BYLAW 72-2002

A BYLAW OF STRATHCONA COUNTY IN THE PROVINCE OF ALBERTA, FOR THE PURPOSE OF ADOPTING THE BOAG LAKE ESTATES AREA STRUCTURE PLAN.

WHEREAS it is deemed advisable to adopt the Boag Lake Estates Area Structure Plan;

NOW THEREFORE, the Council of Strathcona County, pursuant to the authority conferred upon it by the *Municipal Government Act, R.S.A. 2000, c. M-26*, and amendments thereto, enacts as follows:

1. That this Bylaw is to be cited as the "Boag Lake Estates Area Structure Plan".

2. That Schedule "A" attached hereto is hereby adopted as part of this Bylaw.

Read a first time this 25 day of June, 2002.

Read a second time this 25 day of June, 2002.

Read a third time and finally passed this 10 day of September, 2002.

Mayor

Manager,
Legislative and Legal Services

Date Signed: September 17/02

STRATHCONA COUNTY

Boag Lake Estates
Area Structure Plan

Prepared on behalf of

Raekay Holdings Ltd.

by

Lovatt Planning Consultants Inc.
and
Al-Terra Engineering Ltd.

August 2002

Boag Lake Estates Area Structure Plan

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1 INTRODUCTION

1.1 Purpose

This Area Structure Plan has been prepared on behalf of Raekay Holdings Ltd., and is generally in accordance with Strathcona County's guidelines for the preparation of such planning documents. The plan provides a framework for the proposed country residential subdivision and development of the SE ¼ of 29-52-22-W4M, comprising some 62 hectares (154 acres). The Area Structure Plan may be cited as the Boag Lake Estates Area Structure Plan, and should be considered in the context of the accompanying Design Brief, prepared by Al-Terra Engineering Ltd.

1.2 Regional Context

The Boag Lake Estates plan area is located along the east side of Boag Lake and the north side of Secondary Highway 630, some 2.4 kilometres (1.5 miles) east of Sherwood Park and Highway 21. Figure 1 indicates that the area is surrounded by a mix of pasture land and country residential development, and is bounded by:

- Range Road 224 and agricultural lands to the east;
- Secondary Highway 630 and a mixed use small agricultural holding and country residential subdivision to the south;
- An older, large lot country residential subdivision and Boag Lake to the west; and,
- Hunter Heights (residential subdivision) to the north.

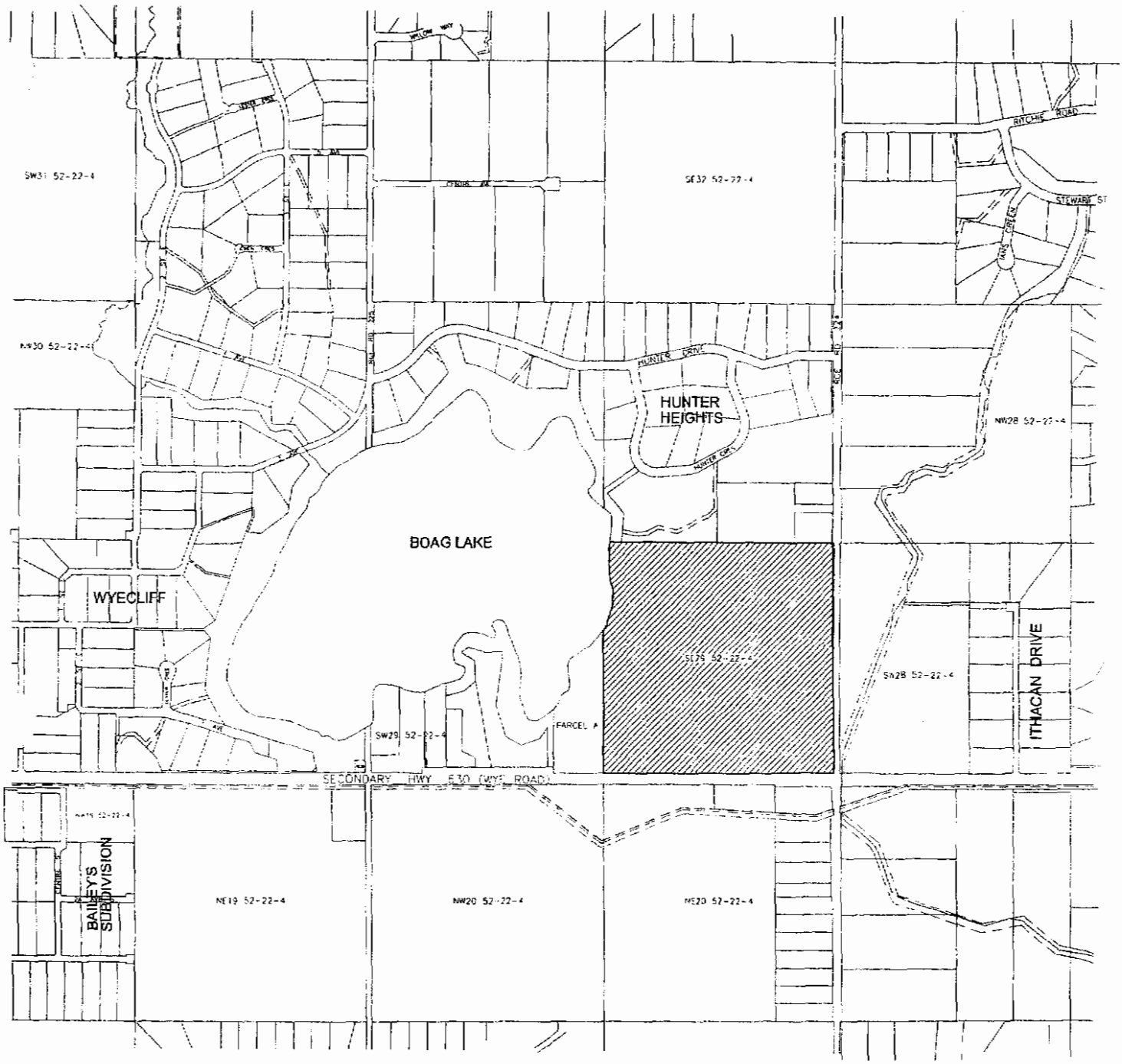
All the adjacent country residential subdivisions are buffered from the plan area by natural tree stands.

1.3 Ownership

Raekay Holdings Ltd. owns 54.22 hectares (134 acres) or 87 percent of the total plan area. The Crown owns the remaining 8.0 hectares (20 acres) or 13 percent. The lands owned by the Crown correspond to a significant natural area located in the north central portion of Boag Lake Estates. The Crown also owns the bed and shore of Boag Lake, which is excluded from the tilted area of the ¼ section.

1.4 Policy Context

This Area Structure Plan has been prepared in accordance with 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.



LEGEND

PLAN AREA

BOAG LAKE ESTATES
AREA STRUCTURE PLAN
REGIONAL CONTEXT

FIG 1

Lovatt
Planning Consultants Inc.

DWG: FIG 1.dwg
SCALE 1: 20,000
0 10 25 50 100

AL-TERRA ENGINEERING

The plan also conforms with Strathcona County's 1998 Municipal Development Plan Bylaw No. 38-98, as amended by Bylaw 89-2000 and Bylaw 71-2001. The Municipal Plan includes the subject lands in the Country Residential Policy Area, which *is intended to accommodate traditional country residential development and cluster country residential development (Policy 10.21). 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 polices are particularly significant in identifying an optimal approach to developing the plan area for residential purposes, while still protecting the integrity of Boag Lake and the existing natural features of the plan area. These policies are:

1. **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.

2. **Policy 10.29** (Development within 800 metres of Boag Lake) – Future development within 800 metres of Boag Lake may be allowed on its merits with due regard to environmental considerations and compatibility with adjacent land uses.

3. **Policy 10.30** (Design Guidelines) – The following design guidelines shall apply to development of traditional country residential development and subdivisions:

    a. The minimum parcel size for traditional country residential development shall be 0.8 hectares (2.0 acres);

    b. The use of a range of environmental protection mechanisms (i.e. conservation easement, environmental easement) shall be encouraged;

    c. The maximum base density shall not exceed 50 parcels per developable quarter section (65 hectares or 160 acres). This density is equivalent to one parcel per 1.2 hectares (3.0 acres) of gross developable land. Lands suitable for storm water management facilities, perimeter road widening or for environmental reserve dedication shall not be included in the calculation of gross developable land area;

    d. The maximum density base may be exceeded only in cases where bonusing is used. One additional parcel may be granted for each 1.2 hectares (3.0 acres) of land designated under a conservation easement or other reserve designation for the purpose of environmental conservation.

4. **Policy 16.5** (Minimum Developable Area of 0.4 Hectare) – Except for Cluster Country Residential lots, all proposed parcels shall have an accessible minimum developable area of 0.4 hectares (1.0 acres) with a near surface ground water table of not less than 2.0 metres (6.6 feet) below the surface. Lands below the 1:100 year flood elevation shall not be considered as part of the developable lands.

5. **Policy 16.6** (Access and Roadway Frontage) –Parcels that are 4.0 hectares (9.6 acres) or less in size shall have direct access onto an internal road with linkages to highways or County roads, which are acceptable to the County or Alberta Transportation.

6. **Policy 16.7** (Parcel Width/Length Ratio) - Each parcel shall have a width to length ratio no greater than 1:4, unless otherwise approved in an adopted Area Structure Plan.

7. **Policy 16.34** (Dedication of Municipal Reserve) - Dedication of Municipal Reserve land or cash-in-lieu shall adhere to *Strathcona County Municipal Policy Handbook SER-008-015-Dedication of Municipal Reserve and Environmental Reserve Lands.*

8. **Policy 16.35** (Mechanisms for Protecting Habitats) - Notwithstanding Section 16.26, where other mechanisms such as conservation easements are not available, municipal reserve may be taken as a means of protecting habitats where such areas:

    a. Are identified in Prioritized Landscape Ecology Assessment of Strathcona County, 1997 and other related studies;

    b. A site assessment by the proponent, a professional designate and/to the county has determined the area to be sensitive or significant.

Bylaw 6-2001 amended the Municipal Development Plan to include a detailed tree retention policy to be applied when preparing an Area Structure Plan for any lands included in the Country Residential Policy Area of the Municipal Plan. The policy recognizes trees as an important biophysical resource and community amenity and, for the purposes of this plan, requires that:

- Extensive predevelopment clearing of high quality tree stands be regulated through an approved Area Structure Plan;
- Existing tree cover will be evaluated through a biophysical assessment and those areas to be protected will be preserved through the provisions of an Area Structure Plan;
- Tree cover approved for removals should be maintained for as long as possible and clearing should be minimized during critical wildlife nesting and rearing periods; and,
- Strathcona County may require the protection of treed areas through conservation easements.

Although designated as country residential by the Municipal Development Plan, the plan area is districted Agriculture: Future Development (AD) by the County's Land Use Bylaw No. 8-2001. 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 EXISTING CONDITIONS

2.1 Surrounding Development

The Boag Lake Estates plan area is surrounded by country residential subdivisions, pasture and hay lands, and Boag Lake itself. Country residential development is the predominant land use in the area and surrounds Boag Lake on all sides except to the east. The plan area is located on the east side of the lake, and is the only remaining unsubdivided ¼ section abutting Boag Lake.

Specific developments surrounding the plan area are shown on Figure 1 and are described as follows:

1. As is noted in Section 1.2, an older, unnamed country residential subdivision comprising seven parcels, is located west of the plan area, between Boag Lake and Secondary Highway 630. A service road extending along Secondary Highway 630 provides access to most of these parcels.

