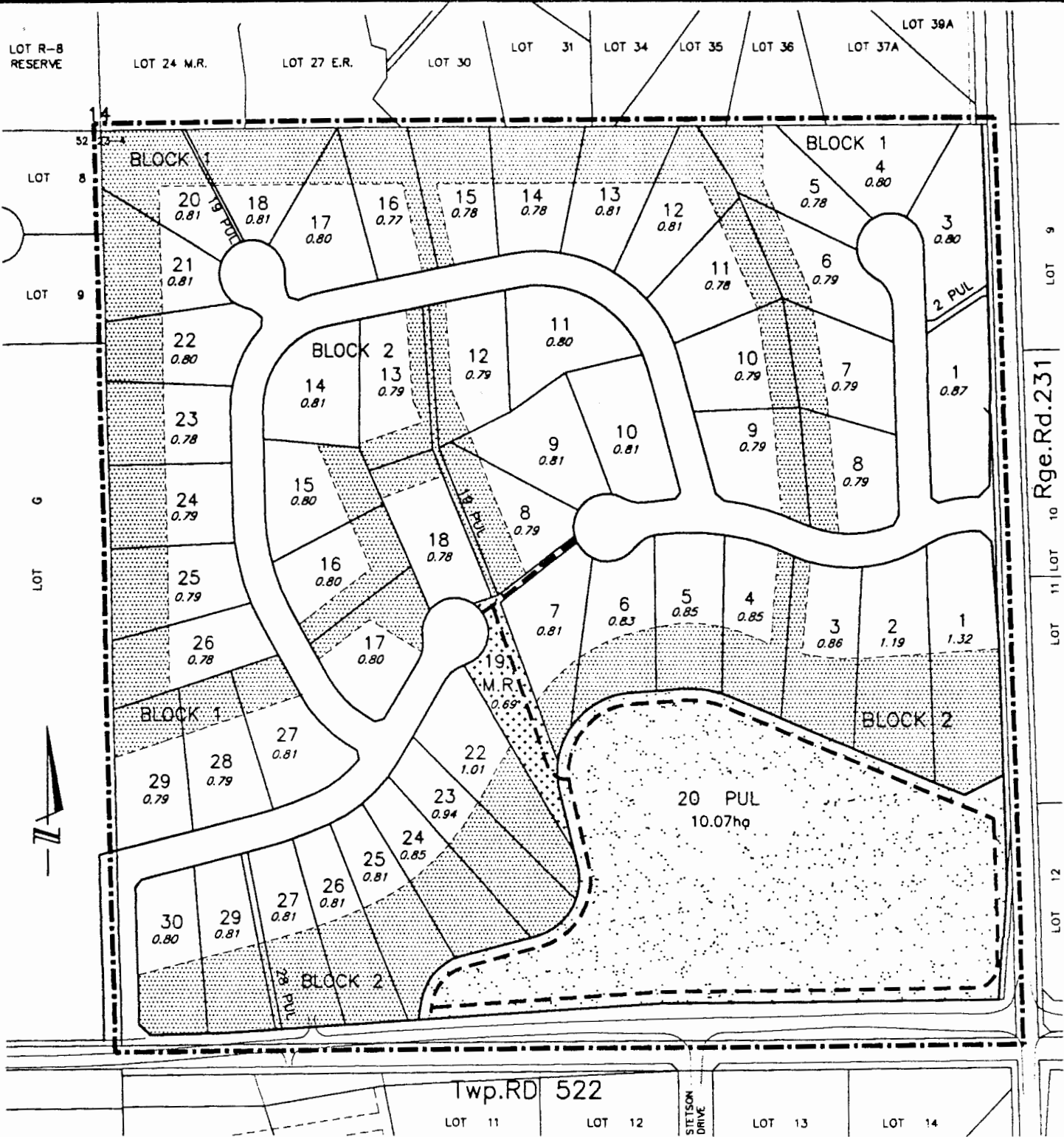
3.0 The Development Concept

3.1 Development Objective

The primary objective of the Deer Mountain Area Structure Plan is to create a viable residential community within an exceptionally attractive natural environment, by minimizing disturbance of the this natural environment, and its priority habitat areas, to the extent possible. The development concept shown on Figure 3 reflects this objective and most of the Municipal Development Plan policies listed in Section 1.4.

