

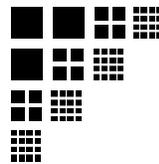
CYPRESS HILLS FRINGE AREA STRUCTURE PLAN



BY-LAW 2003/03 MAY 2003



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Acknowledgements

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CYPRESS HILLS FRINGE AREA STRUCTURE PLAN

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1. INTRODUCTION

The Cypress Hills is a special place. It stands as an oasis 300 metres above the surrounding grasslands. For thousands of years it has contained a rich history and shelter for humans and wildlife. The slopes and green coulees surrounding Cypress Hills Provincial Park have also been home to families, ranchers and farmers for generations. Impressive views of relatively undisturbed landscape spread from the highest points looking to the north. To the south, the gentle slopes give way to the Sweetgrass Hills in the distance.

Much has been written about the Cypress Hills from all aspects; Provincial policy, historical, geological, ecological, cultural and agricultural. This Plan is intended to clarify an appropriate vision of the future land uses in the Cypress Hills fringe area and guide how those uses will be approved by Cypress County.

1.1 HOW TO USE THIS DOCUMENT

This Area Structure Plan is divided into five sections:

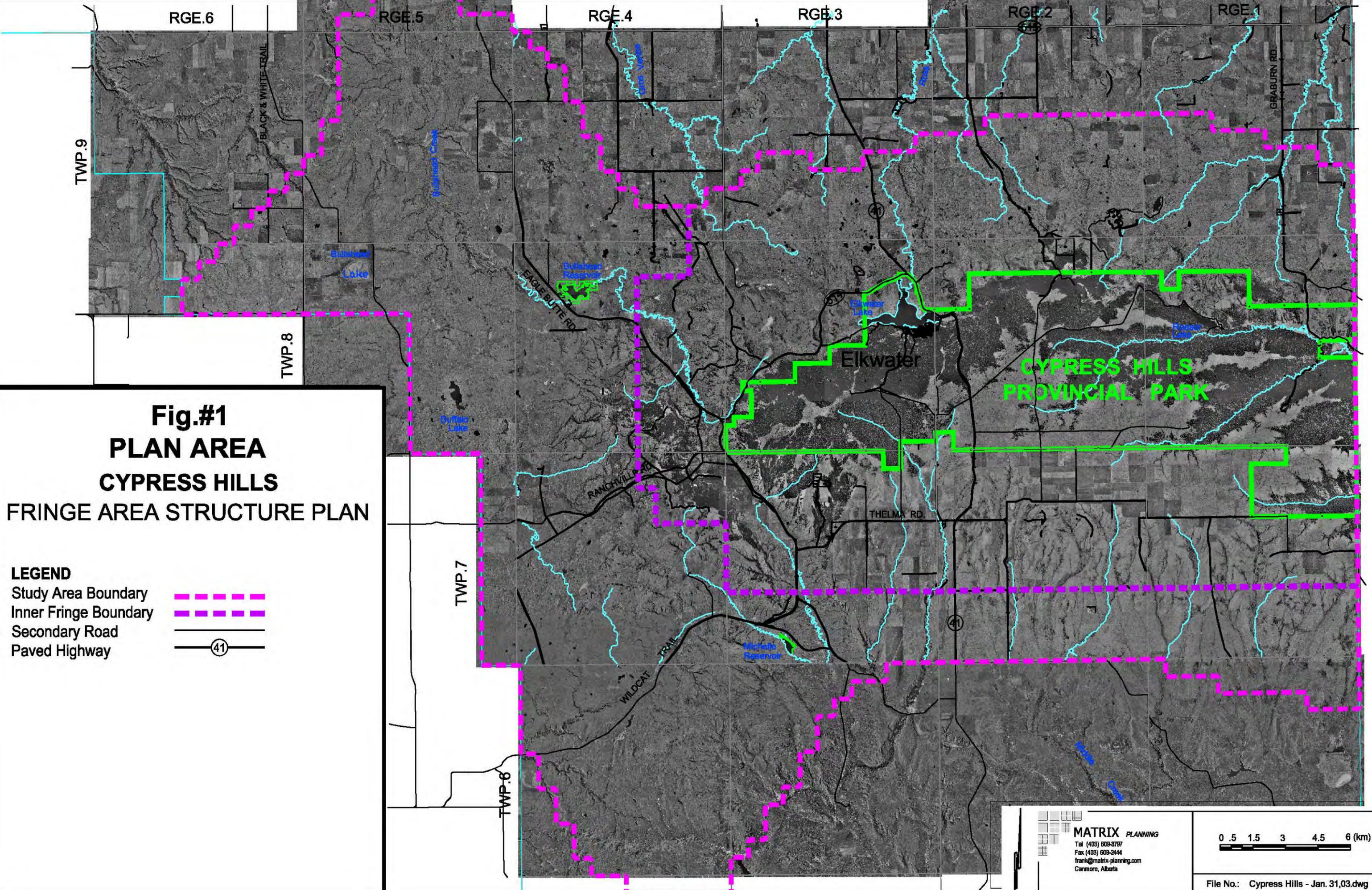
- background information;
- a detailed explanation of the intent of the Plan,
- a set of specific policies that will guide the Approving Authorities in their decisions and
- a set of Implementation guidelines that are more specific to ensure County staff and developers exercise due diligence in policy application
- Appendices that contain support information that should be referred to in order to clarify policy intent.

1.2 PURPOSE OF THE PLAN

The components of the Cypress Hills Fringe Area Structure Plan include a wildfire management component, an ecological overview and analysis as well as a planning report, each under separate covers. Together with the 2002 PFRA/Cypress County Groundwater Study, they provide background support for the future land use policy.

This Plan intends to;

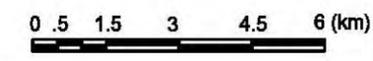
- help the reader better understand how the numerous natural and human landscape elements affect the Plan area,
- provide an overall philosophical framework for consistent future land use decisions and
- implement municipal land use and development strategies through a set of statutory policies.



**Fig.#1
PLAN AREA
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN**

- LEGEND**
- Study Area Boundary
 - Inner Fringe Boundary
 - Secondary Road
 - Paved Highway 41

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1.3 EXISTING POLICY FRAMEWORK

Municipal Development Plan, 1994 - A review of the Municipal Development Plan, 1994 and the land use bylaw indicates that a single parcel may be taken out of an un-subdivided quarter section if the application meets specific conditions of access and servicing and if a homestead has existed for the past 5 years. Additional subdivision applications would require re-classification to a Country Residential district. Further, the policies allow for a separation distance for proposed country residential districts from the boundaries of Cypress Hills Provincial Park to be imposed by Council. However, MDP is silent on the actual distance or how it is measured. Prior to the adoption of this Plan there is no geographical MDP policy designation to differentiate the rural area surrounding Cypress Hills Park from the other nearby County rural areas.

Land Use Bylaw #95/19 - The land use classification of the Study area prior to the adoption of this Plan is Agricultural District (A-2). Permitted uses include farming and dwellings. Discretionary uses include farm related uses, confined livestock feeding operations, surface mineral extraction and the like. Minimum lot areas require a quarter section or an existing parcel unless it is the first parcel out, which then allows for a smaller parcel to be subdivided where there is a homestead. No other statutory policy statements were identified that would otherwise guide land use, subdivision or development in the Study area.

Elkwater Townsite Development Plan, 1988 - The stated intent of the Plan is to *“outline the future role of the townsite as a regional tourism destination centre”*. Therefore, recreational pursuits are primary and few year-round residential uses are permitted. While the Park has added 15 cottage lots to their inventory in the past few years, current policy is to allow no more cottages or expand visitor services to any substantive degree.

2. EXISTING PHYSICAL CHARACTERISTICS

2.1 TOPOGRAPHY AND DRAINAGE (Fig.1,2)

The Study area comprises approximately 1057 km² and does not include the Park itself which is another 203km². However, the actual Plan Policy area comprises a much smaller Cypress Fringe Plan Area of 278 km² (107mi.²). Topography of the Park is characterized by a plateau, the upper portion of which has been left unglaciated. The maximum relief averages 300 metres from high point to the edge of the Study area. Three major watersheds all have their headwaters in the Cypress Hills. The area is a major groundwater recharge area for the region. The Study area is largely composed of rolling, hummocky terrain with significant hills rising west and north of the Park 150-175 metres above the plains.

2.2 ECOLOGICAL SETTING (Fig. 3)

Three distinct biotas (a community of living things) are represented in the Study area: the montane, the grasslands, and the northern-most extension of the American semi-arid central desert (Bird and Halladay 1967). This results in dry-land species such as the horned lizard and sage grouse, occurring in close spatial proximity to montane species such as elk and aspen, and grassland species such as pronghorn and northern wheat grass. The meeting of these diverse biotas within the Study area creates a unique and valuable ecological resource. The uniqueness of lands contained within the Study area has been recognized in numerous documents, some dating back over a hundred years. Viewed as a composite, the Study area is remarkable for its biodiversity.

Hosting the highest point of land (elev. 1466 m) between the Rocky Mountains and Labrador, the Study area is cooler, and receives more precipitation than the lower elevation prairies which surround it. This higher elevation, moister, cooler oasis occurs within an area of very low-precipitation known as the "Palliser's Triangle", a region subject to cycles of severe drought. Many of the unique and unusual biological elements of the Cypress Hills are due to the moister, cooler climate of the Cypress Hills uplands (Baresco et al. 2000).