2. The Hunter Heights country residential subdivision is located adjacent the north boundary of the plan area, and is accessed via an internal road which links with Range Road 224 to the east, and Range Road 225 to the west. The internal road does not extend as far south as the plan area so that the development of the Boag Lake Estates site will result in limited, if any, impact on Hunter Heights. An extensive natural tree stand provides a natural buffer between the two areas.

3. Three country residential parcels, which are not part of the Hunter Heights subdivision, are located just northeast of the plan area and are accessed directly off Range Road 224. Only one of these three parcels is developed.

4. The west half of the ¼ section which is located on the east side of Range Road 224, across from the plan area, is being used for grazing, while the east half has been subdivided into 15 country residential parcels, all of which front onto Ithacan Drive.

5. The ¼ section located south of the plan area, across Secondary Highway 630, comprises a mix of pasture lands and country residential parcels. All 12 of the country residential parcels contained in this southerly ¼ section are accessed directly off Range Road 224.

In addition to the foregoing land uses, it is important to note that Wye Elementary School (Kindergarten to Grade 6) is strategically located on the west side of Boag Lake to serve the proposed Boag Lake Estates development. Also, Wye Community Hall, and an open playing field, are located southwest of the plan area, within Bailey's Subdivision. The development of the Boag Lake Estates lands for residential purposes will contribute to the continued viability of the Community Hall.

The extent of country residential development surrounding the plan area and Boag Lake suggests that such development within the plan area will result in compliance with Municipal Development Plan Policy 10.29, which states that *future development within 800 metres (0.5 miles) of Boag Lake may be allowed on its merits with due regard to environmental provisions and compatibility with adjacent land uses.* The environmental provisions of this plan will need to protect the integrity of Boag Lake.

2.2 Natural Features

Spencer Environmental Management Services Ltd. conducted an environmental investigation of the plan area in December of 2000. The investigation was updated in November, 2001, and is based upon:

- A comprehensive site inspection;
- Interpretation of May, 1993 and June, 1998 aerial photos;
- Examination of the County of Strathcona prioritized landscape ecology assessment habitat maps and accompanying report (Saxena *et al* 1997); and
- Discussions with representatives of Planning and Engineering Services, Strathcona County.

The results of the investigation are contained in Appendix A, and provide information on the natural vegetation and wildlife use of the plan area. The investigation also meets the requirements of the County's tree retention policy for a biophysical assessment of existing tree cover to determine which treed areas should be protected as part of the provisions of an Area Structure.

2.2.1 Natural Vegetation

The investigation determined that natural vegetation covers approximately one half of the plan area, while the balance is cleared and is used primarily as pasture land with some cultivated area. The natural vegetation is described as a mosaic of wetlands and adjacent upland forest (woodlots), comprising two relatively large units including:

- The Boag lake shoreline and adjacent natural vegetation; and,
- A more central wetland/woodlot complex.

These units are shown on Figure 2 and are connected by a natural woodlot located immediately north of the plan area. The units are described as follows:

1. Unit One – Boag Lake and Adjacent Natural Shoreline Vegetation

Unit One comprises the treed areas located adjacent to, and extending back from, the shoreline of Boag Lake. Boag Lake ultimately drains into Oldman Creek via a combination of natural and engineered drainage courses. Within the plan area, the east shoreline of the lake slopes fairly steeply to the water's edge. No emergent vegetation zone is evident. An open, mature Balsam Poplar stand occupies the slope and top-of-the bank, and extends some 80 to 170 metres to the east. Near the shoreline, the trees grade into low shrubs and sapling poplar. Common Tansy, a weedy species that indicates previous disturbance, is abundant at the shore's edge. A variably developed, low shrub layer of snowberry, gooseberry and other species is evident along the top-of-the-bank, along with some open, grassy areas. Cattle have grazed these lands.

In the southwest portion of the plan area, the lake shoreline is located further to the west. However, the plan area boundary *cuts through* a natural vegetation community that extends from the south the eastern shore of Boag Lake, down to Secondary Highway 630. The vegetation comprises a mosaic of upland and wetland forest. Mature Balsam Poplar stands dominate the north part of this mosaic, while small clusters of decadent birch are interspersed throughout the hummocky terrain found further south. A peat land community is evident in the southwest corner of the plan area. Black Spruce is the dominant tree species in this corner. Labrador tea and, in some areas, sedges are common.

2. Unit Two – Central Wetland/Woodlot Complex

Unit Two comprises the wetland/woodland complex located in the central portion of the plan area. This unit covers some 22 hectares and extends to, and beyond, the north plan area boundary. Five subunits have been identified within this complex, including:

(a) An open-water, oval-shaped marsh (or slough) approximately 5.5 hectares in size which is located central to the complex. The marsh appears to be isolated, having no obvious inlet or outlet. Marsh vegetation consists of the typical vegetation zones found in most open-water, aspen parkland marshes. The central open water feature is approximately 3.0 hectares in size, and likely supports dense submergent vegetation and an emergent vegetation zone of variable width. This zone is dominated by Common Cattail, Common Great Bulrush and encompasses a sedge dominated, tussocky, wet meadow bordered by a strip of willow and birch.

(b) A birch and young Balsam Poplar woodlot which is located between the marsh and the cleared lands to the west and east.

(c) A stand of young aspen and Balsam Poplar which is located to the south and southwest of the marsh, with a variable canopy and generally poorly-developed shrub layers dominated by Saskatoon Berry bushes, rose shrubs and snowberries. Scattered throughout this area are several intermittent, shallow depressions occupied by sedge and willows. Deadfall is common.

(d) A roughly linear Balsam Poplar stand which is located at the southeast extreme of Unit Two. This stand extends to the south and *snakes* through the otherwise open, grazed lands comprising the southeast quandrant of the property. While mature and decadent Balsam Poplar dominate, some Trembling Aspen and a few mature White Spruce are also present in this open stand. Although low shrub layer of snowberry and gooseberry is present, no tall shrub layer exists. The stand has been grazed by cattle, and deadfall is abundant

(e) The flat lands located north and east of the marsh appear to be peat lands that stretch to the north property boundary, and beyond. Young, very dense Black Spruce dominate, but at times give way to small stands of young and dense Paper Birch, with a sedge understorey. This understory is made up of Labrador Tea, ferns and moss. The tree density and uniform size over much of the area suggests regeneration following a fire. The eastern boundary of the complex comprises a thin strip of aspen, Balsam Poplar and Saskatoon Berry.

A small 0.5 hectare woodlot is located to the east of Unit Two and is connected to this unit by a field shelterbelt which extends along the north boundary of the plan area The centre of the woodlot supports an isolated swamp of scattered willow with a sedge understorey. The swamp is surrounded by a dense band of young aspen and Balsam Poplar, with a thick shrub layer of rose, Saskatoon Berry, Red-osier Dogwood and willow.

2.2.2 Wildlife Habitat

The Spencer Environmental investigation determined that portions of both Units One and Two are priority wildlife habitats. Unit One provides a habitat for the types of mammal and bird species which are typically found in the general vicinity of Boag Lake. Signs of use by deer, coyotes, and snowshoe hares, as well as chickadees and woodpeckers were evident at the time of the field survey.

LEGEND

	RETENTION AREA	BP/Bi	BALSAM POPLAR AND BIRCH
	UNIT TWO	A/BP	BALSAM POPLAR AND ASPEN
	UNIT ONE	G	GRASSLAND
C	CULTIVATED		
P	PEATLANDS		
BP	BALSAM POPLAR		

BOAG LAKE ESTATES
AREA STRUCTURE PLAN
NATURAL VEGETATION

FIG 2

Lovatt
Planning Consultants Inc.

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SCALE 1:5000
0 10 25 50 100

AL-TERRA ENGINEERING

Small mammals such as squirrels, mice and voles also likely exist. Because of the lack of emergent vegetation, the portion of Boag Lake that abuts the northwest portion of the plan area is not expected to provide a habitat for many amphibian or breeding water birds.

The most significant habitat function of Unit One is its connection to the remainder of Boag Lake and Oldman Creek, which forms a significant wildlife corridor. The natural vegetation surrounding Boag Lake is an important contributor to this corridor function. Unit One may also serve a corridor function between Boag Lake and the wooded areas directly south of Secondary Highway 630 for large and medium sized mammals, and terrestrial birds such as Ruffed Grouse. Although Secondary Highway 630 likely compromises this function, the corridor is still considered significant.

Unit Two is also a heterogeneous and productive wildlife habitat. The marsh provides both a waterfowl staging and nesting area. Numerous songbirds and passerine species are likely attracted to the marsh and the surrounding shrub, woodlot and smaller wetland areas. The elimination of cattle grazing may restore some of the vertical structure diversity of these areas, increasing their potential for songbird nesting.

Although the peat lands portion of Unit Two provides a critical local winter habitat for deer, the uniformly aged spruce trees limit this area's appeal for bird nesting.

The size and configuration of the linear woodlot extending into the southeast portion of the plan area, and the small woodlot located to the east of Unit Two, limit their function as a wildlife habitat. However, the linear feature, in particular, provides a desirable residential amenity feature.

The connection between the two units, along the north boundary of the plan, is important since both the habitat and amenity value of the units is increased by such a connection.

2.2.3 Recommendations

Spencer Environmental recommends retention of the following natural areas in support of the County's tree retention policy, and to preserve significant wildlife habitats.

- **First**, most of the natural vegetation comprising Unit One should be retained to the extent possible. In particular, the vegetation located directly east of Boag Lake should be retained, along with at least a 30 metre wide corridor along the west boundary of the plan area, connecting Boag Lake to Secondary Highway 630.
- **Second**, those lands shown as the Retention Area on Figure 2 should be retained since the marsh and the surrounding woodlot are considered to be valuable natural resources. The proposed Retention Area is sufficiently large to continue to support a viable and diverse wildlife habitat. All the lands north of the marsh should be retained as part of the Retention Area.
- **Third**, a strip of land along the north boundary of the plan area should be retained in its natural state to connect Units One and Two. Given that the two units are already linked north of the plan area, the connecting strip with the plan area may be less than 30 metres wide.

The foregoing recommendations will need to be recognized in designing the Boag Lake Estates country residential subdivision.

2.3 Topography and Natural Drainage

The plan area is described as hummocky, undulating terrain with a number of high nodes and low areas. In addition to Boag Lake, and the marsh and southwest low area described in Section 2.2, a significant low area exists in the southeast corner of the site. This feature is about 3.6 hectares in size, and accommodates natural runoff from the east and south portions of the plan area. However, because the low area drains under Range Road 224 into an engineered drainage canal, this low area contains no standing water.

The highest lands are located in the northeast corner of the plan area where a significant node is evident as shown on Figure 3. Figure 3 also shows three high points which should be recognized in designing the alignment of the internal road.

The slope and top-of-the-bank of Boag Lake are located some five to twenty metres back of the shoreline, with a change in grade of about five metres. As is noted above, the central marsh appears to be perched with no inlet or outlet. The marsh contains standing water.

The peat land located north of the marsh drains towards the north, and the westerly portions of the plan area drain to the west, towards Boag Lake.