The major features of the development concept which respond to the primary objective are listed below:

1. A significant portion of the undisturbed indigenous natural area, particularly the Upland Forest Component and the Wetland Component, are protected by Conservation Easement.
2. The Conservation Easement also protects priority habitat areas by allowing for a generous, continuous corridor which links the uplands and adjacent lands to the important wetland *bedding* area.
3. The length of roadway has been reduced to the extent possible while still ensuring functional efficiency and safety.
4. All potential building pockets front onto the roads so that no vehicular crossings of the Conservation Easement corridor are required.
5. The limited extent of roadway and disturbance of tree cover will reduce the amount of storm water generated by the proposed development, so that the impact on natural wetland, which is proposed to serve a storm water management function, will be minimal.
6. The development concept respects the topography of the Forest Upland Component of the plan area and, to the extent possible, protects the natural drainage pattern.
7. To achieve maximum protection of the natural environment, particularly in terms of providing a perimeter wildlife corridor, about one third of the proposed country residential lots are just marginally (0.1 acre) below the 2.0 acre minimum size regulation. However, no lots are less than 1.9 acres in size. It is important to note that the average lot size is 2.04 acres, and that the number of lots being contemplated by this Area Structure Plan complies with the policies of the Municipal Development Plan. It is also important to note that because most of the existing heavy tree cover will be protected in perpetuity by the proposed Conservation Easement, the lots will be screened from surrounding roads and development, so that the negligible reduction in lot size will not be noticeable and, therefore, will not impact the surrounding area.



- 0.777 ha Country Residential
- Conservation Easement
- Municipal Reserve
- Potential Trail

Concept may be subject to change
 Lot and Block numbers also may change

December, 2000 Scale 1:5000

Lovatt
 Planning Consultants Inc.

Deer Mountain Area Structure Plan Strathcona County

Figure 3

Development Concept

8. A one acre (0.4 hectare) developable area is contained within each such lot, as per Municipal Development Plan policy.
9. As is noted previously, the design shown on Figure 3, combined with the natural tree cover and topography which will be protected by Conservation Easement, results in an exclusive residential enclave with limited exposure to, and visibility from, adjacent lands and roads.
10. The development concept responds, in particular, to the Municipal Development Plan environmental protection and conservation policies listed in Section 1.4 of this Area Structure Plan.
11. An attractive entrance feature which compliments the natural setting will be provided off Range Road 231.
12. A high quality of residential development will be promoted.

The concept results in the following land use distribution:

Gross Developable Area (as surveyed)	62.35 ha (154.07 ac)
Municipal Reserve	0.69 ha (1.72 ac)
Public Utility Lots	10.40 ha (25.70 ac)
Roads (included widening for RR 231)	7.43 ha (18.36 ac)
Residential	43.83 ha (108.31 ac)

The foregoing land distribution figures will be confirmed at the time of subdivision. Cash-in-lieu of Municipal Reserve may be provided for the balance of reserve lands owing. The actual amount owing also will be determined at the time of subdivision.

Additional roadway may be required at the time of subdivision to accommodate acceleration and deceleration lanes on Township Road 522 and Range Road 231, respectively.

3.2 Residential

The exclusivity afforded the plan area as a result of its natural features and inherent privacy, combined with its locational attributes, suggest that promoting a relatively high quality residential subdivision is appropriate. Although not part of this Area Structure Plan, architectural guidelines to ensure development control will be applied at the time of lot sales, marketing and housing construction. Quality control guidelines of adjacent country residential neighbourhoods will be considered. In keeping with surrounding development, manufactured homes moved on-site will not be permitted. Examples of the types of guidelines to be applied include:

- roofing and siding material
- colour
- fencing

- minimum house and garage size
- landscaping (selecting species to compliment indigenous species)

About one third of the 53 country residential lots are proposed at between 1.9 and 2.0 acres in size. However, as was noted previously, the average lot size is 2.05 acres, and all lots include a 1.0 acre developable area (see Figure 4). Actual lot sizes will be determined at the time of detailed subdivision.

Population and students generated by the plan area are summarized below. Population projections assume a density of 3.1 persons per dwelling unit. School generation is based on the following public/separate generation factors:

Elementary (Public/Separate)	0.26/unit/0.08 per unit
Junior High (Public/Separate)	0.11 per unit/0.04 per unit
Senior High (Public/Separate)	0.13 per unit/0.02 per unit

Assuming the 53 lots proposed, the resultant population and students generated are:

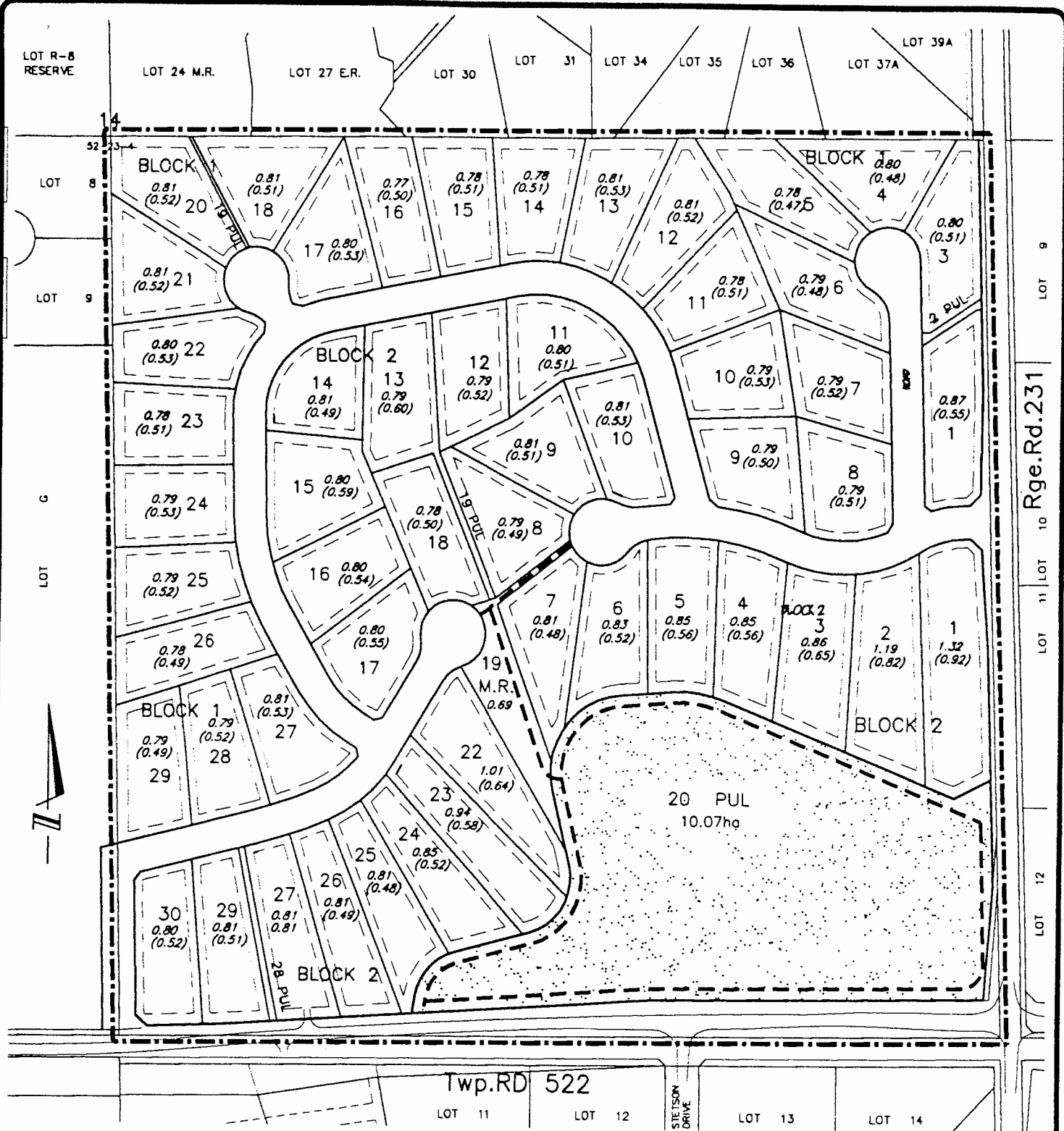
Population	164 persons
School Generation (Public/Separate)	
Elementary	14/4
Junior High	6/2
Senior High	7/1
Total Students	35

All figures are estimates only and are subject to change at the time of subdivision. No school sites are proposed within the ASP area and it is assumed that students will be absorbed into the surrounding school system.

3.3 Parks and Open Space

The natural environmental theme of the Area Structure Plan, combined with both the perceived desire of country residents to maintain privacy within their subdivision and input provided by County staff, suggest little demand for public park and open space. As such, most of the Municipal Reserve required to be dedicated will be in the form of cash-in-lieu. Three elements comprise the parks and open space system proposed for the Area Structure Plan lands.

1. **Central Tot Lot** - Municipal Reserve Lot 19, Block 1 is proposed within the central portion of the plan area and provides an opportunity for a *tot lot* facility. This 0.69 hectare parcel is easily accessible to all future residents of Deer Mountain and is being provided at the request of the County. The parcel also provides public access to the wetland feature.
2. **Walkway Linkage** - A Public Utility Lot (PUL) will be dedicated between proposed Lots 18 and 20 in Block 2 to provide pedestrian access to the reserve parcels in the Graham Heights and Windsor Estates subdivisions.



0.80 Lot Area
(0.49) Building Pocket Area

Deer Mountain Area Structure Plan Strathcona County

Figure 4

Developable Areas

December, 2000 Scale 1:5000

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Planning Consultants Inc.**

3. **Internal Trail** - A trail is proposed to be developed around the periphery of the wetland feature. This trail will link the two Municipal Reserve parcels. The trail standard will be determined as part of the development agreement at the time of subdivision.

3.4 Conservation Easement

The boundary of the Conservation Easement area shown on Figure 3 has been defined in consultation with Strathcona County staff. The easement will be implemented through Strathcona County's standard CONSERVATION EASEMENT GRANT AND AGREEMENT. Some minor adjustments to that agreement are proposed to recognize the residential, as opposed to agricultural, nature of the proposed development. For example, fencing may be restricted while fire pits may be considered.