Most of the forested land within the Study area is home to species associated with the montane ecoregion, an ecological region found in the mountains and foothills farther to the west. (eg. Banff townsite is situated in a montane region.) The montane element comprises about half the biota of the Cypress Hills, and its presence suggests that the area once was connected to the Rocky Mountains by forest (Bird and Halladay 1967). The montane portion of the Cypress Hills hosts the only

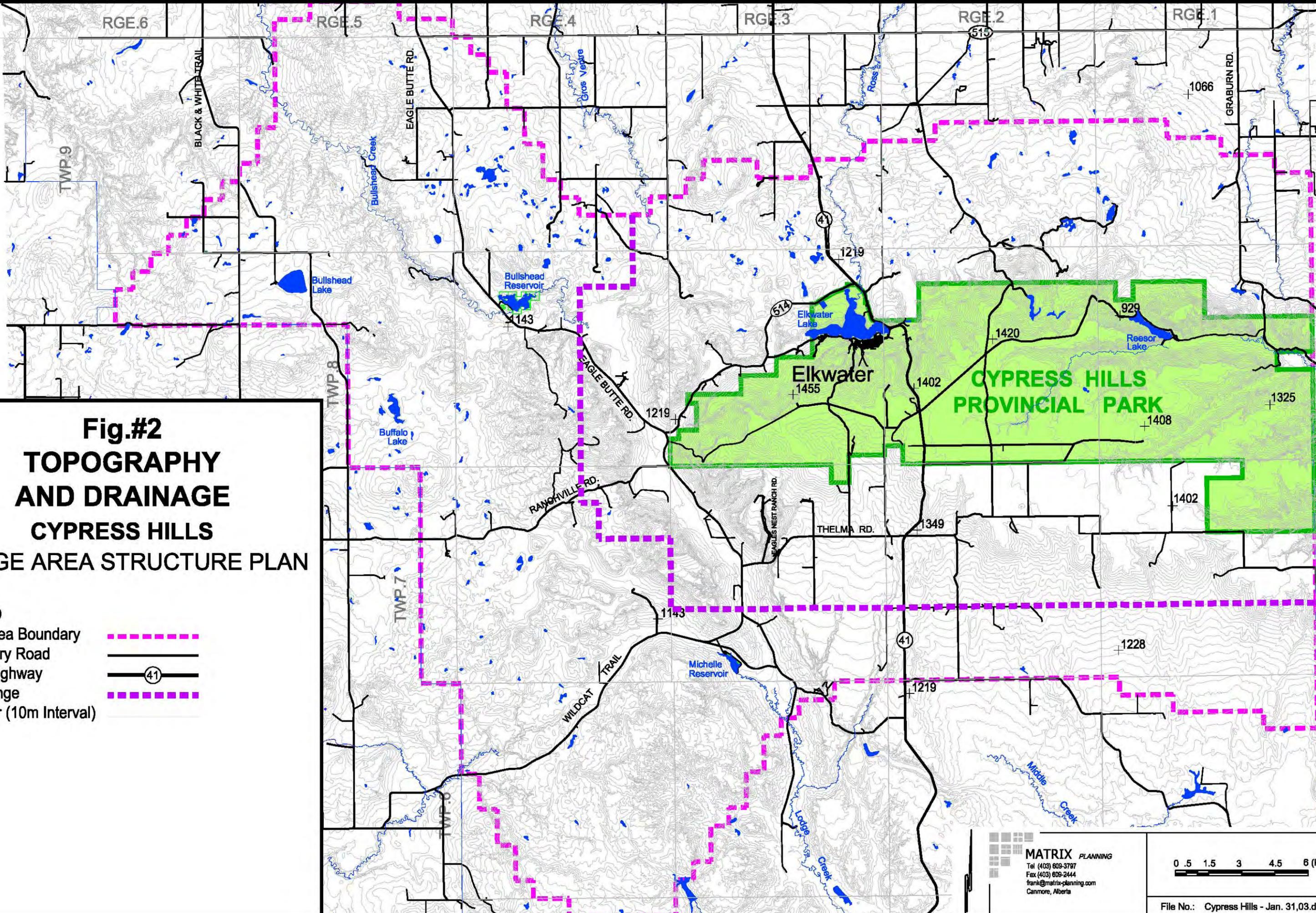
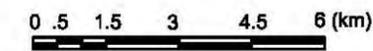


Fig.#2
TOPOGRAPHY
AND DRAINAGE
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN

- LEGEND**
- Study Area Boundary
 - Secondary Road
 - Paved Highway 41
 - Inner Fringe
 - Countour (10m Interval)

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substantial coniferous woodland habitats between the Rocky Mountains and south-central Manitoba (Wallis 1992).

The majority of the Study area consists of native fescue and mixedgrass prairie, a scarce ecological resource. Less than 5% of the original fescue prairie remains in Canada (Trottier 1992). The native tall fescue grassland above 1100 metres in the Study area is possibly the largest such occurrence in Alberta (Lombard North 1973). Regarding mixedgrass prairie, 24% remains in Canada, approximately half of which is overgrazed (Trottier 1992).

The Study area historically supported bison, wolf, lynx and grizzly bear. Whereas these species have been extirpated (locally extinct) from the area for about 100 years, most other species with a historical presence in the area still persist, although some tenuously. Analysis showed that a high percentage of endangered and threatened species are found in the Study area. Most are associated with the native grasslands. Such a concentration of sensitive ecological resources in a relatively small geographical area is probably unique in Alberta. The number and range of listed species may exceed any other area of comparable size in Alberta. For example, of the ten species with ranges in Alberta that are nationally listed as "endangered", 60% occur within the Study area (Environment Canada 2001). Over half of the Study area has been classified as nationally significant site, based largely upon its unique and scarce ecological attributes (Wallis 1991).

2.3 ECOLOGICALLY SENSITIVE LANDS (Fig. 4,5)

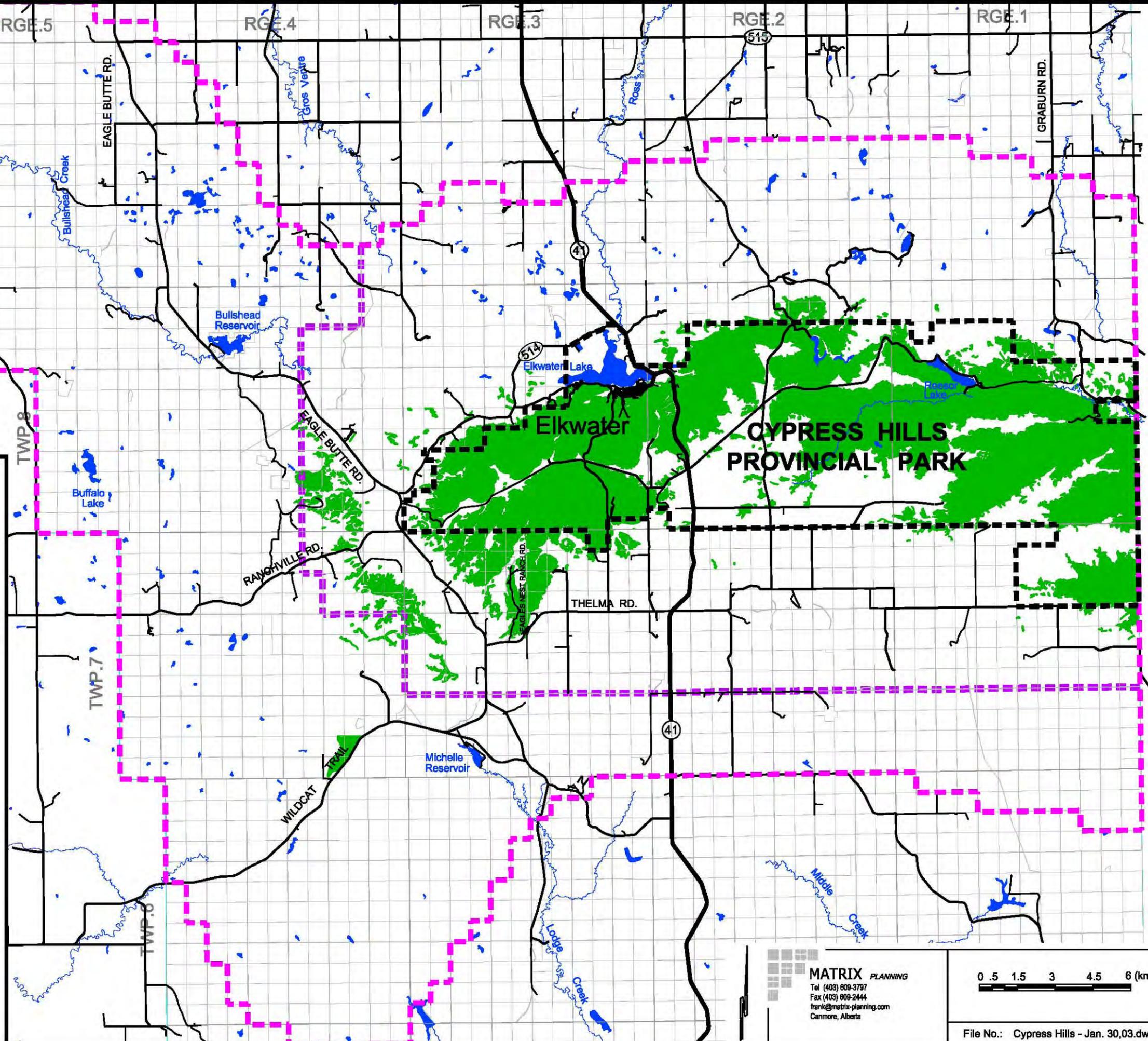
Ecologically sensitive lands are lands that host sensitive natural resources. Ecologically sensitive lands found in the Study area were identified through two levels of analysis: regional and local. At the regional level, large, general areas that qualified as ecologically sensitive lands under set federal criteria were identified. For example, the Cypress Hills Nationally Significant Site, with its disjunct montane flora and fauna, extensive native fescue grasslands and high number of listed species was identified at the regional level. General areas that met the set criteria for ecologically sensitive lands at the regional level included

- (1) Cypress Hills Nationally Significant Site;
- (2) Eagle Butte Provincially Significant Site;
- (3) Manyberries Creek Badlands Provincially Significant Site; and
- (4) Middle Creek Regionally Significant Site.