2.4 Existing Improvements and Rights-of-Way

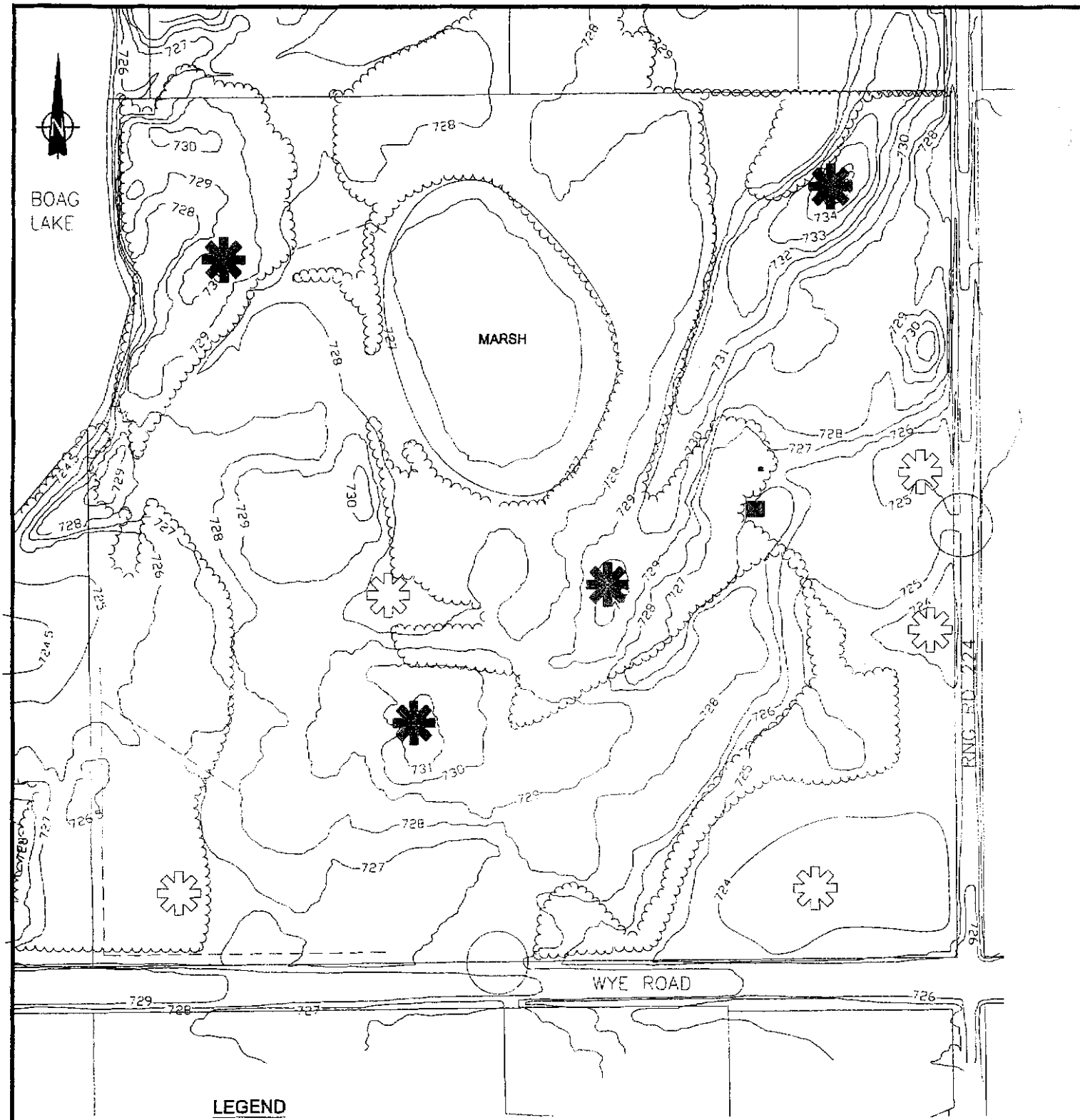
An abandoned farmstead is located in the east central portion of the plan area (see Figure 3). An approach to the farmstead exists off Range Road 224. All directional access to the plan area is also available off Secondary Highway 630 at a point midway along the south boundary of the area as shown on Figure 3. A field approach into the subject site is evident at this location. This all directional access, with a median break, is also being used by an acreage development located along the south side of Secondary Highway 630. Road and intersection widening requirements for Secondary Highway 630 have been provided through three separate road plans including:

- Road Plan 8622390
- Road Plan 8522464
- Road Plan 1210MC

Road widening of 5.18 metres will be required along Range Road 224 at the time of subdivision. Some additional widening may also be required along Secondary Highway 630.

A drainage right-of-way extends along the east side of Range Road 224. This right-of-way drains the south east corner of the plan area via a culvert located under the Range Road in the southeast corner of the plan area.

Two Atco utility rights-of-way are registered against the Certificate of Title for the subject site. One right-of-way extends along the east side of the plan area, and the second is a local service line to the abandoned farmstead.



LEGEND

ASP BOUNDARY

EXISTING CONTOURS 725

LOW AREAS

HIGH AREAS

VEGATATION

EXISTING BUILDINGS

EXISTING APPROACH

BOAG LAKE ESTATES AREA STRUCTURE PLAN

EXISTING CONDITIONS

FIG

Lovatt Planning Consultants Inc.

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AL-TERRA ENGINEERING

2.5 Development Implications

The following development implications result from the existing conditions:

1. The country residential land use proposed for the plan area is compatible with, and will maintain the environmental integrity of, Boag Lake. The proposed use is also compatible with the surrounding country residential and agricultural land use pattern.

2. The Area Structure Plan must identify provisions for implementing the tree retention recommendations proposed by Spencer Environmental Management Ltd. Such provisions will also assist in protecting wildlife habitats, and may include a combination of Environmental and Municipal Reserve dedications, Conservation Easements and sensitive subdivision design.

3. The integrity of the shoreline and the bank of Boag Lake, as well as the adjacent natural tree cover, should be protected by designating these lands as Environmental Reserve. The central marsh feature serves an important waterfowl staging and nesting area and, therefore, should also be designated Environmental Reserve. Finally, the size and function of the natural low area located in the southeast corner of the plan area suggests that it should be protected as Environmental Reserve.

4. Road widening for Range Road 224 is required at the time of subdivision. Some additional widening may also be required along Secondary Highway 630.

5. The existing approaches onto the Range Road and Secondary Highway 630 provide opportunities for future access into Boag Lake Estates.

6. The storm water management plan proposed for the subject site should respect the existing internal and external runoff patterns.

3 THE DEVELOPMENT CONCEPT

3.1 Development Objective

The primary objective of the Boag Lake Estates Area Structure Plan is to create a viable, attractive residential subdivision that both protects, and compliments, the significant natural environmental features of the plan area. The development concept shown on Figure 4 reflects this objective, and recognizes the development implications summarized in the preceding section, as well as the Municipal Development Plan policies listed in Section 1.4.

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

1. The design concept recognizes the natural topography of the plan area by aligning the internal roads such that the significant natural features, including the central marsh and Boag Lake, can remain undisturbed. Also, the high points, as shown on Figure 3, are retained as potential building sites, and the lower areas are either integrated into the backs of lots, or are proposed to be dedicated as Environmental Reserve.

2. The 8.09 hectare Crown owned parcel will be maintained in its natural state. This parcel encompasses the central marsh feature, the adjacent emergent vegetation zone as described by Spencer Environmental, and the peat land/Black Spruce forest area extending north of the marsh.

3. Two Environmental Reserve areas are proposed including:

   - The shoreline, slope and top-of-the-bank of Boag Lake, as well as the natural vegetation extending along the top-of-the-bank. This 1.03 hectare linear reserve parcel extends from the Environmental Reserve parcel located in the adjacent Hunter Heights subdivision.

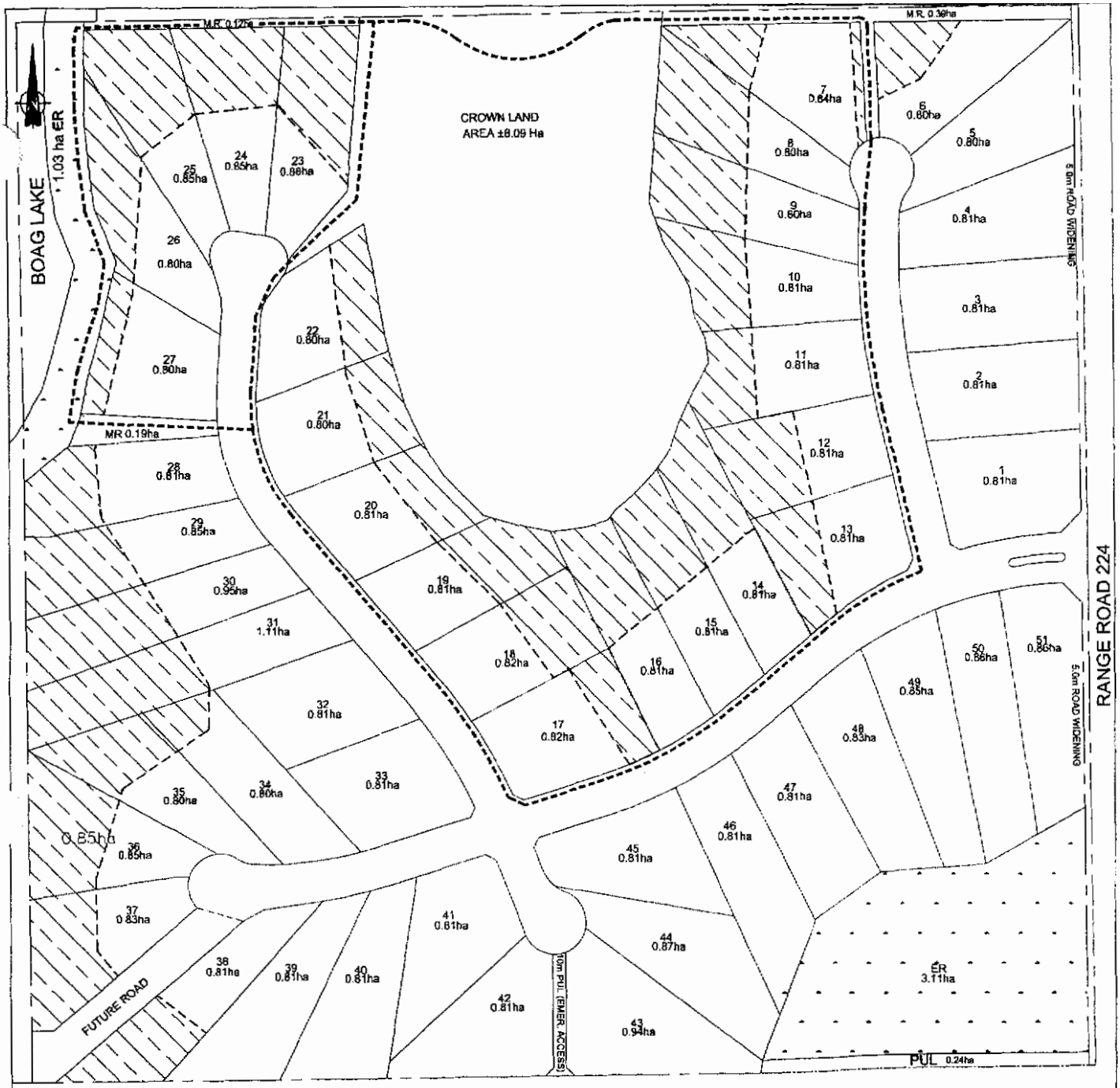
   - A 3.11 hectare low area located in the southeast corner of the subject ¼ section. This area will continue to be part of the natural drainage system, and will also act as a natural detention basin for any increased storm run-off.