As well as protecting the natural features of much of the Deer Mountain plan area, the Conservation Easement results in the following site specific and regional benefits:

1. The priority wetland habitat is completely surrounded by a substantial easement area, thereby protecting it from development and allowing it to remain relatively undisturbed. The width of the surrounding easement varies from 80 to 180 metres and affects some nine hectares of land.
2. The easement provides for a continuous wildlife corridor along the west and north boundaries of the plan area, and strategically located linkages from the corridor to the wetland habitat. The perimeter easement is proposed to be 50 metres wide, and assumes that an additional 50 metres will be added on the west side once the abutting small holding parcel is further subdivided. In the interim, the low intensity of development on the small holding does not restrict wildlife movements so that the westerly easement can function effectively as a corridor.
To the north, the 50 metre wide easement is augmented by abutting Municipal and Environmental Reserve parcels located in the adjacent Windsor Estates Subdivision. The linkage easements vary from 30 to 50 metres in width and provide viable options for wildlife movements.
In order to avoid potential conflict between wildlife and traffic on Range Road 231, the Conservation Easement does not extend along the backs of proposed Lots 3 and 4 (Block 2). However, based on detailed topographic surveys and identification of building envelopes at the time of subdivision, a narrower easement may be considered along the north boundary of these lots to protect existing tree cover, and to provide a buffer for adjacent developments in Windsor Estates.
3. The Conservation Easement protects the natural drainage course (intermittent) which extends through the north central portion of the plan area and drains into the wetland. The course is not well defined, but is wholly contained within the easement.
4. The Conservation Easement is proposed to extend along the backs and sides of lots and is of generally uniform width. As such, the easement can be easily described for registration at the time of subdivision, and easement provisions may be more easily enforced.

The registration of the Conservation Easement as contemplated by the development concept also benefits the developer as a result of the Strathcona County's lot bonusing policy (see Section 1.4). Some 17.12 hectares (42.30 acres) of land will be affected by the Conservation Easement. Based upon the draft worksheet for calculating both lot and Municipal Reserve bonusing, 13 bonus lots can be achieved.

4.0 Circulation and Municipal Services

The proposed traffic circulation and municipal servicing systems are described in the Engineering Design Report prepared in support of this Area Structure Plan by Infrastructure Systems Ltd. A brief summary of that report is provided below.

4.1 Traffic Circulation

A single 30 metre wide roadway, with lots fronting onto the road, is proposed through the plan area, and will provide for a link between Range Road 231 and Township Road 522. Four cul de sacs are proposed to extend off this road. An attractive mature spruce stand, which is unique within the poplar dominated forest comprising the plan area, is located between the two centrally located cul de sacs, thereby promoting its preservation. A road linkage to the west also is provided to facilitate future development. An emergency access is provided to Range Road 231. Road construction will conform to County standards.

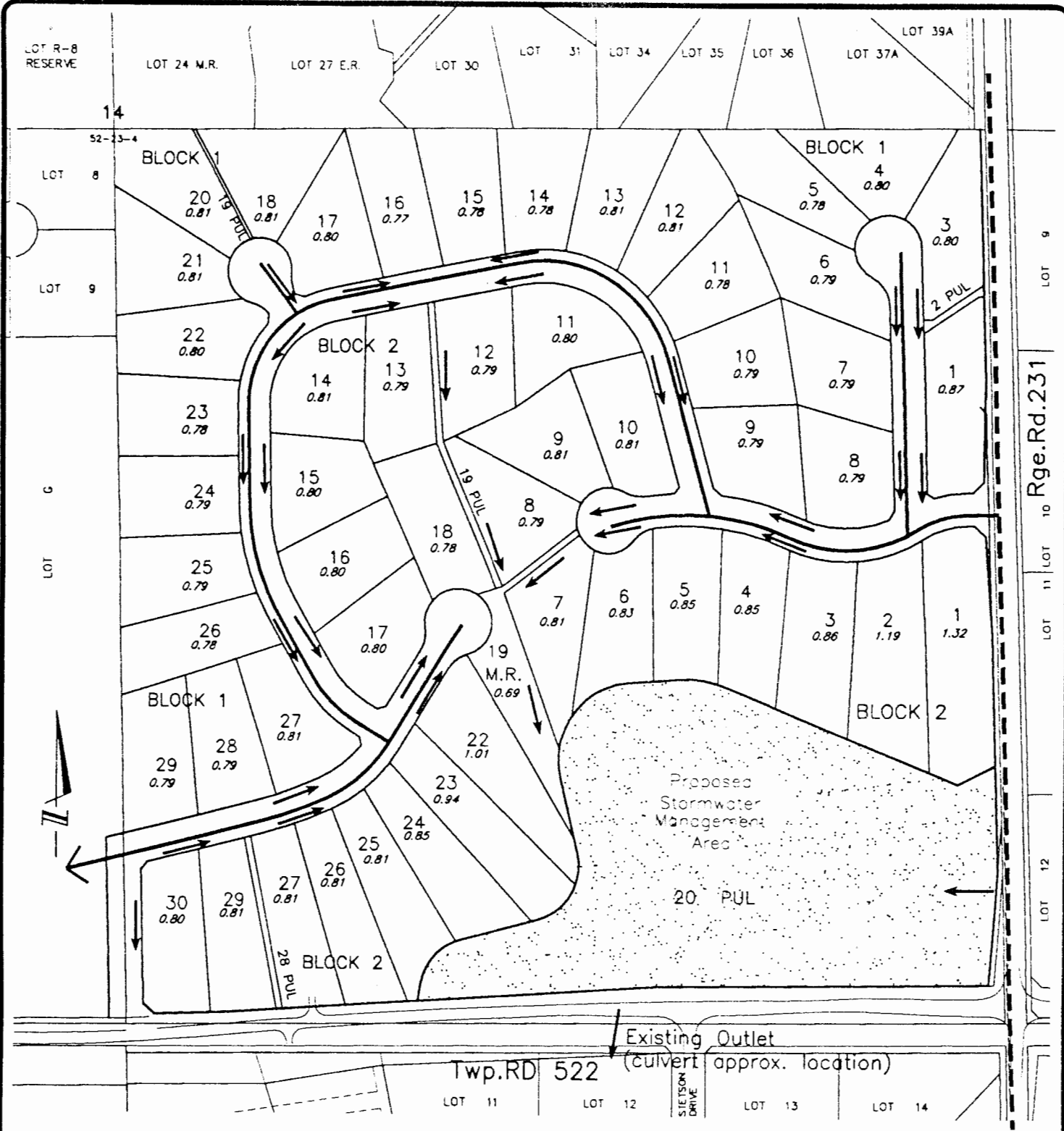
The connecting access onto Township Road 522 is proposed to be located along the west ¼ section (plan area) boundary so that the right-of-way dedication can be shared between adjacent landowners. The location of this access point meets County standards. The connection will be constructed as an emergency access, within a 15 metre wide right-of-way, until such time as the lands to the west are developed. At that time, an additional 15 metres of right-of-way will be required to be dedicated, and a full access will be constructed onto Township Road 522. In the interim, the emergency access will be constructed as a 6.0 metre wide gravel road centred on the 15 metre right-of-way.