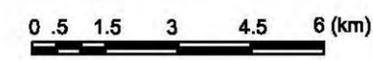
Because the regional level analysis lacked sufficient detail to adequately address the full range of land planning requirements, analysis at the local level was also

Fig.#3
AREAS OF TREE
VEGETATION
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN

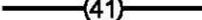
- LEGEND**
- Study Area Boundary 
 - Secondary Road 
 - Paved Highway 
 - Inner Fringe 
 - Provincial Park 
 - Areas Of Tree Vegetation 

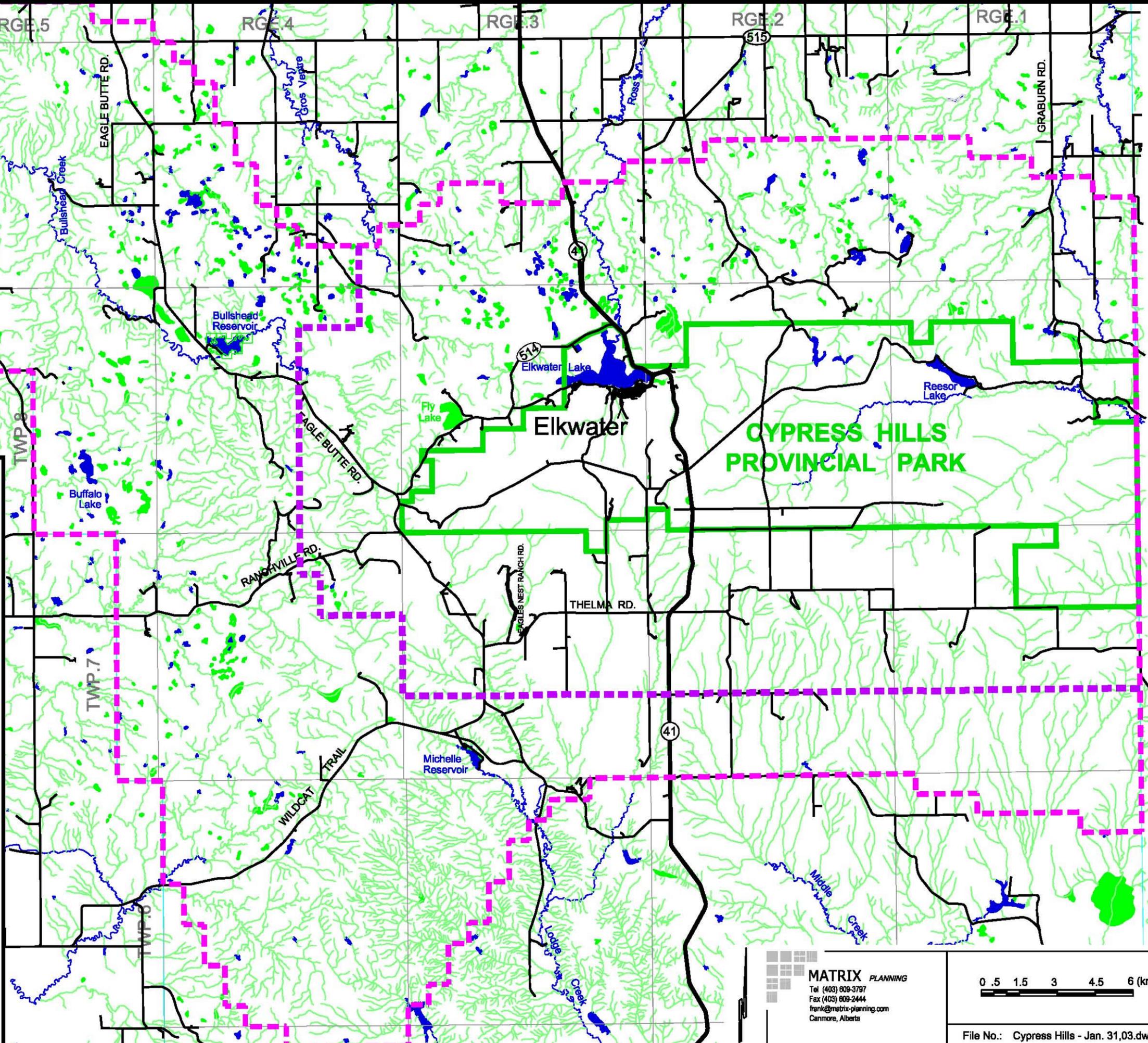


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**Fig.#4
WETLANDS AND RIPARIAN
AREAS
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN**

- LEGEND**
- Study Area Boundary 
 - Secondary Road 
 - Paved Highway 
 - Hydrography
 - Perennial Lakes / Wetlands 
 - Perennial Streams 
 - Periodic Lakes / Wetlands 
 - Periodic Drainage Features 

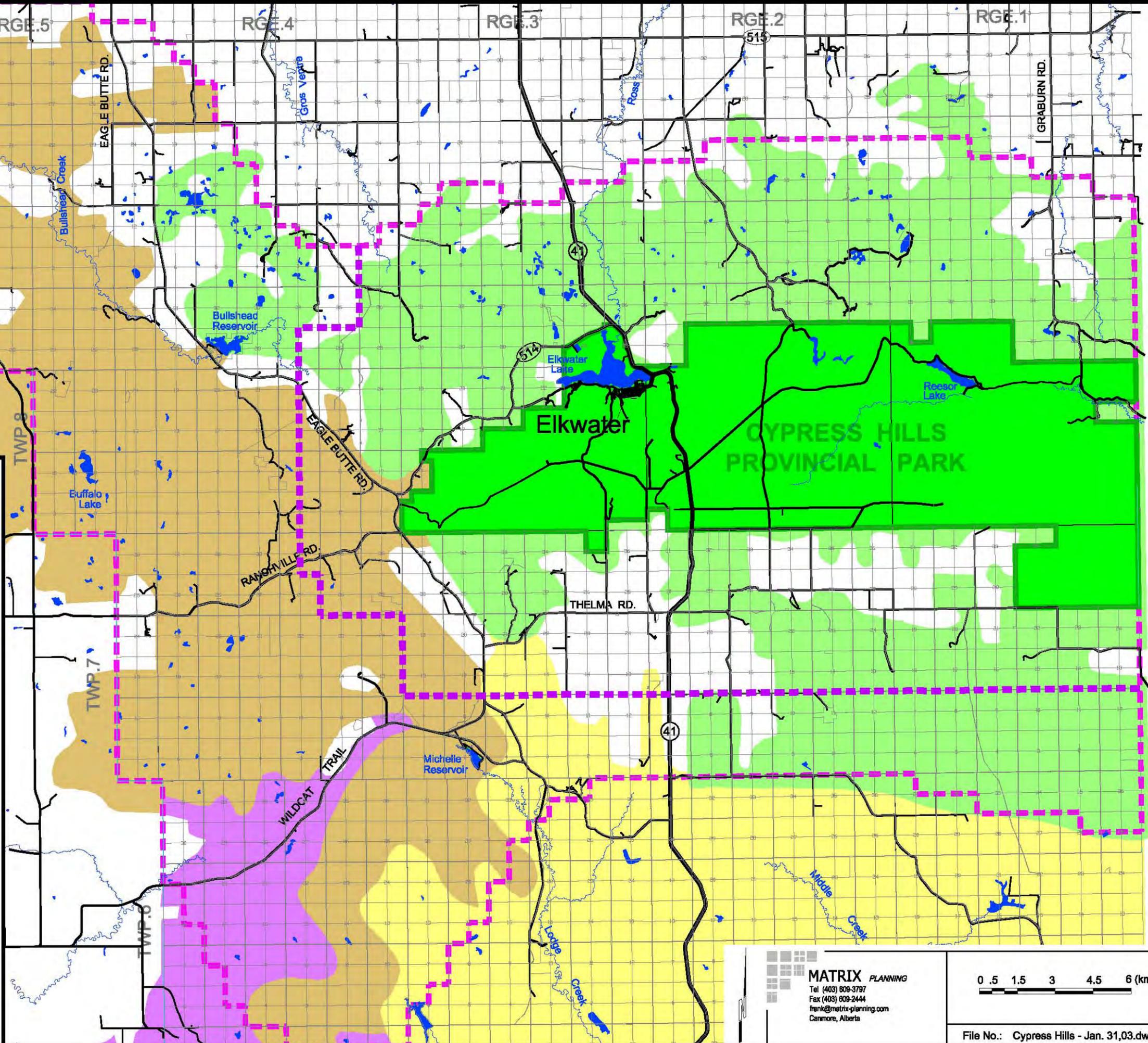


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Fig.#5
ENVIRONMENTALLY
SIGNIFICANT AREAS
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN

- LEGEND**
- Study Area Boundary 
 - Secondary Road 
 - Paved Highway 
 - Inner Fringe 
 - Cypress Hills (Nationally Significant) 
 - Eagle Butte (Provincially Significant) 
 - Manyberries Creek Badlands (Provincially Significant) 
 - Middle Creek (Regionally Significant) 



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0 0.5 1.5 3 4.5 6 (km)

conducted. The intent of the local level analysis was to identify sensitive ecological resources (e.g., wetlands and wildlife movement corridors) and their associated lands. Sensitive ecological resources included;

- (1) Listed species;
- (2) Ungulate winter range;
- (3) Wildlife movement corridors;
- (4) Wetlands, Water bodies and Springs;
- (5) Native Grasslands; and
- (6) Montane forest elements.

Lands hosting these ecological resources also met the set criteria and qualified as ecologically sensitive lands. At the local level, precision was limited by the resolution of the data sets that existed. Quarter section by quarter section analysis was generally not possible due to data limitations. However, it was possible to identify some important general areas at the local level and these are shown on the maps in the supporting document.

2.4 SURFACE WATER LICENSING

The Study area is a dry environment with ephemeral streams and water bodies dependent upon the headlands of the Cypress Hills for surface water recharge. In discussions with Provincial officials, it became apparent that most surface water licences have been allocated and no new licences will be considered in the Ross Creek basin including Elkwater Lake. Farm and ranching related uses are the dominant use in the area. A number of water co-ops operate for agricultural purposes with water pipelines serving their members.

The surface water resource is complemented by a system of springs. Together, the springs and headwaters reflect the fact that the Cypress Hills is an important recharge area for this part of Alberta and Saskatchewan.