   The total area of the two Environmental Reserve parcels is 4.14 hectares.

4. Municipal Reserve lands are proposed to be dedicated as linear features to allow for the development of an integrated circular type trail system throughout the plan area, as shown on Figure 4. This trail system will connect the Crown owned natural area with the Environmental Reserve strip proposed along Boag Lake, and may potentially be linked with a regional system extending further west that follows the north shoreline of Boag Lake, and on into Sherwood Park. Specific components of the linear Municipal Reserve trail system include:

   - A 10 metre wide strip extending along the northeast side of the plan area, linking the Boag Lake Environmental Reserve lands with the centrally located Crown parcel and Range Road 224. This Municipal Reserve strip comprises some 0.39 hectares, and links into the internal road system through the cul de sac located in the northeast corner of the plan area.

   - A *pie shaped* 0.19 hectare parcel linking the northwest cul-de-sac *head* with the Environmental Reserve lands along Boag Lake, so that the trail system is easily accessible to all future residents.



DEVELOPMENT STATISTICS

GROSS AREA	62.22 Ha
CROWN LAND	- 8.09 Ha
RANGE ROAD WIDENING	- 0.38 Ha
ENVIRONMENTAL RESERVE	- 4.14 Ha
NET DEVELOPABLE AREA	49.61 Ha
CONSERVATION EASEMENT	- 11.83 Ha
MUNICIPAL RESERVE AREA	- 0.70 Ha
ROADS & PUL	- 6.30 Ha

AREA CALCULATIONS BASED ON PRESENT LOTTING CONFIGURATION.

LOT YIELD 51 LOTS

CONSERVATION EASEMENT/ TREE RETENTION

MUNICIPAL RESERVE

ENVIRONMENTAL RESERVE

PEDESTRIAN LINKAGE

RAEKAY HOLDINGS
BOAG LAKE ESTATES

DEVELOPMENT CONCEPT

FIGURE 4

Lovatt Planning Consultants Inc.

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SCALE: NTS
0 10 25 50 100

ALTERRA ENGINEERING

- A 6.0 metre wide strip extending along the northwest side of the plan area, linking the Boag Lake Environmental Reserve lands with the centrally located Crown parcel. This strip comprises some 0.12 hectares.

The trail system will also be extended along the internal roads, and a linkage will be provided from the northwest cul de sac through the Crown lands, along the *backs* of lots, to link with the trail extending along the north side of the plan area. The total Municipal Reserve lands proposed to be dedicated is 0.7 hectares.

5. Conservation Easements are proposed along the backs of all the lots that are adjacent the west and northwest sides of the plan area, and that surround the centrally located natural marsh and peat land feature. As such, a continuous natural vegetation and wildlife corridor will be created. This corridor compliments the linear Environmental Reserve and Municipal Reserve strips being proposed by the design concept, and generally corresponds to the tree retention areas as defined by Spencer Environmental. Specifically, the corridor will:

   - Result in the protection of a minimum 50 metre wide Environmental Reserve/Conservation Easement strip along Boag Lake;
   - Protect the natural corridor connection between Units One and Two in the northwest potion of the plan area;
   - Preserve the wildlife corridor along the west side of the plan area, south to Secondary Highway 630; and
   - Protect most of the Retention Area identified on Figure 2, as well as the central marsh feature, while still allowing for the economic and efficient subdivision of the subject lands for country residential development purposes.

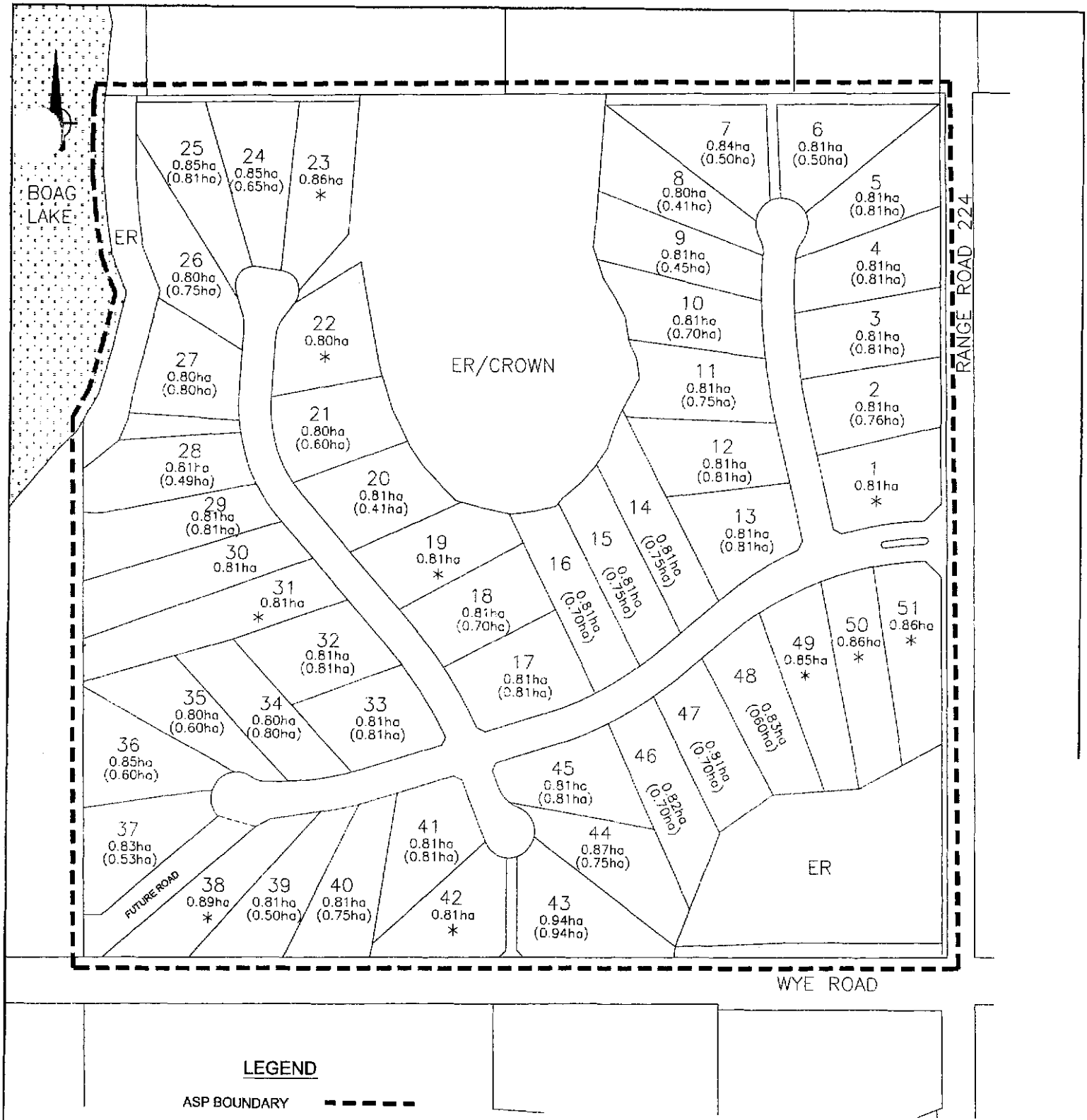
   The natural Balsam Poplar and Aspen wood lot located in the northeast corner of the plan area is also proposed to be protected by Conservation Easement, along with the existing Balsam Polar tree stand abutting the southeast Environmental Reserve lands.

   The total area proposed to be affected by Conservation Easement is 11.83 hectares.

6. The existing approach onto Range Road 224 is proposed as the major access into Boag Lake Estates. This approach will be flared to allow for *channelization* of traffic at the Range Road using a median feature, and to accommodate an entry feature.

7. Alberta Transportation has indicated that although the existing approach onto Secondary Highway 630 may be used for emergency access purposes, no direct access will be permitted. Instead, Alberta Transportation requires that a 30 metre wide service road right-of-way be provided from the internal road system to the southwest corner of the plan area. This service road will be developed, only if the lands to the west of the plan area boundary are further subdivided, to allow for future access from these lands, through Boag Lake Estates, to Secondary Highway 630. As such, the circulation system will remain internalized and no adjacent properties will be affected by Boag Lake Estates until future subdivision warrants construction of the service road.

8. The design concept allows for the creation of 51 country residential lots. Although this number exceeds the maximum base density as per Policy 10.30(c) of the Municipal Development Plan, it recognizes the density *bonusing* resulting from the considerable amount of land affected by Conservation Easements as per Policy 10.30(d) and the Worksheet contained in Appendix B.



LEGEND

ASP BOUNDARY

LOT NUMBER 10

TOTAL LOT AREA 0.81ha

DEVELOPABLE LOT AREA (0.70ha)

* LOTS REQUIRING SOME GRADING TO COMPLY WITH COUNTY M.D.P. GUIDELINES AND TO ENSURE PROTECTION FROM FLOODING. DETAILED DESIGN TO VERIFY AMOUNT AND EXTENT OF GRADING REQUIRED.

MINIMUM BUILDING ELEVATIONS TO BE STIPULATED ON FINAL DESIGN DRAWINGS.

BOAG LAKE ESTATES AREA STRUCTURE PLAN
DEVELOPABLE AREAS

FIG 5

Lovatt Planning Consultants Inc.

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SCALE 1:5000
0 10 25 50 100

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9. The concept generally complies with the maximum parcel width to length ratio of 1:4, as per Policy 16.7 of the Municipal Development Plan. However, this ratio is exceeded for the three parcels proposed at the end of the northwest cul de sac, and for the parcels located in the southwest corner of plan area.

   The parcels in the northwest corner are particularly long because the cul de sac head has been *pulled back* to protect the existing tree cover. In the southwest corner, the parcels are configured to accommodate the future service road right-of-way. Regardless, Policy 16.7 does allow a variance to the 1:4 ratio *if approved in an adopted Area Structure Plan.*

   The minimum lot widths as per the Land Use Bylaw also have been reduced for some of the lots, particularly those located in the cul de sacs *heads.* The reduced lot widths respond to the unique plan area physical features that limit design options. **Lot dimensions and configurations will be confirmed at the time of detailed subdivision design.**

10. The concept recognizes the minimum lot size of 0.80 hectares as per the Country Residential District of the County's Land Use Bylaw. A 0.4 hectare (1.0 acre) developable area is contained within each lot, as per Municipal Development Plan Policy 16.5. Developable areas are shown on Figure 5.

11. An attractive entrance feature may be provided off Range Road 224, thereby promoting its function as the principal entry into Boag Lake Estates. The exact location and road right-of-way requirements for this feature will be determined at the time of detailed subdivision design.

12. A high quality of residential development will be promoted through architectural and other controls, such as type and size of dwelling. These controls may be imposed by the developer through the use of restrictive covenants.

The concept results in the following land use distribution:

Table 1 - Land Use Statistics

Gross Area	**62.22 ha**
Public Lands	8.09 ha
Road Widening	0.38 ha
Environmental Reserve	4.14 ha
Gross Developable Area	**49.61 ha**
Conservation Easement (CE)	11.83 ha
Municipal Reserve	0.7 ha
Roads	6.30 ha
Residential (includes CE)	42.61 ha

The foregoing land distribution figures will be confirmed at the time of subdivision.

Municipal Reserve dedication will be reconciled as part of the development agreement at the time of rezoning, subdivision and survey.