4.2 Municipal Services

A low pressure water distribution system is proposed to service the plan area (see Figure 4). Sewage treatment and disposal is proposed to be on-site either through the use of conventional sewage treatment systems (septic fields), Minnesota Mounds or other acceptable method. Storm water management will rely on surface discharge being directed through a series of PUL's, culverts and roadside ditches to the (seasonal) wetland as shown on Figure 4. The detailed design will accommodate, as necessary, flows entering the site from adjacent catchments. A comprehensive storm water study will be undertaken, as per the requirements of Alberta Environmental Protection and Strathcona County, at the time of subdivision.

4.3 Shallow Utilities

Existing power, gas, telephone and cable TV services may all be extended to the site.



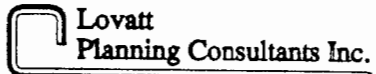
- ← Proposed Direction of overland flow
- - - Existing 150mm Watermain
- Proposed Water Distribution

**Deer Mountain
Area Structure Plan
Strathcona County**

Figure 5

Municipal Services

December, 2000 Scale 1:5000



5.0 Staging and Implementation

Two stages of development are proposed at this time (see Figure 6). Stage one comprises the east portion of the plan area, while Stage 2 comprises the west. Because staging is very dependent upon market demand, Stage 2 may be constructed in two phases.

An amendment to the Land Use Bylaw will be required prior to subdivision. The most appropriate amendment is to redistrict the plan area from Rural District to Country Residential District. It is important to note that although the lot dimensions do not fully comply with the current Land Use Bylaw provisions, the parcel configurations are reasonable and all setbacks can be maintained in defining a 1.0 acre developable area.

An Historical Resources Impact Assessment of the undisturbed north portion of the plan area has been undertaken, and will be submitted at the time of subdivision and development. No significant resources are located on-site. All required detailed engineering studies also will be undertaken at the time, and will be completed to the satisfaction of the County.

**Appendix A Environmental Investigation of
Deer Mountain Plan Area by
Spencer Environmental Management Services Ltd.**



SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

401 Boardwalk, 10310 - 102nd Avenue, Edmonton, Alberta T5J 2X6
Phone (780) 429-2108 Fax (780) 429-2127
E-mail: spencer@planet.eon.net

23 November 1999
File EP-92

Jim Chorley
Resland Development Inc.
2nd Floor, 10814-106 Ave
Edmonton, AB
T5H 4E1

Dear Mr. Jim Chorley;

Re: Environmental Investigation of SE 1/4 of 14-52-23-W4

As requested by Lovett Planning, we have undertaken a brief investigation of the natural features of the above-mentioned property in support of a rural-residential land use planning exercise. Our investigation consisted of the following:

- A site inspection on 14 November 1999 consisting of a meandering foot survey noting dominant vegetation, evidence of wildlife use and landforms.
- Examination of a 1:5,000 aerial photograph dated May 1997.
- Examination of County of Strathcona landscape ecology assessment habitat maps and accompanying report.
- A telephone interview with Mr. Reg Grey, the former land owner and long time resident in the area.
- Preparation of this letter report.