2.5 PFRA GROUNDWATER STUDY (Fig. 6,7)

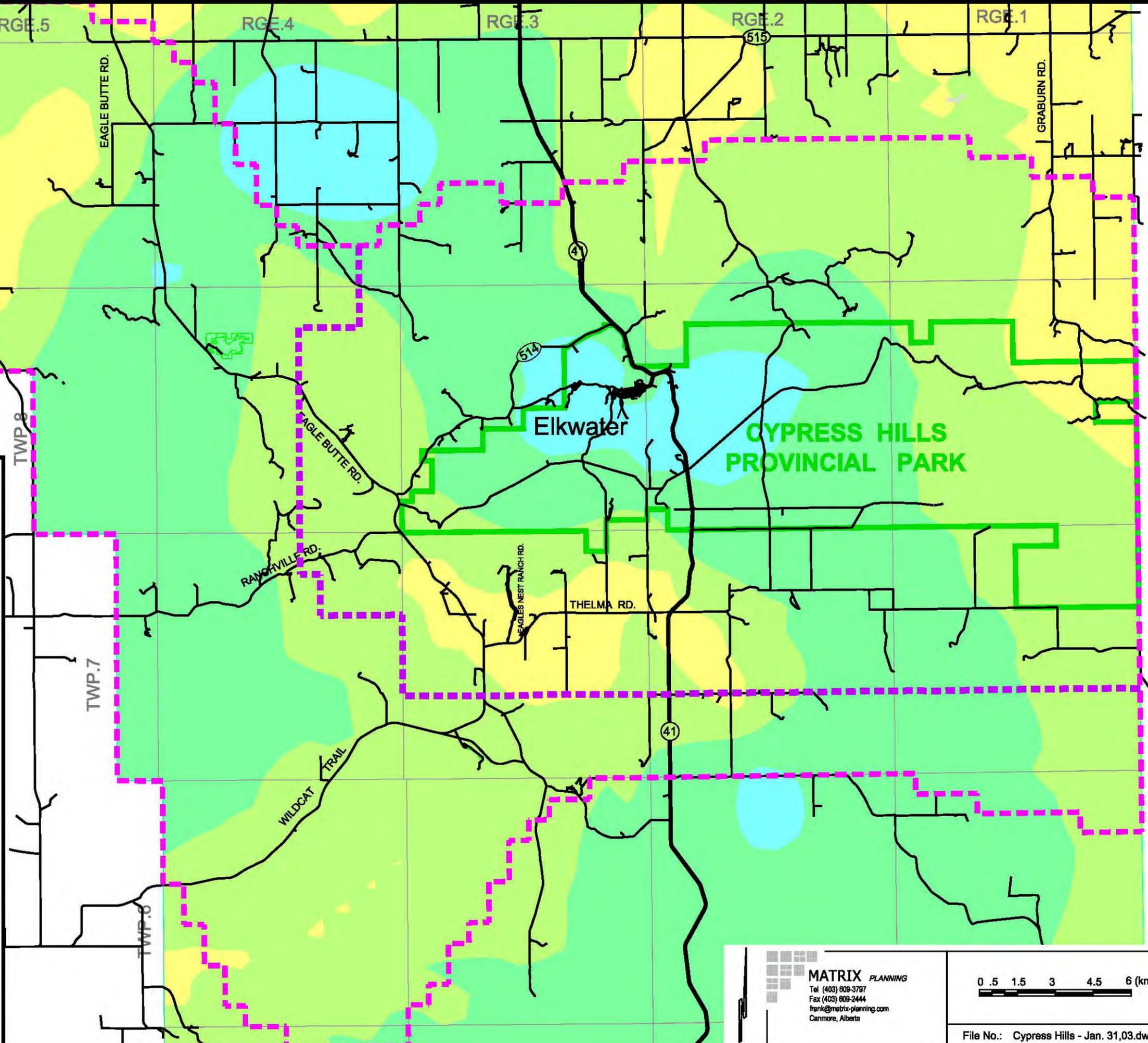
A groundwater study prepared by HCL Consulting and funded by Prairie Farm Rehabilitation Administration (PFRA). The study has suggested that the most appropriate indicator of potable water for future development potential would be maps that identified;

- Total dissolved solids (TDS) in groundwater from upper bedrock aquifers and
- Apparent Yield for water wells completed in upper bedrock aquifers.

Fig.#6
APPARENT YIELD FOR WATER
WELLS COMPLETED IN UPPER
BEDROCK AQUIFER(S)
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN

LEGEND

- Study Area Boundary
- Secondary Road
- Paved Highway
- Inner Fringe
- Apparent Water Yield
- 0 - 10 m³/day
- 10 - 100 m³/day
- 100 - 300 m³/day
- > 300 m³/day



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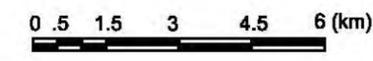
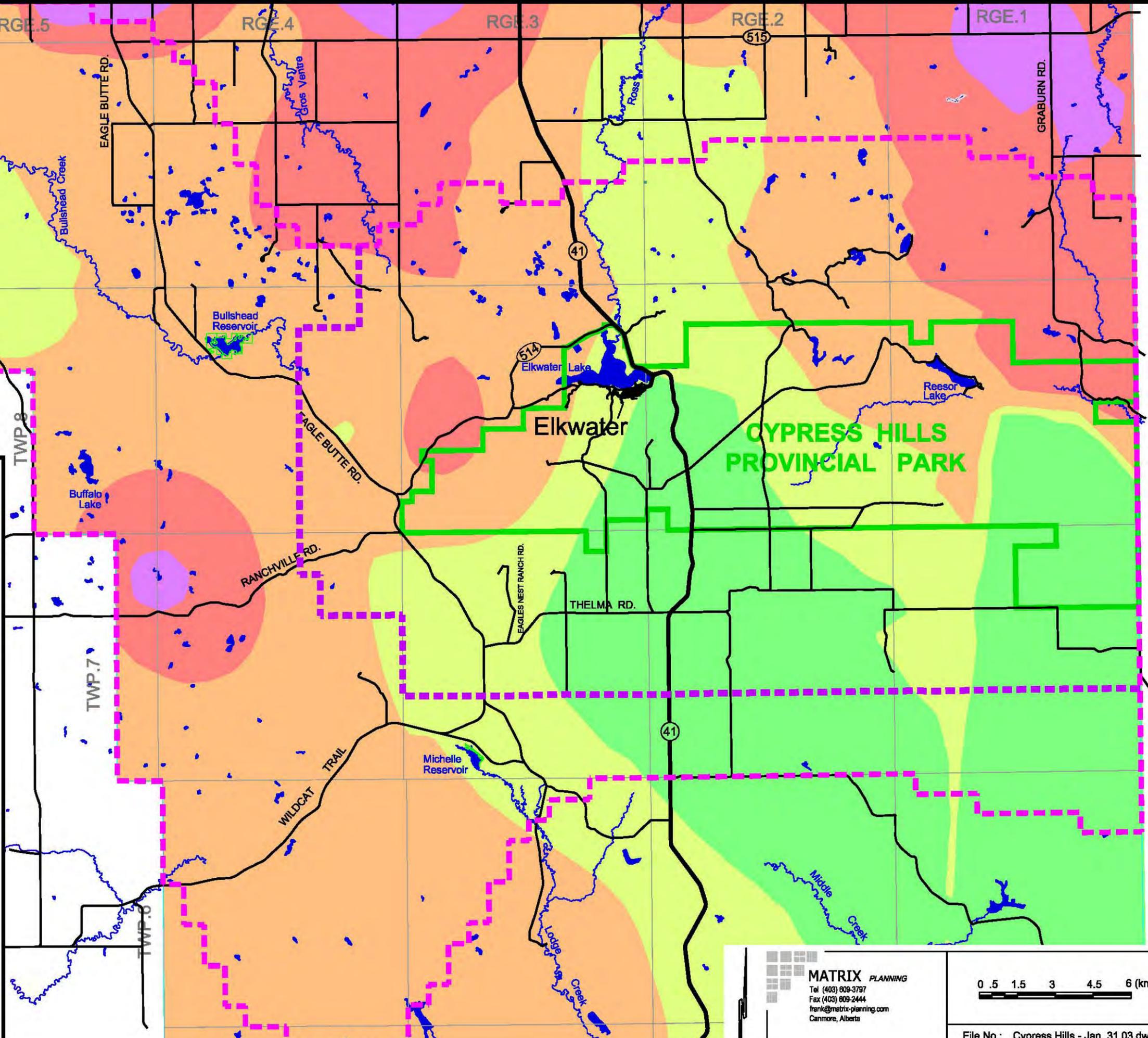


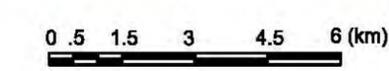
Fig.#7
TOTAL DISSOLVED SOLIDS IN
GROUNDWATER FROM UPPER
BEDROCK AQUIFER(S)
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN

LEGEND

- Study Area Boundary
- Secondary Road
- Paved Highway
- Inner Fringe
- Total Dissolved Solids In Groundwater From Upper Bedrock Aquifer(s)
 - <500 mg/l
 - 500 - 1000 mg/l
 - 1000 - 2000 mg/l
 - 2000 - 3000 mg/l
 - >3000 mg/l



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TDS is most indicative of related factors of potability such as presence of fluoride, SO₄ and chloride. A TDS of less than 1,000 mg/litre is acceptable by Provincial standards. Within the planning area, the predominant location of lower values is in the south slope of the Hills along Highway 41. A band of acceptable TDS values is located on the north slope east of Highway 41.

Upper Bedrock water yield was recommended as the best indicator of sustained productivity. Much of the Study area shows yields of between 10-300 m³ per day. According to Provincial standards, a 3 bedroom household typically uses 1.1 to 1.7 m³ per day.

The south slope along Thelma Road and Eagle Butte Roads shows the lowest yield and with a second low yield area in the northwest of the Plan are near Bullshead creek. However, even with these maps, caution has been advised that the geographical distribution and quantity of the groundwater resource is dependent upon the quality and density of data. The Study area has a comparatively small sample and as such, the data may not be as reliable as would be desired. Therefore, site-testing would be required for each water-intensive land use application.