3.2 Residential

The attractive location of the plan area in terms of proximity to Sherwood Park, quality of access to the regional road network, community amenity features such as Wye Community Hall and Wye School, natural features such as Boag Lake, and established country residential subdivisions, suggests an opportunity to promote a relatively high quality residential subdivision.

Although not part of this Area Structure Plan, architectural guidelines to ensure architectural control may be applied at the time of lot sales, marketing and housing construction. Examples of the types of guidelines to be applied include:

- roofing and siding material
- colour
- fencing
- minimum house and garage size
- landscaping

In applying guidelines through the use of restrictive covenants, compatibility within the larger residential community will be considered.

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 student generation factors:

Table 2 - School Generation Factors

Level	Public per unit	Separate per unit
Elementary	0.2640	0.0753
Junior High	0.1116	0.0400
Senior High	0.1298	0.0185

These factors have been updated by the Elk Island Public and Separate School Boards and are in effect for the year 2000. Assuming the 51 new lots proposed, the resultant population and students generated are shown on Table 3.

All figures are estimates only, and are subject to change at the time of subdivision. It is assumed that students will be absorbed into the surrounding school system. Discussions with representatives of Elk Island Public School Board determined that enrolment at Wye Elementary School has been declining, and that the school is operating at below capacity. The development of Boag Lake Estates for residential capacity will potentially result in increased in enrolment.

Table 3 - Population and School Generation

Population	**149 persons**	
School Generation	**Public**	**Separate**
Elementary	14	4
Junior High	6	2
Senior High	7	1
Projected Student Generation	**34**	

3.3 Parks and Open Space

As is noted in Section 3.1, the natural features of the Boag Lake Estates plan area are proposed to be protected by a combination of Environmental Reserve, Municipal Reserve and Conservation Easement. The publicly owned Environmental and Municipal Reserve areas protect the most significant of these features, including the shoreline and adjacent trees along Boag Lake, the central marsh feature, and the spruce/peat land concentration located north of the marsh, which extends into the adjoining ¼ section.

An integrated trail system (see Figure 4) is proposed to link these natural elements. However, because the central marsh feature provides an important staging and nesting function, it should remain relatively undisturbed. The trail, therefore, which may form part of a regional trail system, is proposed to be removed from the marsh.

The trail is also proposed to extend along Boag Lake, and will follow the internal road system. The resulting trail system, combined with the internal roads, allows for continuous, circular pedestrian flows throughout the plan area. This internal system may be linked with a regional system, thereby providing a significant recreational amenity within the larger community. The trail is proposed to enhance the natural environment and, therefore, will be constructed with minimal clearing and a gravelled surface.

Although the Environmental Reserve parcel proposed for the southeast corner of the plan area provides additional open space within Boag Lake Estates, it is prone to flooding and is of little value for passive recreational type activities. The proposed trail system, therefore, does not provide pedestrian access to this southeast parcel.

4 CIRCULATION AND MUNICIPAL SERVICES

4.1 Traffic Circulation

The main access to this development will be off Range Road 224, about 400 metres north of Secondary Highway 630 (Secondary Highway 630). A secondary access is proved to the west, as a service road paralleling Secondary Highway 630. However, the service road will be constructed only if the lands west of the plan area are further subdivided.

An emergency access will be constructed onto Secondary Highway 630 at the existing field approach. Noise attenuation will be provided along the Secondary Highway. Also, a 10 metre wide Public Utility Lot is provided in the southeast segment of the plan area, along Secondary Highway 630, to allow for future widening of that highway.

The internal road pattern is dictated by the location of the north central water body and adjoining peat land. It would not be desirable to do any road construction through the peat land, so two fairly long cul-de-sacs are proposed.

Emergency access to connect these cul-de-sacs is also not desirable, as it would destroy a significant swath of the heavily treed peat land, and be quite intrusive into an environmentally sensitive area that is owned by the Crown. With modern technology (air ambulance, police helicopter) and with a 30 meter wide right-of-way using fairly flat ditch slopes, it seems reasonable that necessary access could still be achieved in case of road blockage.

Roadways are proposed to be a rural cross section with 8.4 m wide top and ditches, per Strathcona County standards.

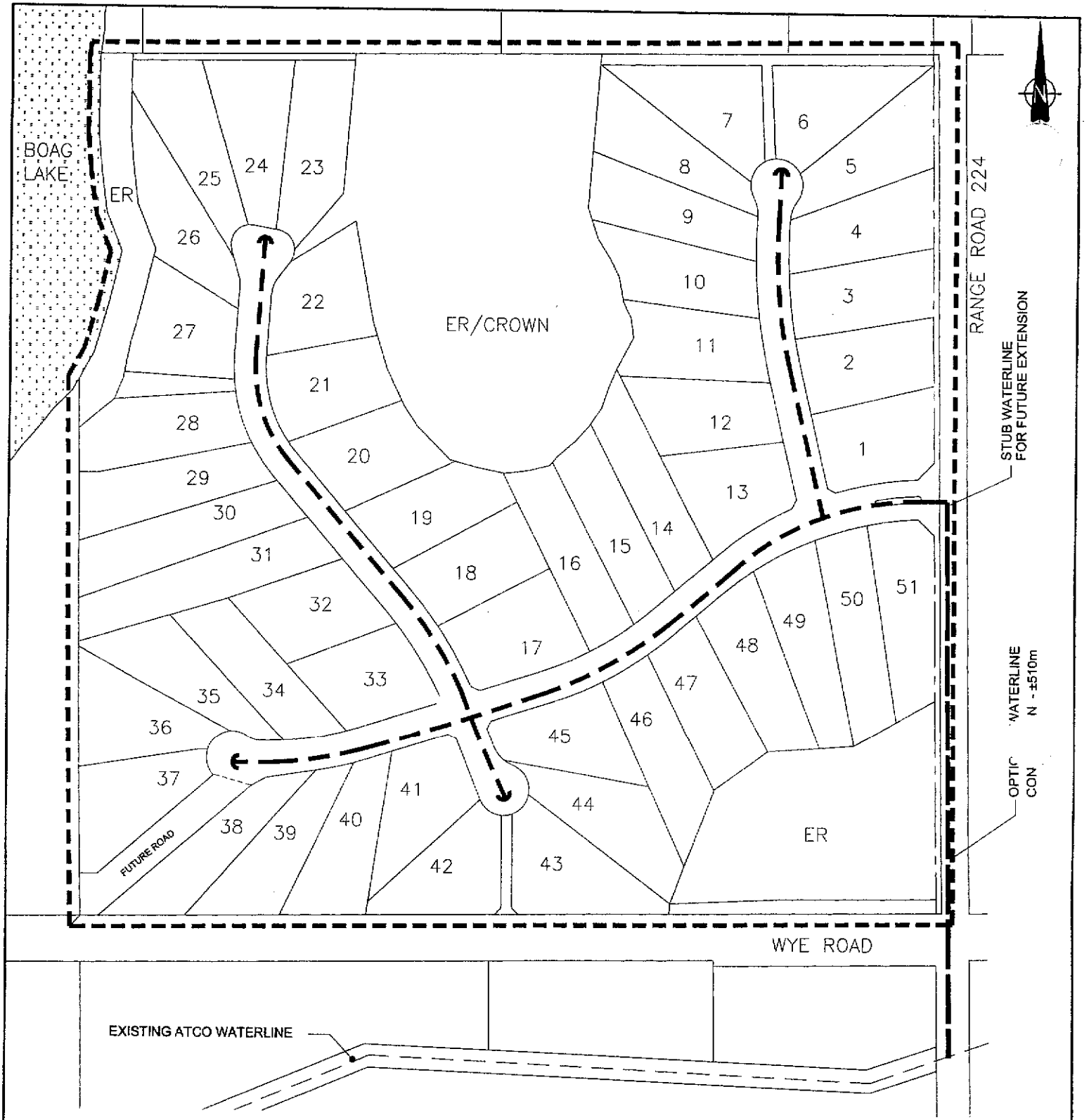
4.2 Water System

An existing water line along the south side of Secondary Highway 630 will be used to feed the subdivision. A network of small watermains will be capable of delivering 0.5 litres per second to each dwelling, in accordance with Strathcona County Rural Water Program. (see Figure 6).

4.3 Sanitary Sewage

No municipal sewage collection system is available to provide economic services to this development.

Private sewage systems, as required by the Alberta Private Sewage Standard of Practice (1999), must be used in this development. Groundwater levels are quite high in some areas and percolation rates are quite low through most of the area, so conventional sewage fields are not permissible. Alternative methods of sewage disposal must be used such as sewage mounds, or other on-site methods as acceptable to Alberta Labor and Strathcona County.



BOAG LAKE ESTATES
AREA STRUCTURE PLAN
WATER SERVICING CONCEPT

F

LEGEND

ASP BOUNDARY

EXISTING WATERLINE

PROPOSED WATERLINE

OFFSITE WATERLINE CONNECTION

Lovatt Planning Consultants Inc.

DWG: FIG 6.dwg
SCALE 1:5000
0 10 25 50 100

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4.4 Stormwater Management

Post development overground stormwater drainage for this property will be similar to existing drainage, which flows in three directions, as shown on Figure 7. The minor increase in runoff expected after development is discussed in the Technical Design Brief.

The area draining to Boag Lake is relatively small and will have minimal impact on the lake level in a major storm since the lake accommodates drainage from 43 hectares per Samide Engineering Report of 1993.

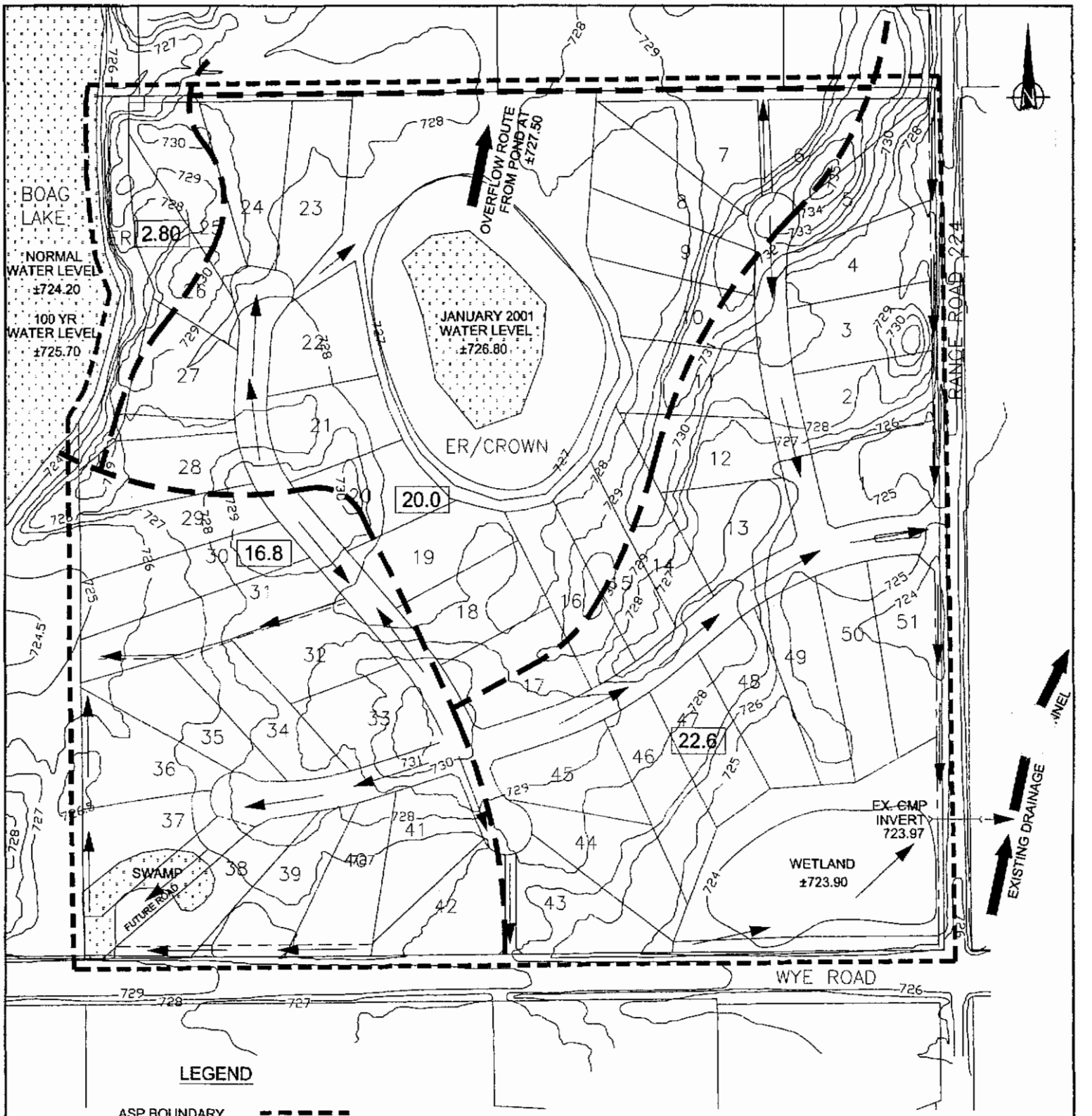
The landlocked water body in the north central area will accommodate drainage from about 20 ha. It could overflow along the route shown, but is not expected to do so in anything less than a 1:100 year storm event. All development elevations will be set well above the overflow route. This water body will function well as a natural detention pond. Drainage to the southeast low area will be detained naturally in the marshy grass land feature, which is about 70mm lower than the outflow culvert.