The timing of our site inspection limited the kinds of information that could be collected. By November, most herbaceous plant species have senesced to the point where identification is not possible, leaf litter and ice cover the ground layer of vegetation, most non-resident wildlife species have migrated from the area and even year-round avian species are less visible than they would be in spring. On the other hand, the minimal snowfall prior to the day on inspection did allow for identification of broad vegetation communities and the light skiff of snow present allowed for good visibility of animal tracks and fecal pellet groups. This time of year generally offers good conditions for observing fall use of habitat by ungulates because tracks, pellet groups, scrapes and rubs are easily visible and animals are actively moving throughout the countryside.

The subject lands can be described as a quarter section (65 ha) of primarily hummocky, gently undulating terrain and a flatter, low-lying area in the southeast corner. Most of parcel is occupied by relatively undisturbed, diverse, natural vegetation. Years ago, a central portion, approximately 8 ha (20 acres) was cleared for cattle grazing. Cattle have grazed the area for years including last summer. A recent landscape ecology assessment of

Strathcona County, prepared at a scale of 1:30,000, describes the area as comprising a mix of upland poplar and upland mixedwood forest with a small swamp component (Geowest 1997*). Based on the habitat types, the size of the natural habitat units and the landscape connectivity, they rated these naturally-vegetated areas as a mix of Priority 1 and 2 wildlife habitat (out of three possible categories). They define priority habitats as remnant habitats that can serve conservation purposes.

Our brief investigation generally concurs with this assessment but was conducted at a smaller scale and so can report slightly more detail. With respect to vegetation, habitat and topography, the quarter section in question can be divided into three distinct components:

Upland Forest

The majority (approximately 70 percent) of the quarter section is hummocky terrain occupied by a largely continuous, variably-aged, upland deciduous, woodlot. The woodland habitat occupies most of the northern half and central portions of the property and extends south along the west and east property edges. Two forest associations were distinguished:

The majority of the area is a variably-aged (including sapling to decadent) Balsam Poplar (*Populus balsamifera*) stand. Mature trees appear to be most abundant. In drier locations, such as on hummock tops, Trembling Aspen (*Populus tremuloides*) dominates. Young but decadent Paper Birch (*Betula papyrifera*) are scattered throughout. Generally, there is a poorly-developed tall shrub layer and poorly to moderately-developed low shrub layer dominated by rose (*Rosa* sp.) with abundant honeysuckle (*Lonicera* sp.), cranberry (*Viburnum* sp.) snowberry (*Symphoricarpos* sp.), with scattered Red-osier Dogwood (*Cornus stolonifera*) and Wild Raspberry (*Rubus idaeus*). The herb layer could not be characterized although some grasses were present. The ground layer was generally leaf litter, however, some Bunchberry (*Cornus canadensis*), violet (*Viola* sp.) and wintergreen (*Pyrola* sp.) was visible.

The central-eastern part of the woodlot is a mature, mixedwood Balsam Poplar-White Spruce (*Picea glauca*) forest. The spruce are mainly evident in distinct, open-canopy clusters of mature trees. Some young spruce are scattered throughout this area. Scattered mature Paper Birch are also present. Moss is a dominant ground layer component.

Within the woodlot, numerous, scattered, low-lying areas support small (less than 0.2 ha), depressional wetlands, primarily wet meadows. We did not observe any open water marshes; we did observe a few very small, shallow, emergent sedge marshes with willow fringes.

Wildlife species observed in woodlands included Black-capped Chickadee, Hairy Woodpecker, Blue Jay and Pine Siskin. These species are locally-common and would be expected to reside in this habitat year-round. We also observed signs of Snowshoe hare (locally-abundant fecal pellets) and deer (probably White-tailed) in the form of tracks, pellet groups and trails. The understory appears to be moderately to well-browsed in some locations, trails cross the woodlot throughout. The habitat is certainly suitable for year-round deer use. The mature spruce would provide useful thermal cover in very cold weather. Use of the area by cattle may limit use by deer. The effects of cattle grazing and trampling on the understory can be seen in several locations. There was no indication of

* Geowest Environmental Consultants Ltd. 1997 Prioritized Landscape Ecology Assessment of Strathcona County, Alberta. Prepared for County of Strathcona. 131 pp.

moose using the woodlot except near the south edge where it grades into the wetter willow community. Mr. Grey indicates that the area is well-used by numerous deer year round and by several moose.

Based on the woodlot size, topographical variation, complex vertical structure and specific diversity, it is expected to support a diverse assemblage of numerous mammalian and avian species. Additional commonly-occurring mammals expected to reside there include Red Squirrel, Coyote, skunk, Least Weasel, and numerous small mammals (voles, mice and shrews). Bird species expected to make use of the area range from Ruffed Grouse to Great-horned Owl and Red-tailed Hawk, to several woodpeckers and many passerines.