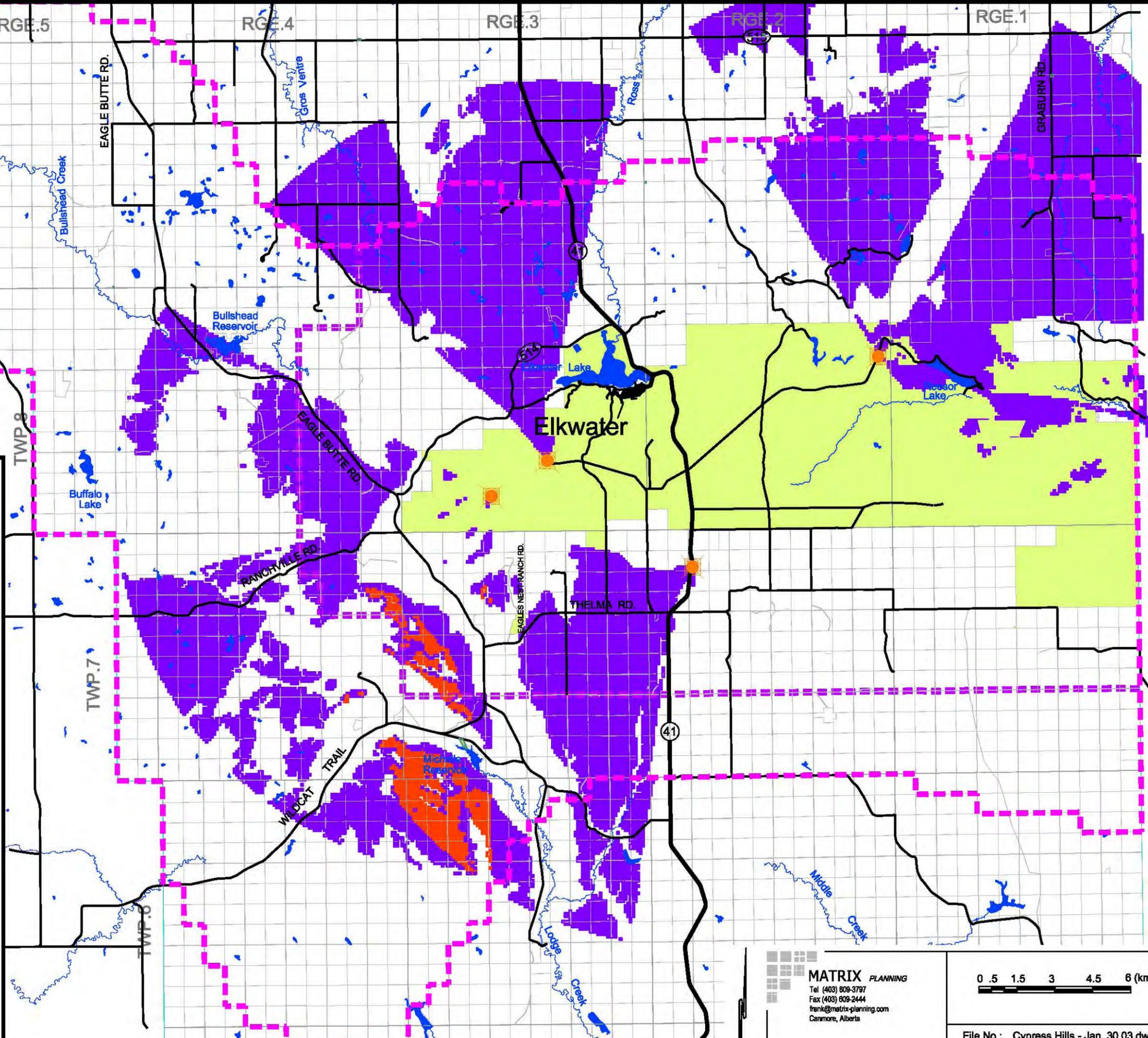
2.6 VIEWSCAPE ANALYSIS (Fig. 8,9)

The expansive and relatively undeveloped views afforded by the Cypress Hills over the rolling prairie hinterland is a fundamental asset of Cypress Park. “*Viewsheds or viewscapes*” are the extent to which people can see to the horizon in any direction standing in a specific location. A preliminary viewscape map was produced based on the assumptions that the key views most visitors would be concerned about protecting include popular viewpoints accessible by easy means such as by car or a short walk from a central area. Moreover, it is assumed that most visitor traffic arrives by Highway 41 from the north and (less so) from the south. Views seen from vehicles traveling along Secondary 514 and other roads, although scenic in some cases were discounted in relation to high viewpoints in the Park and along Highway 41 at the edge of the Park boundary.

Viewshed mapping was produced from a digital elevation model, several previous studies (Lombard North 1974, Bradley 1980), original photographs taken by the planning consultants and personal communications with Parks staff, 2001. The results indicate that the key views are along a north/south axis on Highway 41, views from the Elkwater subdivision and from view points on the east and west high points of the Park. Due to the value to the visitor of experiencing such views, a more intensive viewscape analysis was undertaken to include digital three dimensional

**Fig.#8
CYPRESS HILLS
VIEWSCAPES
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN**

- LEGEND**
- Study Area Boundary 
 - Secondary Road 
 - Paved Highway 
 - Inner Fringe 
 - Areas Visible From:
 - 1 Viewpoint 
 - 2 Viewpoints 
 - Viewpoint 

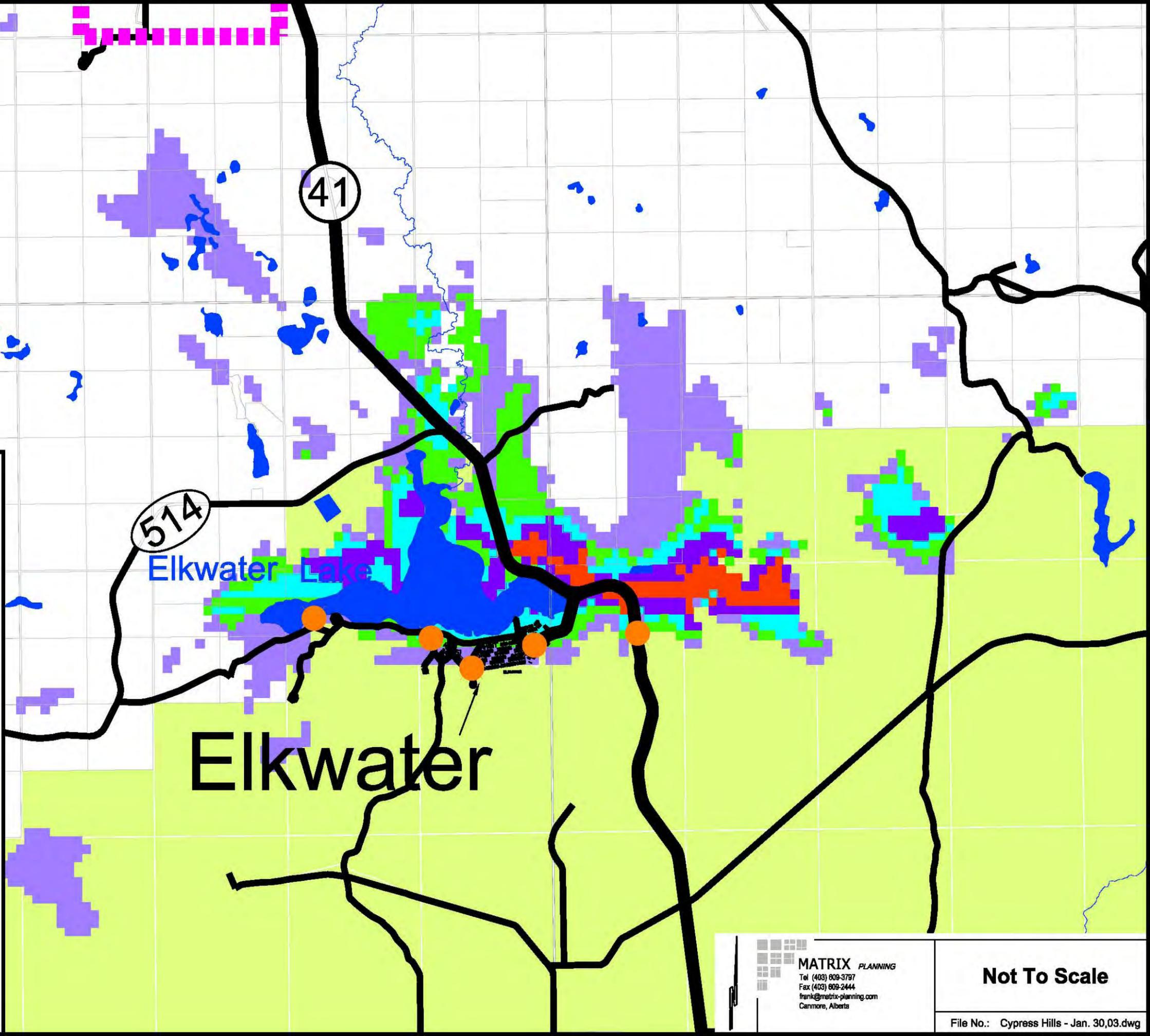


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**Fig.#9
ELKWATER VIEWSCAPES
DETAIL
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN**

- LEGEND**
- Study Area Boundary 
 - Secondary Road 
 - Paved Highway 
 - Inner Fringe 
 - Provincial Park 
 - Areas Visible From:
 - 1 Viewpoint 
 - 2 Viewpoints 
 - 3 Viewpoints 
 - 4 Viewpoints 
 - 5 Viewpoints 
 - Viewpoint 



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Not To Scale

File No.: Cypress Hills - Jan. 30,03.dwg

imaging of specified viewpoints. Viewscape mapping as a factor in land use decision making is a subjective matter. Maintaining key views as a requirement for future area planning by applicants for subdivision or development will depend upon the site-specific application for re-classification and subdivision.

2.7 WILDFIRE HAZARD (Fig.10)

The Cypress Hills Fringe Area is vulnerable to wildfire due to forested fuel types within and adjacent to Cypress Hills Provincial Park and native prairie grasslands within and outside the Park. Warm and dry weather and topographic conditions combine with the fuels to produce wildfire that could threaten present and future development in the area.

Native prairie grassland fuels are capable of supporting rapidly spreading surface fire while forested fuels, found mainly within Cypress Hills Provincial Park, are capable of supporting intense crown fire under the proper weather and topographical conditions. Fire behavior prediction models indicate the potential for extreme fire behavior conditions including firebrand spotting distances of nearly one kilometre and rates of spread up to 110 metres per minute.

Wildland/urban interface hazard and risk will increase as development increases, resulting in higher risk of wildfire to structures and structure fire to the wildland.

A Wildland/Urban Interface study specific to the Study area was prepared under a separate cover. Using fuel type, crown fire susceptibility, wildland/urban interface, and fire behavior models, high hazard areas are identified and buffered based on predicted spotting distances. Two development zones are identified based on this analysis and guidelines for FireSmart development are identified for each zone.