A Stormwater Management Plan will be provided to the satisfaction of Strathcona County and Alberta Environment.

4.5 Shallow Utilities

Power and communications will be installed underground by private contractor, to be monitored and taken over by Utilicorp, Telus and Shaw. Internal street lighting will not be provided.

ATCO Gas will install gas mains at the developer's expense.



BOAG LAKE ESTATES
AREA STRUCTURE PLAN
STORM DRAINAGE CONCEPT

FIG 7

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Planning Consultants Inc.

DWG: FIG 7.dwg
SCALE 1:5000
0 10 25 50 100

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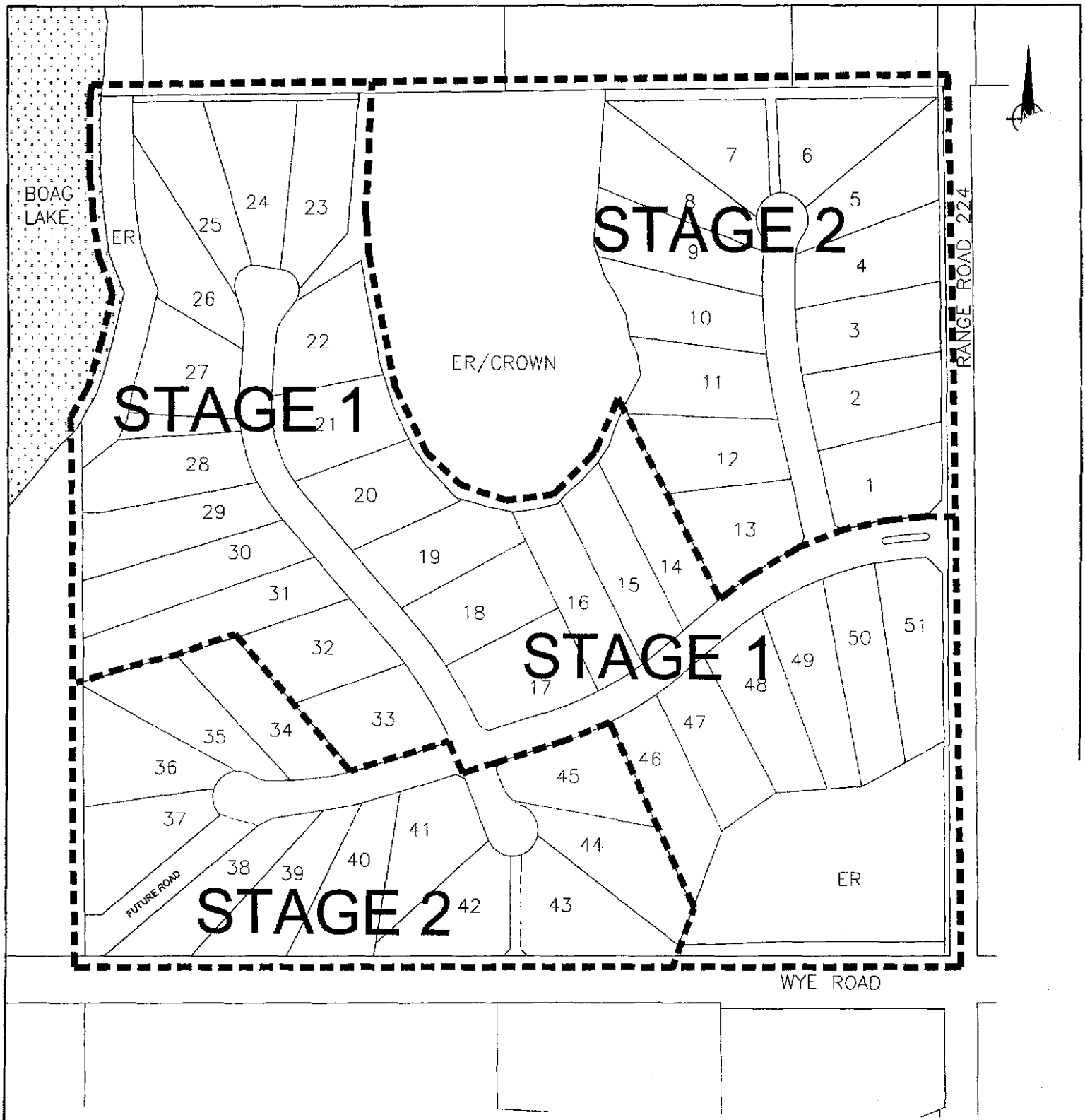
5 STAGING AND IMPLEMENTATION

A two phase staging plan is proposed (see Figure 8). The first stage assumes construction of the major access road off Range Road 224 and about one half of the proposed lots. The second stage involves constructing the approach off Secondary Highway 630 and the balance of the lots.

A redistricting application will be required to be approved prior to subdivision. Most of the Area Structure Plan lands are proposed to be redistricted from Rural District to Country Residential District.. It is important to note that, as is described in Section 3.1, 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.



LEGEND

STAGING BOUNDARY

LOT NUMBER 10

BOAG LAKE ESTATES
AREA STRUCTURE PLAN
PROPOSED STAGING

FIG 8

Lovatt
Planning Consultants Inc.

DWG: FIG 8.dwg
SCALE 1:5000
0 10 25 50 100

AL-TERRA ENGINEERING

APPENDIX A:
ENVIRONMENTAL INVESTIGATION OF BOAG LAKE ESTATES (SE ¼ 29-52-22-W4M)
SPENCER ENVIRONMENTAL MANAGEMENT SERVICES LTD.

SPENCER ENVIRONMENTAL
MANAGEMENT SERVICES LTD

Suite #801 Capital Place, 9707-110 Street, Edmonton, Alberta T5K 2L9
Phone (780) 429-2108 Fax (780) 429-2127
E-mail: spencer@planet.eon.net

21 November 2001
File EP-113

Olga Lovatt
Lovatt Planning Consultants Inc.
9711-141 Street
Edmonton, AB
T5N 2M5

Dear Ms. Lovatt,

Re: Environmental investigation of SE 1/4 of 29-52-22-W4, Boag Lake Estates
Final Report

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

- A site inspection on 19 December 2000, consisting of a meandering foot survey noting dominant vegetation, evidence of wildlife use, land use and landforms.
- Examination of a 1:20,000 aerial photograph dated May 1993 and a 1:10,000 aerial photograph dated June 1989.
- Examination of the County of Strathcona prioritized landscape ecology assessment habitat maps and accompanying report (Saxena *et al* 1997)[1].
- Brief discussion with Mr. Locke Girvan, of Planning and Engineering Services, County of Strathcona.
- Preparation of this letter report.

The timing of our inspection influenced the data collected. Under any conditions, undertaking a site inspection in central Alberta, in December, imposes certain data

[1] Saxena, Amit; Sherrington, Mark and Jerry Bentz. 1997. Prioritized Landscape Ecology Assessment of Strathcona County, Alberta. Unpublished report prepared for Strathcona County, Planing and Engineering Services. 131 pp. and maps

limitations. By December, most herbaceous plant species have senesced to the point where identification is not possible, leaf litter, ice or snow cover the ground layer of vegetation, all wetlands are frozen, 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. Our findings, therefore, must be considered in that context. In keeping with those limitations, Lovatt Planning requested that investigations be limited to an overview, ground-truthing nature. This was possible as natural features and certain types of potential wildlife habitat are, typically visible even in winter conditions. In some years, December can offer good conditions for observing use of winter habitat by ungulates. This year, however, conditions at the time of our inspection (i.e., minimal snow cover and extremely cold temperatures) were not conducive to such observations. The minimal snow cover present did not facilitate track counts. Moreover, unlike in other years, where deep snow forces animals to move along the least challenging routes and develop well-used trails, this year's minimal snow pack allows animals to move more freely over the landscape. Furthermore, the extremely cold temperatures experienced before and at the time of inspection may also have restricted animal movements, reducing the number of tracks visible.

GENERAL DESCRIPTION

The quarter section in question is bounded on the west by Boag Lake (a large wetland) and adjacent onshore woodlots; on the north by rural residential development and cultivated lands; on the east by Range Road 224; and on the south by Wye Road. Natural vegetation covers approximately one half of the quarter section, cultivated lands and pasture occupy the remainder of the area. There is one abandoned farmstead that can be accessed from Range Road 224. The natural vegetation can be characterised as a mosaic of wetlands and adjacent upland forest (or woodlots) consisting of two relatively large units (Boag Lake shoreline and adjacent natural vegetation; and a more central wetland/woodlot complex) that are connected, by way of a natural woodlot, immediately to the north of the property. The Wildlife Habitat Unit map appended to Saxena *et al* (1997), indicates that Boag Lake ultimately drains into the Oldman Creek, by way of natural or engineered drainage courses.

NATURAL VEGETATION

All natural vegetation on the parcel was classified as belonging to either Unit 1 or Unit 2 (described below); all other lands on the parcel are either cultivated or pasture.

Unit One- Boag Lake and Adjacent Natural Shoreline Vegetation (Figure 1 -attached))

The west property line cuts through the eastern extreme of Boag Lake. Where the property includes the east shore of the lake, the shoreline slopes fairly steeply to the water's edge. There is virtually no emergent vegetation zone. An open, mature Balsam Poplar (*Populus balsamifera*) stand occupies the slope and top-of-bank, and lands to the east for approximately 80 to 170 m (Figure 1). Near the shoreline, the trees grade into low shrubs and sapling poplar. Common Tansy (*Tanacetum vulgare*), a weedy species that indicates

previous disturbance, is abundant at the shore's edge. At the top-of-bank, there is no tall shrub layer and a variably-developed low shrub layer of snowberry, gooseberry and other species. Some open, grassy areas are present. Cattle have grazed this area.