Grassland

In the west-central and south portions of the parcel, there is one significant, irregularly-shaped, grassy area (grassland). This area was cleared years ago and has been heavily grazed by cattle. Grasses are dominant, however, some forbs, particularly weedy ones (e.g. Canada Thistle (*Cirsium arvense*) and Common Plantain (*Plantago major*)) are present. Dominant plant species could not be identified. Shrubs are generally absent although in some localities scattered small shrubs are present (e.g. snowberry, Red-osier Dogwood). There is a farm track road that leads through this area, from Township 522 to the north boundary. At the east end of the clearing an artesian well surfaces to create an open water wetland (approximately 0.2 ha in area). Thirty-five years ago, the well was tapped, through a controlled-flow pipe to bring water to a cattle watering hole. Cattle trampling has prohibiting development of a natural shoreline or emergent vegetation. The pond, therefore, provides very low-quality wildlife habitat.

We did not observe any wildlife in the grassland area. Grazing limits provision of food or cover for wildlife, however, the area is likely used by small mammals. The few shrubs in the area appear to have been lightly browsed by deer, however, the virtual absence of pellet groups or tracks suggest that it is little used by ungulates.

Wetland

The southeast portion of the site is a relatively flat, poorly-drained area. Here the vegetation grades from the mixedwood forest at the north to a semi-open swamp dominated by clusters of closed-canopy willows. There is also a scattering of sapling White Spruce, young Balsam Poplar and Paper Birch. Further south, the willows open up and a sedge understory becomes more obvious. This willow/sedge stand then grades to the south and west into a flatter, more expansive tussocky, sedge/grass wet meadow or shallow emergent marsh. Many of the sedge/grass tussocks support small, browsed, Bracted Honeysuckle (*Lonicera involucrata*). Each year, the sedge (*Carex*) area likely holds some standing water until late spring or early summer, after which standing water disappears but soils remain moist. A knoll in the extreme southeast corner supports a disturbed, Balsam Poplar-Trembling Aspen stand where grazing has significantly altered the understory. Similar disturbance was noted in the property's southwest corner.

According to Mr. Grey, groundwater seeps to the surface at one location along the north boundary of the swamp. This is likely the primary water source for the wetland. Years ago, the sedge area was occupied by an open water slough. Persistent draining over forty years, first by landowners and then by a county-installed ditch, has eliminated the open water component. Draining continues today.

Within the willow component, deer and moose droppings and tracks were abundant and some beds were noted. Fresh signs indicated that a moose was present that day. The willows were lightly browsed only. As expected at this time of year, we did not observe any bird species in the wetlands. Based on habitat present, in spring and summer and early autumn the area is expected to support a diverse grouping of breeding and migrating songbirds. Species most likely to be found there include: Yellow Warbler, Song Sparrow, Savannah Sparrow, LeConte's Sparrow, Clay-colored Sparrow, Fox Sparrow, Wilson's Warbler, Least Flycatcher, Alder Flycatcher, and perhaps Sedge Wren.

In summary, the majority of the subject lands support several, diverse, relatively undisturbed vegetation communities that are typically found in various concentrations in undeveloped areas throughout Strathcona County. The habitat diversity of the site, with the juxtaposition of grassland, wetlands and woodland, comprises prime wildlife habitat suitable for many of the avian and mammalian wildlife species typically found in Strathcona County. Unlike many of the nearby quarter sections, this parcel is primarily naturally vegetated, has no housing and is not cultivated. It, therefore, currently provides a refuge for coyotes and ungulates moving through the surrounding area. Based on the high quality habitat, the quarter section may also support some less common species. No special status wildlife or plant species were noted. Cattle grazing has slightly degraded the habitat. In some locales, the fencelines and some of the animal paths throughout the wooded areas were heavily trampled and the smaller, open-canopied treed areas are heavily grazed and have little shrub understory. If left undeveloped and ungrazed, these areas could be easily restored.

We trust that this information satisfies your requirements. Please do not hesitate to contact us with any questions or comments. Thank you for the opportunity to be of service.

Yours very truly,

SPENCER ENVIRONMENTAL
MANAGEMENT SERVICES LTD.



Lynn Maslen, M.Sc., P. Biol.
LM/m

cc: Olga Lovett, Lovett Planning



**Appendix B Draft Worksheet for Lot and Municipal Reserve
Bonusing**



DRAFT WORKSHEET
Rural Open Space Dedication

Municipal Development Plan Policy Area
 Number of Lots Proposed

53 Lots

A Gross Developable Area

154 ac

Deduct

Road Widening

1.0 ac

Crown Claimed Land (waterbodies)

Environmental Reserve

Stormwater Management Facilities

25 ac

Net Developable Land

128 ac a

B # Lots Allowed

Net Developable Land (a)

128

1 lot per 3.2 acres

Total Lots Allowed

40 Lots b

C Lot Bonusing

Number of Lots Proposed

53 Lots

Deduct

Total Lots Allowed (b)