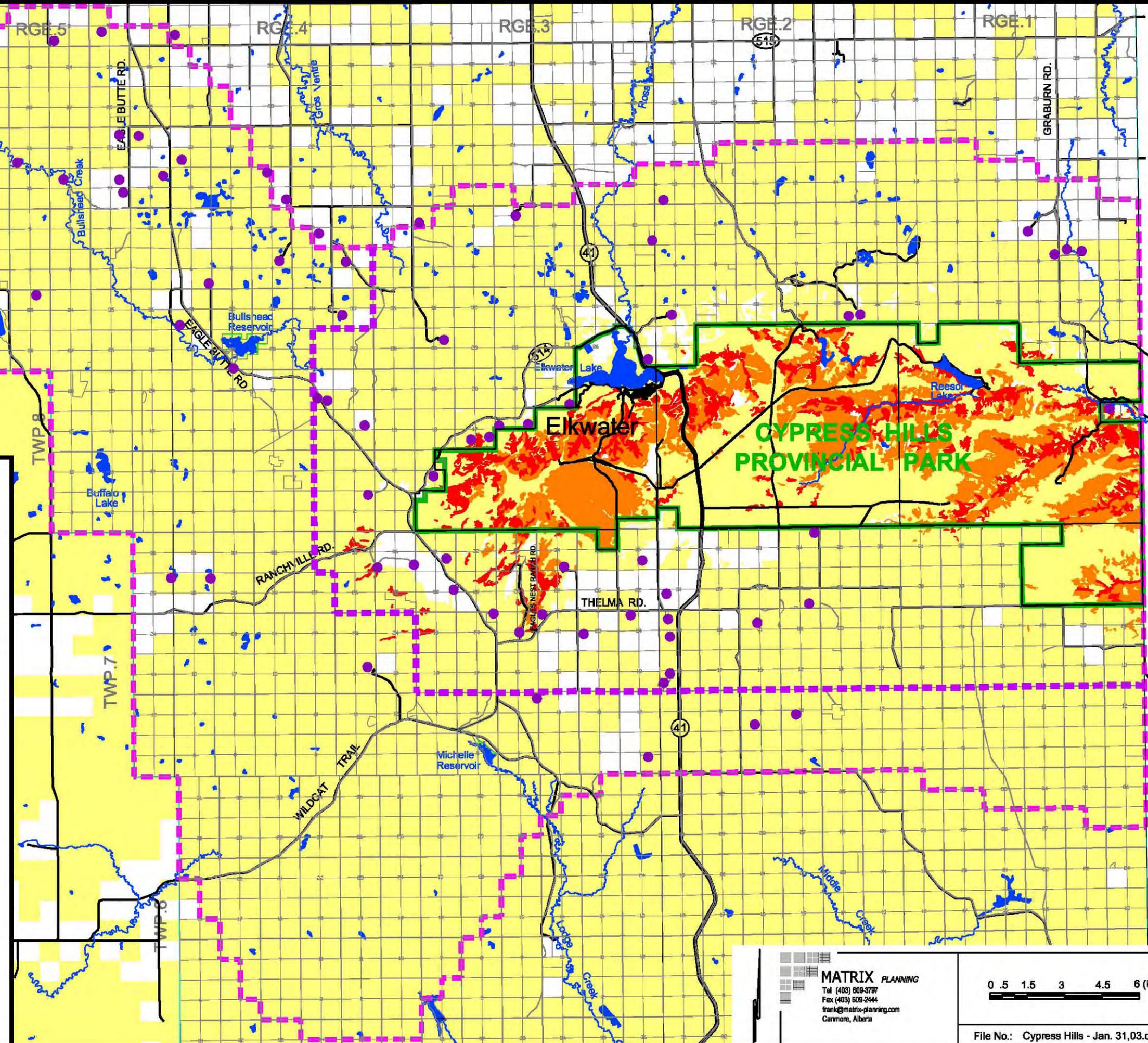
It is anticipated that through the consideration of wildfire in the land use planning stages of development that the risk of wildfire to development will be reduced in the Cypress Hills Fringe Area.

**Fig.#10
WILDLAND / URBAN
INTERFACE HAZARD**

**CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN**

LEGEND

- Plan Area Boundary 
- Secondary Road 
- Paved Highway 
- Inner Fringe 
- Structure Location 
- WUI Hazard
- Low 
- Moderate 
- High 
- Extreme 



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3. EXISTING HUMAN FEATURES

3.1 EXISTING LAND USE AND HUMAN ACTIVITY (Fig.11, 12)

Industrial - The general land use of the fringe area is largely grazing with pockets of cultivated land. Numerous clay pits are located within the fringe area containing whitemud deposits used in brick making in the Medicine Hat area. Other uses include numerous oil and gas wells developed over the years as well as oil and gas transmission lines.

Transportation Network – The transportation network is largely composed of gravel roads. The standard right of way varies from 30 – 40 metres. Highway 514 (gravel with oil base course and Highway 41 (paved) are Provincial responsibilities. Future upgrading is possible at the Highway 41 and Elkwater access intersection. Other access along undeveloped road allowances exist but are not considered as County maintenance responsibility.

Above-Ground Utility Transmission Lines - The nearest transmission line is approximately 50 km to the northwest. It is a 138 kv line operated by Trans Alta Utilities. Discussions with Trans Alta indicated that the load is not sufficient within the Study area or through the Study area to anticipate construction of anything larger than a 25kv line in the foreseeable future.

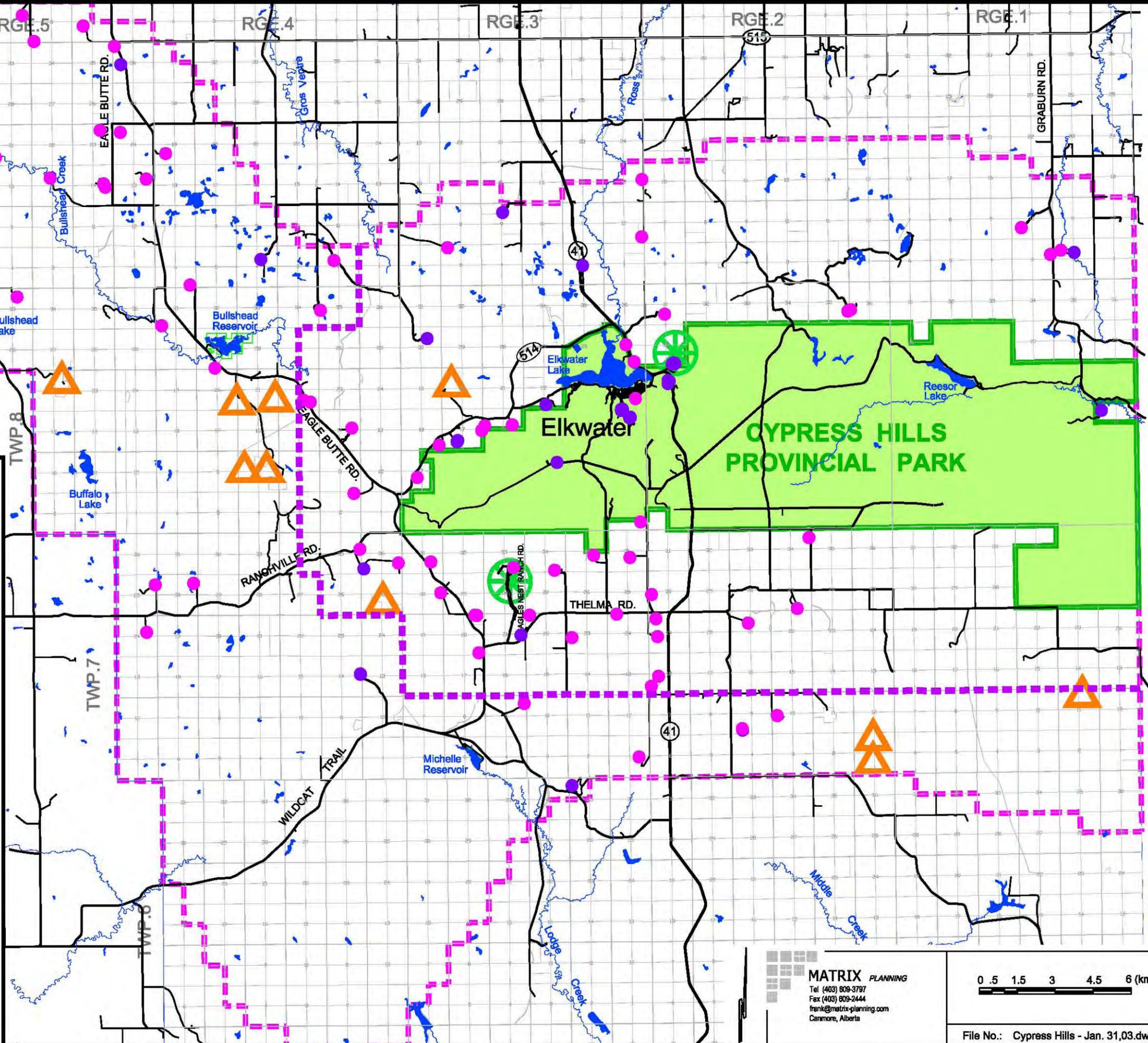
Commercial Recreational - Several resort-like establishments have developed over the years. The Eagles Nest Ranch and Whispering Pines have developed incrementally over the years as church retreats. Beyond these developments, there are several group camps within the Park itself as well as several bed and breakfast operations.

Residential - Approximately 100 homes on 84 homesteads are scattered around the Study area. Approximately 35% of those are located within 2 miles of the Park boundary, largely in a crescent shape around the west half of the park boundary and along the south slope of the Hills near Highway 41. Another 25% are concentrated in the northwest corner of the Study area in the Bullshead area.

Private landowner distribution (Fig. 13) - According to a County database, the Study area contains 1,022 privately owned parcels covering 544 km² (210 sq. miles) out of a total Study area of approximately 1065 km² (412 sq. miles). Of those, 280 landowners control approximately 795 un-subdivided quarter sections (roughly in sizes between 153-160 acres). Therefore, at a density of one parcel per quarter, the theoretical rural residential buildout is at least 795 additional parcels spread evenly

Fig.#11
EXISTING LAND USE
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN

- LEGEND**
- Study Area Boundary 
 - Secondary Road 
 - Paved Highway 
 - Inner Fringe 
 - Primary Residence 
 - Secondary Residence 
 - Commercial Clay Pit 
 - Areas Currently Zoned RF (Recreation Facility) District
 Include SE1/4 30-8-2-W4M
 and W1/2 of NE1/4 28-7-3-W4M 



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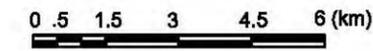