In the southwest corner of the parcel, the western property line is east of the shoreline and cuts through a natural vegetation community that stretches south from the southeastern shore of Boag Lake down to Wye Road, and extends west of the property line. The vegetation comprises a mosaic of upland and wetland forest that covers approximately 6.0 ha of the property. Closest to the lakeshore and stretching along the eastern boundary of Unit One, mature Balsam Poplar dominate, however, the terrain is hummocky and small clusters of decadent Paper Birch (*Betula papyrifera*) are interspersed throughout (Figure 1). Further south and stretching to Wye Road, soils appear to turn peaty and, possibly, wetter. Ground cover is moss and lichen. Here, Black Spruce (*Picea mariana*) dominate. Birch are still a minor component. Labrador tea is a dominant understory shrub and, in some areas, sedges are common (Figure 1). This area appears to be a peatland community, although this can not be confirmed without measuring peat accumulation. Depending on the thickness of the peat, the area may, technically, be a bog or a swamp.

Unit Two - Central Wetland/Woodlot Complex

The second natural vegetation unit is a variously-shaped, wetland/woodlot complex (approximately 22 ha) that is situated in the central portion of the property and stretches, unbroken, from the south to the north boundary. Several wetland types are connected within this complex by upland woodlots. Central to the complex is an open-water, oval-shaped marsh (or slough) covering approximately 5.5 ha. The marsh appears to be isolated, having no obvious inlet or outlet. Marsh vegetation consists of the typical vegetation zones (working out from the centre) found in most open-water, aspen parkland marshes: a central open water area (covering approximately 3.0 ha) that likely supports dense submergent vegetation; an encompassing, emergent vegetation zone (of variable width, dominated by Common Cattail (*Typha latifolia*) but also comprising Common Great Bulrush (*Scirpus lacustris*) and some sedge; a sedge-dominated, tussocky, wet meadow (of variable width) ; and an outer willow-(*Salix sp.*) and birch- (*Betula sp.*) dominated shrub zone. To the west of the marsh a narrow (approximately 40 m wide) strip of willow, birch and young Balsam Poplar occupies the shallow slope and, some top-of-bank, between the marsh and the cultivated land to the west.

To the south and southeast of the marsh a stand of young aspen and Balsam Poplar occurs, with a variable canopy and generally poorly-developed shrub layers dominated by Saskatoon Berry (*Amelanchier alnifolia*), rose (*Rosa* sp.) and snowberry (*Symphoricarpus sp.*). Scattered throughout this area are several intermittent, shallow depressions occupied by sedge and willows. Deadfall is common.

At the southeast extreme of Unit Two, a roughly linear Balsam Poplar stand extends to the south and snakes through the otherwise open, grazed lands of the southeast quadrant of the property. While mature and decadent Balsam Poplar dominate, some Trembling Aspen (*Populus tremuloides*) and a few mature White Spruce are also present in this open stand.

There is no tall shrub layer; a poorly-developed low shrub layer of snowberry and gooseberry (*Ribes sp.*) is present. The stand appears to have been grazed by cattle, although perhaps not this year. Deadfall is abundant. The stand may occupy a shallow drainage course that connects to the core, above-described areas of the unit.

The flat lands north and east of the marsh appear to be peatlands. As in Unit 1, this cannot be said with certainty unless the peat accumulations are measured. These lands are occupied by small-diameter, very dense Black Spruce, which, in places, give way to small stands of small-diameter, dense Paper Birch, with a sedge understory. Certain areas, particularly along the edges are more open. The understory appears to be characterized by Labrador Tea (*Ledum groenlandicum*), ferns and moss (possibly *Polytrichum commune*). As with Unit 1, depending on the thickness of the peat, the area may technically be a bog or a swamp. The tree density and uniform size over much of the area, suggests regeneration following a fire. The eastern boundary of the complex comprises a thin strip of aspen, Balsam Poplar and Saskatoon Berry.

To the east of Unit Two, and connected by a field shelterbelt, lies a small woodlot (approximately 0.5 ha). The centre of the woodlot is wet and supports an isolated swamp of scattered willows with a sedge understory. The wetland is surrounded by a dense band of young aspen and young Balsam Poplar with a thick shrub layer of rose, Saskatoon Berry, Red-osier Dogwood (*Cornus stolonifera*) and willow.

WILDLIFE USE

As can be expected in cold December weather, we observed only scant wildlife evidence during our inspection. Following is a description of our observations and our qualitative assessment of the above vegetation units potential as wildlife habitat.

Unit One

Unit One comprises heterogeneous wildlife habitat that is suitable for numerous mammalian and avian species. We observed signs of use by deer, coyotes, snowshoe hair, Black-capped Chickadees and Pileated Woodpecker. A short-list of additional species likely to use the area year round includes red squirrels, weasels, mice and voles, perhaps moose, several species of woodpeckers and Ruffed Grouse. In spring and summer, numerous migratory, passerine species also likely use the area as staging habitat during migration and for nesting and the area could also support several nesting raptor pairs. The portion of Boag Lake on the property likely does not support many amphibians or breeding waterbirds, owing to the lack of emergent vegetation, but may be used as a waterfowl staging area.

In our opinion, the most significant attribute of the Boag Lake unit found on the property is its connection to the remainder of Boag Lake (which is likely a locally-important waterfowl staging area) and to the Oldman Creek. Saxena *et al* (1997) rank the Boag Lake unit as a priority habitat within the County and we concur with that ranking on the basis that: 1) the natural vegetation adjacent to Boag Lake buffers the lake, and 2) it provides good

connectivity between the unit and other natural habitat. The retention of the existing band of natural habitat around the lake increases the lake's potential as wildlife habitat, comprises important riparian habitat in its own right and provides a movement corridor around Boag Lake. The vegetation on the property in question would be one important link in that riparian corridor. Boag Lake's connection to the Oldman Creek creates potential for (or perhaps now constitutes) a continuous wildlife movement corridor east of Sherwood Park. To be fully functional, some restoration may be required further downstream, however, the potential is important and key to the County's landscape ecology approach to management of natural areas.

Unit One may also be used as a corridor for large- and medium-sized mammals and terrestrial birds moving between Boag Lake and wooded areas directly south of Wye Road. Our inspection did not provide any evidence of well-used mammalian trails, however, their absence could be explained by conditions at the time of inspection. The natural vegetation that exists directly southwest of Wye Road indicates that a corridor could exist, although, in our opinion, if a corridor is present, Wye Road likely compromises that function. In a fractured landscape, however, even compromised corridors are important. Anecdotal observations suggest that Unit One, including that portion that extends south to Wye Road, is a well-used ungulate corridor (Girvan *pers. comm.*).

Unit Two

Unit Two, the marsh/woodlot complex, is also heterogenous and likely productive wildlife habitat. In Unit 2, we observed evidence of deer, coyote, snowshoe hare, red squirrels, muskrat, mice, a raptor nest and Black-billed Magpie. With respect to waterfowl, the marsh is likely most used as a staging areas although it also comprises nesting habitat. One nesting platform was observed indicating attempts to enhance the nesting function. With some additional enhancement, nesting potential could be increased. The limited emergent cover limits the marsh's brood rearing potential.

Numerous songbirds would be attracted to the marsh and surrounding shrub habitats. The woodlots and small wetlands at the south of the marsh are excellent passerine nesting habitat. Elimination of cattle grazing would restore some of the vertical structural diversity of the area, increasing its potential for songbird nesting.

The peatland in Unit 2 increase the habitat diversity and the aesthetic appeal of the site, however, the uniformly-aged trees may have limited value as bird nesting habitat. The spruce trees may provide critical, local deer wintering habitat in extreme weather.

The above-described small woodlot/wetland to the east of Unit Two and the southern, linear extension of the woodlot are, by virtue of their small size, configuration and, in the case of the linear woodlot - disturbed nature, less valuable habitat. The linear woodlot, would, however, serve as a desirable residential amenity.

Saxena *et al* (1997) rank Unit Two as a priority habitat within the County and, again, we concur. We do so on the basis of the size of the unit, its connectivity to the Boag Lake unit,

and the presence of an open-water marsh and peatland complex with natural adjacent vegetation. Even as an isolated stand, this 22 ha area would provide significant local habitat and would merit conservation. In addition, removal of Alberta's wetlands is discouraged and regulated by the Water Act, the Public Lands Act and influenced by the provincial Wetland Policy. It is our experience that many of the similar marshes recently found worthy of retention in central Alberta have comprised less valuable wildlife habitat as they have lacked natural, adjacent, upland habitat and adjacent peatland.

The linkage and proximity of units One and Two increases the wildlife and public amenity value of the central wetland/woodlot unit. While Unit Two is separated from Unit One by cultivated lands, in the north of the property, they are separated only by an area of open grassland that is approximately 30 to 50 m wide (Figure 1). North of that, the two units are contiguous by virtue of lands that support a well-treed, rural residential development. For a semi-developed portion of the County, the two units are well-connected. This connection should be maintained to the extent possible. Some enhancement (even through natural successional processes alone), of the open area currently separating them on the property (G-Figure 1) would be desirable.

RECOMMENDATIONS

With respect to Unit 1, on the basis that it is rated as priority habitat and the fact that the mixture of poplar and birch, and the peatland are relatively uncommon habitats for the Sherwood Park area, we recommend retention of most of the natural vegetation that comprises that unit. Certainly, the vegetation directly east of the lake should be maintained in its current condition to provide a buffer for the wetland and to serve as a wildlife travel corridor around the lake. In addition, at least some of the existing natural vegetation that runs south connecting Boag Lake to Wye Road should also be retained to provide a continuous north-south band of vegetation. To retain some of the wildlife corridor function, the band should be a minimum width of 30 m. When determining what portion of the existing BP/Bi and B communities (Figure 1) to retain, one should consider that Alberta's Interim Provincial Wetland Policy may require compensation for removal of all or a portion of the peatland north of Wye Road.

With respect to Unit Two, we recommend that the entire unit be retained on the basis that the marsh is a permanent water body and a valuable resource, and the fact that the marsh and adjacent naturally-vegetated lands are recognized as priority wildlife habitat. Moreover, the marsh will likely be claimed by the crown. The County indicates that when a wetland is retained, an upland buffer must also be retained. From the perspective of wildlife habitat and surface water quality, the larger the buffer, the better. If the entire unit cannot be retained, we suggest retaining the area shown in Figure 1 as a good compromise. A further incentive to include all of the lands north of the marsh is the possible requirement by the province for the developer to compensate for removal of wetland habitat. The area shown in Figure 1 as a Retention Area includes the peatland to the north. Establishment of a conservation easement is an acceptable means of retaining wooded areas.

We also recommend that the area labeled G on Figure 1, or a portion of it along the north property boundary, be maintained in its current state or in a naturalized condition, to retain the potential for wildlife to move between units One and Two. The link could be maintained using some form of easement. Given that the two areas are already linked north of the property boundary, the easement width within Boag Lake Estates could be less than 30 m.

Finally, we recommend that the developer consult with Alberta Natural Resources regarding removal of the small, isolated wetlands that are interspersed throughout the upland habitat. While they may seem insignificant, they are, in fact, wetlands and, in this region, compensation has been requested of other developers for removal of similar, small wetlands.

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.