40 Lots

Bonus Lots

13 Lots c

Bonus Lots

1 Bonus Lot per 3.0 acres dedicated for
 Conservation purpose

13 Lots

Acres Required for Conservation Purpose

39 ac d

D MR Disposition

Gross Developable Area

154 ac

Deduct

Road Widening

1.0 ac

Environmental Reserve

Balance of developable Area

153 ac

MR Owing = 10% of Balance

15.3 ac e

Area Proposed for Conservation Purpose

42 ac

Deduct

Acres required for Conservation Purpose (d)

39 ac

Net over or under deduction

3 ac

MR waived at 1 acre per 3.0 acres Dedicated

1.0 ac f

Net MR owing

14.3 ac g

E Cash in lieu

Net MR owing (g)

14.3 ac

MR Dedicated

1.71 ac

Outstanding MR

12.6 ac

\$ per acre

h

Net cash in lieu required: (h) x \$ _____

Note: Land areas have been rounded to the nearest whole number for ease of calculation, and all figures are subject to change depending on the final plan of subdivision.

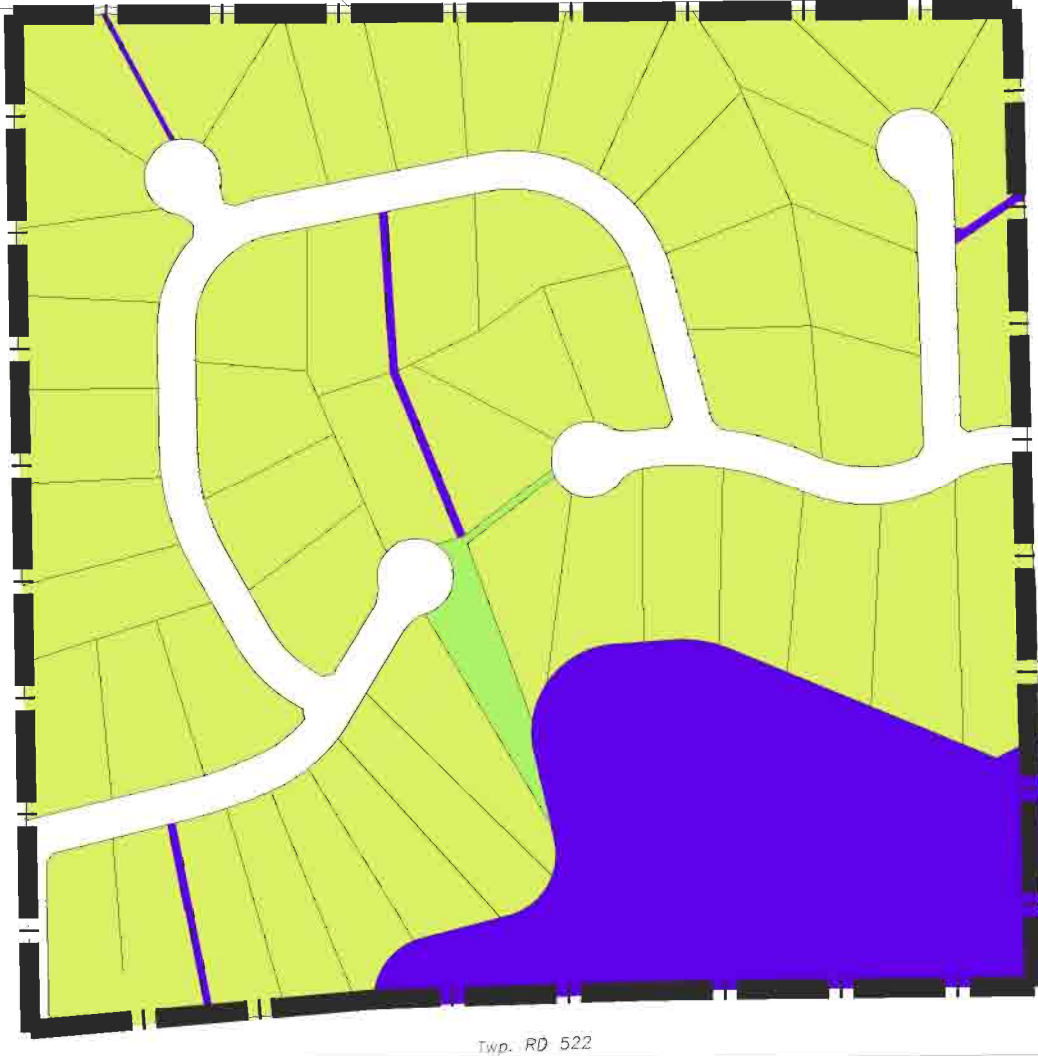
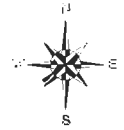


Fig. RD. 231

Deer Mountain Area Structure Plan Bylaw 97-2000

Date of Adoption 16 January 2001

Developable Area
Municipal Reserve
PUL



Road Plan
ASP Boundary



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Any reliance on the information contained herein is at the user's risk. Changes are periodically made to the ASPs/ARPs and may be made without notice. It is therefore recommended that you contact Planning & Development Review Services for original Plans.

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