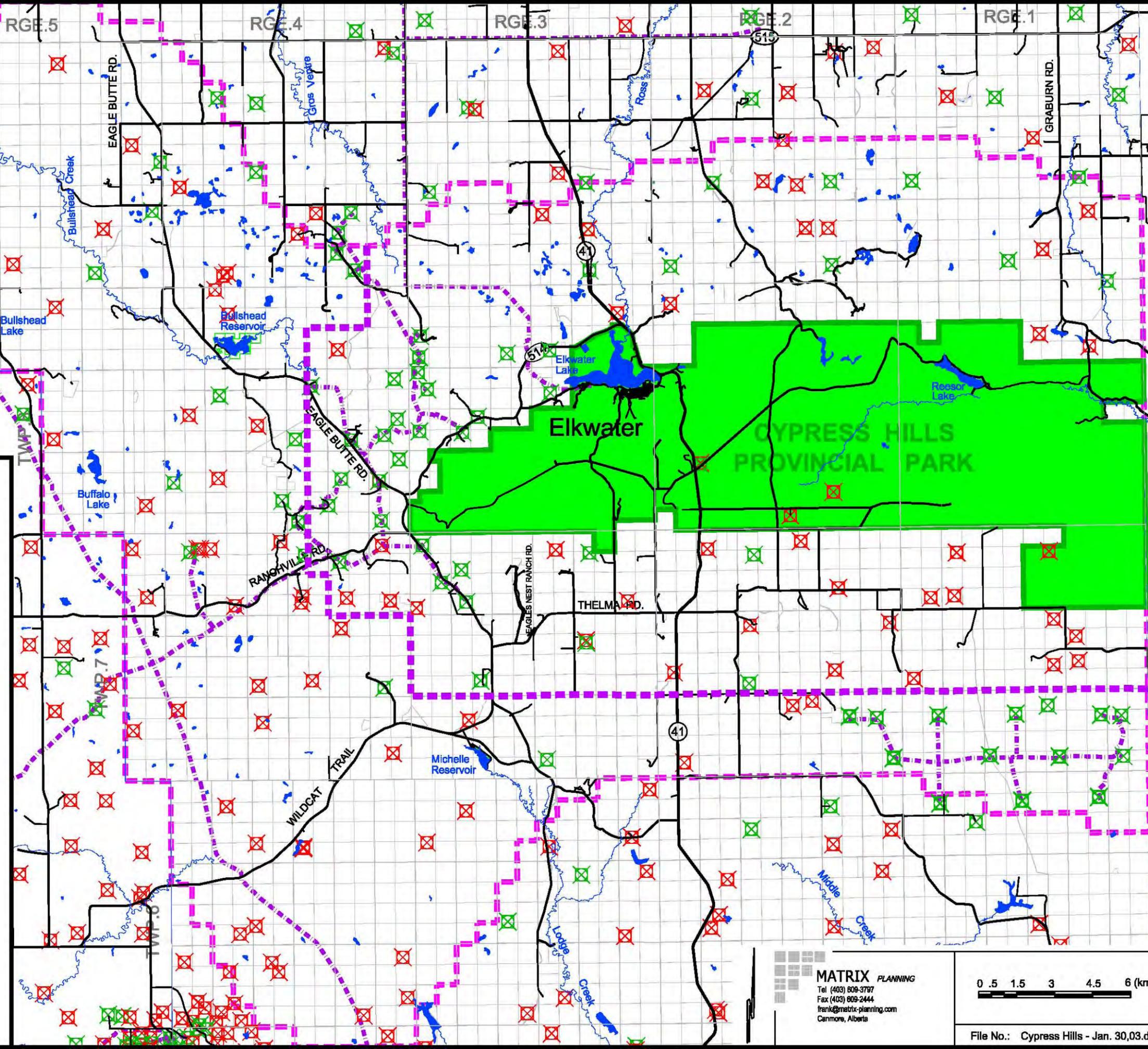
Fig.#12 EXISTING & OIL / GAS ACTIVITY

CYPRESS HILLS

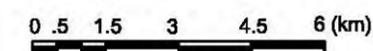
FRINGE AREA STRUCTURE PLAN

LEGEND

- Study Area Boundary 
- Secondary Road 
- Paved Highway 
- Inner Fringe 
- Transmission Pipeline 
- Oil Wells
 - Active 
 - Abandoned 



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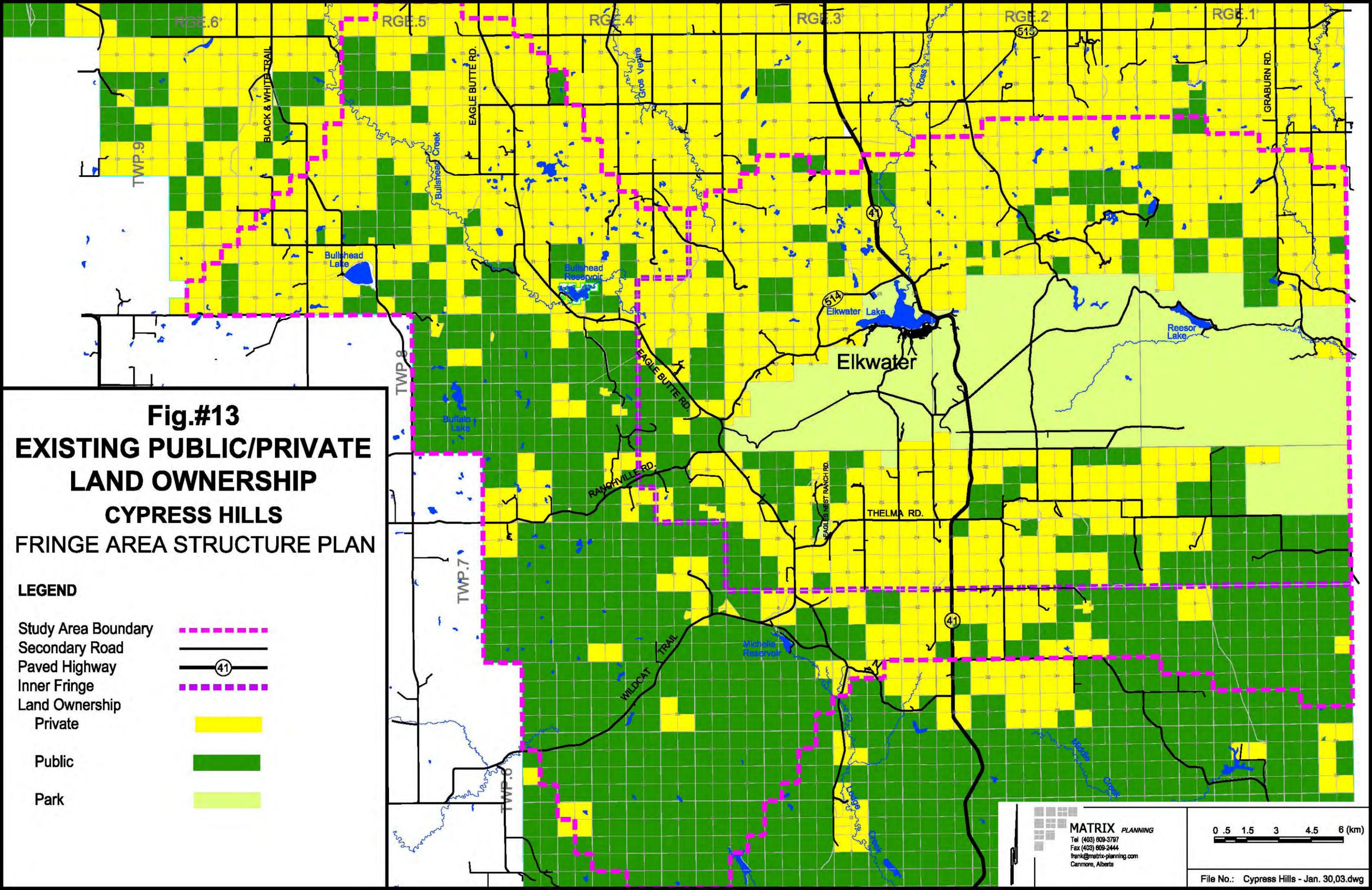


Fig.#13
EXISTING PUBLIC/PRIVATE
LAND OWNERSHIP
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN

- LEGEND**
- Study Area Boundary
 - Secondary Road
 - Paved Highway 41
 - Inner Fringe
 - Land Ownership
 - Private
 - Public
 - Park

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over the countryside. In addition, the ability to create a second residence on the balance of a quarter subdivided out of the homestead would double this potential to almost 1600 added residences. Clearly this potential density is not likely to occur as not all quarters have proper road access, potable groundwater, economical utility access, adequate building sites, etc. However, looking at what is likely as land with development potential is a sliding scale of desire and economics. If a tenth of the un-subdivided quarters subdivided one parcel out, the number of homesteads on the landscape would more than double.

Large landholdings greater than 640 acres are relatively few, numbering less than 50 or so. However, the vast majority of land is held by these relatively few landowners. The limited number of affected landowners in the Study area who own large blocks of land with similar land uses makes it somewhat easier to reach a land use policy resolution that can be supported by the majority of landowners.

CYPRESS HILLS STUDY AREA CALCULATIONS

Parameter	Total Mapped Area hectares (ac) FROM GIS MAP	Total Parcel Area hectares (ac) FROM COUNTY ASSESSMENT ROLLS	Total # of Parcels FROM COUNTY ASSESSMENT ROLLS	Total # un-subdivided quarters (IE. > ±150 ACRES AND WITHOUT PLAN NUMBERS)
Entire Study Area (excludes Provincial Park)	106,587 ha. (263,373ac.)	N/A	N/A	N/A
Privately Owned Land	54,381 ha. (134,380ac.)	57,826 ha. (142,885 ac.)	1022	795 plus others that are less than 150ac
Crown Land	48,234 ha. (119,190ac.)	48,761 ha. (120,487ac.)	N/A	N/A
Private Parcels in the Cypress Fringe	N/A	27,800 ha. (68,700 ac.)	556	419

NOTES: There are roughly 840 quarter sections worth of private land according to the map and some simple extrapolation (ie. private land in Study area ÷ 160 ac = 840 quarters). However, according to the assessment data, the largest 840 parcels range in size from 169acres to 127.6acres. The total area for the largest 840 parcels is 53,866 hectares (133,102 ac.). The assessment rolls identify 795 un-subdivided quarters that are 150ac or more.

3.2 CYPRESS HILLS PARK USE

The Park User Profile - Although not technically part of the Study area, Cypress Hills Park (203km²) is plays a pivotal role in the future land use of the fringe area. Much has been written about the Park and its attributes. This Plan focuses on the relationship of the Park with the surrounding fringe. Visitation by day users, summer residents and campers play an important role in defining the image of the park. Their use of facilities, trips to viewpoints and demand for services will in part be affected by land use decisions in the fringe.

Statistics between 1990 and 2000 indicate that total day use in 2000 was approximately 235,000 day users. This is roughly half of what Waterton National Park receives annually. However, total overnight use in 2001 by campers in Cypress Provincial Park was 61,000 users compared to 33,000 in Waterton. Both Parks have roughly the same number of campsites. This clearly shows the use of Cypress Park as a more intensively used 'recreation use' Park by those within a days drive. In fact 87% of the Park is used by Albertans and roughly 75% of users come from within a three hour drive. This is attributed to the presence of the Medicine Hat, Lethbridge, Calgary market. Moreover, 83% of summer cottage owners in Elkwater register a Medicine Hat area permanent address.

Elkwater Townsite - Covering 576 hectares (1424 acres) and with a user population largely restricted to non-permanent use, the Elkwater townsite is the most populous community around the Study area. With approximately 280 residential parcels, its summer population is estimated to reach 3-4,000 visitors on weekends. Elkwater is not considered an official hamlet by the County nor is it an incorporated municipality. The townsite of Elkwater is administered by the Province with some assistance from the County in the provision of municipal services. While subdivision approval and development control are administered by the Province, taxes are collected by the County.