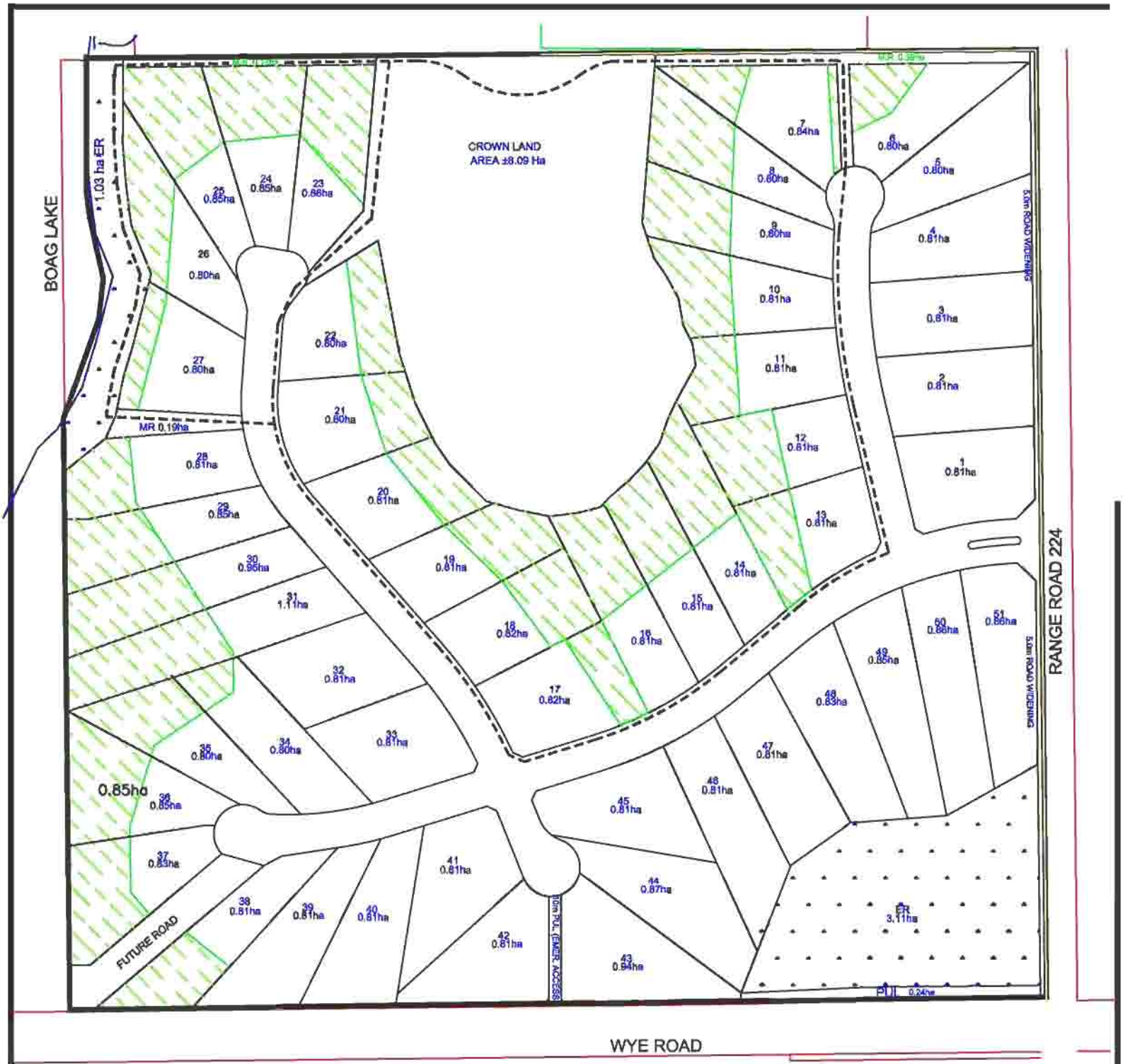
Lynn Maslen, M.Sc., P. Biol.
LM/lm

APPENDIX B: DRAFT WORKSHEET

BOAG LAKE AREA STRUCTURE PLAN
WORKSHEET - Rural Open Space Dedication

	Municipal Development Plan Policy Area			
	Number of Lots Proposed	51 Lots		
A	**Gross Developable Area**	153.7 ac		
	Deduct			
	Road Widening	0.9 ac		
	Crown Land (water body only)	12.2 ac		
	Environmental Reserve	10.2 ac		
	Storm water Management Facilities			
	Net Developable Land		**130 ac**	a
B	**# Lots Allowed**			
	Net Developable Land (a)	130		
	1 lot per 3.2 acres			
	Total Lots Allowed		**41 Lots**	b
C	**Lot Bonusing**			
	Number of Lots Proposed	51 Lots		
	Deduct			
	Total Lots Allowed (b)	41 Lots		
	# Bonus Lots		**10 Lots**	c
	# Bonus Lots			
	1 Bonus Lot per 3.0 acres dedicated for Conservation purpose	10 Lots		
	Acres Required for Conservation Purpose		**30 ac**	d
D	**MR Disposition**			
	Gross Developable Area	153.7 ac		
	Deduct			
	Road Widening	0.9 ac		
	Crown Land	20.0 ac		
	Environmental Reserve	10.2 ac		
	Balance of developable Area	122 ac		
	MR Owing = 10% of Balance		**12 ac**	e
	Area Proposed for Conservation Purpose	30 ac		
	Deduct			
	Acres required for Conservation Purpose (d)	30 ac		
	Net over or under deduction			
	MR waived at 1 acre per 3.0 acres Dedicated			f
	Net MR owing		**12 ac**	g
E	**Cash in lieu**			
	Net MR owing (g)	12.0 ac		
	MR Dedicated	1.7 ac		
	Outstanding MR	10.3 ac	9	h
	$ per acre			
	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



A.S.P. Area
62.22 ha (154 ac)

ASP DESIGNATION: **Boag Lake Estates ASP**
MDP DESIGNATION: **Country Residential Policy Area**

GROSS AREA	62.22 Ha
CROWN LAND	- 8.09 Ha
DEVELOPABLE AREA	54.13 Ha
RANGE ROAD WIDENING	- 0.38 Ha
ENVIRONMENTAL RESERVE	- 4.14 Ha
NET DEVELOPABLE AREA	49.61 Ha
CONSERVATION EASEMENT	- 11.83 Ha
MUNICIPAL RESERVE AREA	- 0.70 Ha
ROADS & PUL	- 6.30 Ha

AREA CALCULATIONS BASED ON PRESENT LOTTING CONFIGURATION.
LOT YIELD 51 LOTS

CONSERVATION EASEMENT/ TREE RETENTION
MUNICIPAL RESERVE 1.12 Ha
ENVIRONMENTAL RESERVE
PEDESTRIAN LINKAGE

All measurements and locations of natural features and land improvements are approximate and based on information supplied by applicant.

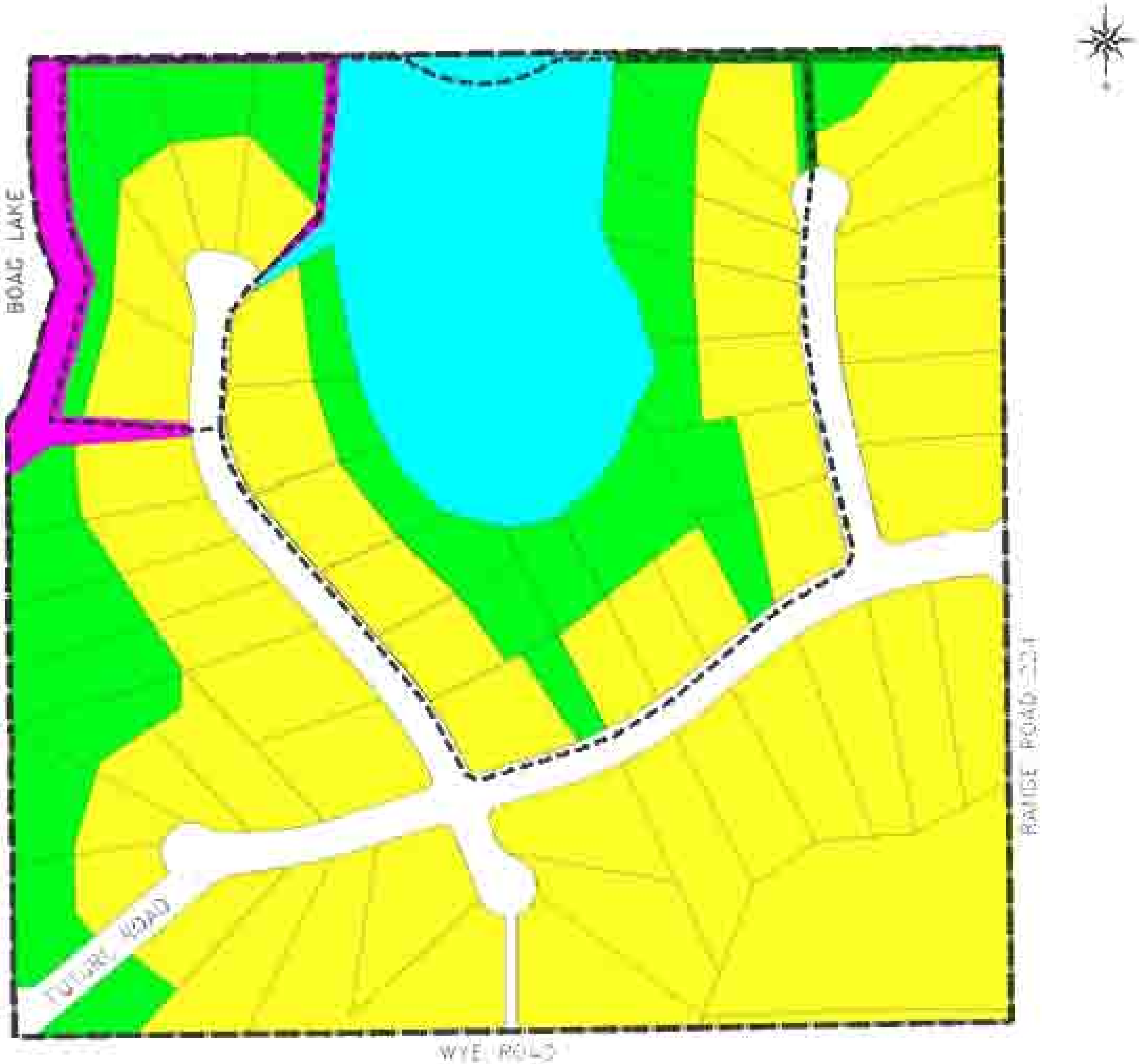
AREA STRUCTURE PLAN "BOAG LAKE ESTATES"

Legal: SE 29-52-22-W4

Drawn by: Peter Tsoukalas C.E.T.		File No.: **4410-2002P01**
Date Drawn: 08/05/02	Scale: not to scale	File No.: **X**
Revision Date: 20/08/02	Revision No. 2	Dwg No.: **P22F0005**

PLANNING & DEVELOPMENT SERVICES

Strathcona County



Boag Lake Estates Area Structure Plan Bylaw 72-2002

Date of Adoption 10 September 2002

- Residential
- Conservation Easement
- Crown Land
- Environmental Reserve
- Municipal Reserve
- Road Plan
- ASP Boundary
- Pedestrian Link

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Changes are periodically made to the ASP's/ARP's and may be made without notice. It is therefore recommended that you contact Planning & Development Services for original Plans.

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