The Province has stated it has no intention of increasing capacity in Elkwater or elsewhere in the Park to offset the pressure for resort or cottage accommodation. However, applications for new development and/or re-development of aging facilities is potentially feasible. With Elkwater at its subdivision limit, this increases development pressure on the fringe area to provide new sites for the recreation and residential market.

3.3 EXISTING AGRICULTURAL USE PATTERNS (Fig. 15)

The native prairie has been the economic mainstay of Fringe area residents for many years. The area has a significant area of native rough fescue prized for its high protein content and durability when compared to tame pasture. Figure 15 shows the Existing Agricultural Land Use Patterns. Data has been derived from County Assessment records. Lands that may have been cultivated at one time but naturally reverted to native prairie may also be included as “native”. The map identifies the vast majority of the study area as high native prairie ratings (ie. more than 120 acres of the quarter section) with a cluster of less significant prairie and cultivated land on the south side of the Park boundary west of Highway 41. A third non- native cluster is located west of the Bullshead reservoir.

Over the years, tame hay has been seeded in a number of parcels. While once it generally accepted practice was to “improve” pastures with tame hay, recent research and literature has suggested that this is a less sustainable practice than conserving the natural fescue regime wherever possible. Fig. 15 also identifies the distribution of the improved rangelands and cultivated land. These areas are similar in the distribution to the more fragmented native rangeland components in Fig. 15 (<80 acres native rangeland); ie. clustering around the south side of Cypress Park boundary and west of Hwy 41. A second cluster of more fragmented rangeland hugs the south side of Secondary Road 514 and a third cluster is located northeast of the Eagle Butte Road.

The continued sustainable agricultural use of rangeland and the protection of native rangeland are compatible, but not always overlapping goals. The differences in the mapped distribution of high-rated native prairie components and the better rangeland components, while not in perfect alignment, do have similar characteristics – ie. presence of native fescue rangeland. The following chapters examine this relationship most closely for purposes of policy implementation.

4. ISSUE ASSESSMENT AND ANALYSIS

4.1 COMMUNITY CONSULTATION AND PLANNING PROCESS

The County and Province initiated the Planning process in May 2001 with the first meeting of the Cypress Hills fringe area steering committee. It was composed of Council members, representatives of Provincial agencies, a public member and County planning staff. After the July, 2001 meetings, an additional steering committee member from the local area was added to the Planning Steering Committee.

Public meetings were held July 16-18, 2001 to introduce the process and for issue identification and again on May 24-25, 2002 for review of Plan options and November 4th, 2002 for a review of a draft Plan. Meeting attendance averaged 50 persons per meeting and these were helpful in clarifying the issues. Especially helpful was a survey filled out at the meeting. The community comments gave direction to the Steering Committee. Further changes were made to initial planning concepts in response to the May, 2002 meetings and in response to the November 4th meeting.

In July and August, 2002 Study area landowners were surveyed as to their preferred values and the preferred density of development allowable in the Study area. The purpose of the survey was to evaluate values respecting key policy areas such as protection of groundwater, the viewscape, native rangeland, the ecological balance and desire to develop land for estate planning and as a profit venture. The results are shown in the table below.

<i>Question 1) Land Owner Survey Response - July, August 2002</i>		
<i>1) question on public perception of future density: Given that there are currently about 100 residences in the study area, What is the <u>maximum</u> number of new country residential parcels you believe could be created before the fringe area is negatively affected to an unacceptable degree? <u>please Check one of the following:</u></i>		
<i>ACCEPTABLE NUMBER OF ADDITIONAL PARCELS</i>	<i>NUMBER OF RESPONDENTS</i>	<i>% RESPONSE RATE</i>
<i>NO MORE DEVELOPMENT:</i>	<i>20</i>	<i>29</i>
<i>≤100 PARCELS-</i>	<i>19</i>	<i>28</i>
<i>101-200 PARCELS</i>	<i>3</i>	<i>4</i>
<i>201-300 PARCELS</i>	<i>14</i>	<i>21</i>
<i>301-400 PARCELS</i>	<i>4</i>	<i>6</i>
<i>401-500 PARCELS</i>	<i>4</i>	<i>6</i>
<i>MORE THAN 500 PARCELS</i>	<i>4</i>	<i>6</i>

<i>TOTAL RESPONSES</i>	<i>68</i>	<i>100%</i>
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QUESTION 2) Land Owner survey July, Aug. 2002 responses	
CRITERIA TO CONSIDER	RELATIVE IMPORTANCE (OUT OF 100)
GROUNDWATER PROTECTION – A recent groundwater study implied that the accuracy of groundwater availability and quality is still unknown to any great degree. There will still be questions as to what effect will multi-parcel country residential or resort-recreation uses have on the long term groundwater availability.	20
NATIVE RANGELAND PROTECTION – Native rangeland is a key characteristic of the study area. It supports a way of life for ranchers in the area, and provides critical habitat for plants and animals. Native rangeland speaks to the heritage and lifestyle values of the study area, particularly ranching and the open range.	20
FAMILY ESTATE PLANNING - Some landowners wish to subdivide their land as an asset that will carry them into retirement and/or be subdivided for their children. This value is provided for in the A-2 land use classification district which allows for a farmstead separation and a house on the balance of the quarter.	13
PROTECTION OF EXISTING VIEWS – This includes minimizing the effects that any future multi-parcel country residential subdivision may have on prominent viewpoints in the park and its view from nearby homesteads.	11
ECOLOGICAL PROTECTION -_The study area hosts unique and sensitive ecological resources including fescue grassland, wetlands, riparian areas, montane forest elements, natural springs and listed species. Much of the study area is a nationally significant environmental area.	11
WILDFIRE HAZARD RISK - Fire hazard ratings have been mapped for the study area. The conditions of development in high risk areas will require developers to spend more thought, time and money to conform to the restrictions. Municipal officials will be required to be ever vigilant in ensuring the development conditions are met.	10
DEVELOPING FOR PROFIT - This assumes that any landowner should have no restrictions to subdivide land and develop as much as they wish, regardless of adjacent neighbours or the “greater public interest”.	8
ANY OTHER CONSIDERATIONS YOU THINK SHOULD BE INCLUDED (PLEASE EXPLAIN) :	7
TOTAL SCORE:	100

Survey methodology and response rate - According to County assessment records, there were a total of 210 potential responding households in the Study area. Of these, 78 responded to the questionnaire for an overall response rate of 37%. The response rate within a 2 mile area around the Park was somewhat better with 50 out of 91 potential households responding for a 55% response rate.

Not all questions were answered in all survey forms. While survey responses were self-administered (ie. respondents chose whether to fill out the survey or not), additional staff were employed to collect and re-distributing surveys for a second round within 2 miles of the Park to those households that did not respond the first time. Any person was eligible to respond for the household.

Survey Results – Question 1 asked, in the opinion of the respondent, how much additional development was acceptable in the Study area. Of 77 survey respondents, 9 chose not to answer this question. Of those who did answer, 29% of the respondents felt no more development should be allowed; 28% of the respondents felt that up to 100 more residences was acceptable; 4% felt up to 200 parcels was acceptable; and 21% felt that up to 300 lots was acceptable.

Question 2 asked respondents to examine their values and place them in a priority using a limited budgeting technique. They had 100 value units to spend on all of the values and needed to spend the 100 units on each of the identified values according to how valuable they viewed each criteria. Of the 77 responses, the two top responses (20% each) were protection of native rangeland and groundwater protection. All other responses were substantially less important and were given similar ratings between 10% -13%.

It is interesting to note the extent to which the other physical attributes of the land were evenly assigned but none were ignored; ie. protection of undeveloped views (11%), ecological protection (10%) and wildfire hazard (10%). It is also interesting to note that subdivision and development for purposes of family estate planning (13%) was significantly different from developing primarily as a profit making venture (8%). It was assumed that the current A-2 land use district (one farmstead separation per quarter) fulfilled the requirements of estate planning while development for profit would require a re-classification.

Regarding the category of “*Any other considerations*”, this garnered a 7% score. The following is a brief summary of comments; householders had differing opinions on the survey and both should have the opportunity to comment; highway 41 cannot handle the traffic volumes that the Plan may generate; Elkwater should have development restrictions as well; moderate commercial would be good for the area; elk should not be favoured over other ungulate species; policies should be included that do not allow further cultivation of native rangeland; don’t interfere - most farmers and ranchers know how to take care of their land and water; there is no real development pressure – this is a part time playground; community viability needs more people; don’t spread provision of services too thin; boundary line is stupid – instead, draw a circle around Elkwater as the boundary; develop more residential capacity in the park rather than on the fringes.

4.2 OPPORTUNITIES AND CONSTRAINTS ANALYSIS

The major opportunities and constraints are identified geographically in the mapping provided with this section of the document. The following conclusions summarize the opportunities and constraint factors that were considered in the preparation of Plan policy.

Public Input - The public consultation has identified multiple attitudes on just about every issue. While the interests of Elkwater cottagers and ranchers often diverge, they do have areas of convergence. They agree that water is a key resource that should be managed more wisely; the landscape has important ecological, heritage and economic value to all residents and visitors; that goals should be set and reviewed by the public; that wildlife habitat and a defined amount of human presence can be mutually accommodated if done with sensitivity; that subdivision and development in the Study area should be minimized but that landowners should have the ability to develop their land (but the degree to which that should occur was unspecified).

View Protection - The viewscape attributes of the Park are National in significance. The key views are assumed to be from high use areas inside the Park. These result in a blanketing of the south, west and north with viewscape constraints. However, privately owned parcels directly below the selected viewpoints may not be visible in all cases due to slope angle and vegetation obscuring the view. This will require additional case by case confirmation. While the matter of view protection was not rated as highly by the community landowners as other values, retaining the status of existing views from key viewpoints are nonetheless deemed to be a national heritage feature in the greater public interest. As a result, views should be a consideration in land use, subdivision and development approval processes.

High Agricultural Capability – The area is quite productive agricultural land. This area has the highest grazing capability in the County. A significant portion has a CLI Land Classification of Class 3 or better. In order to preserve the agricultural way of life, development needs to be directed away from the better agricultural lands.

Ecologically Sensitive Lands – The area is highly significant on a regional, provincial and national scale. Development must be sensitive to the need for long-term resource protection and management. Certain developments may be carried out in less productive areas subject to environmental impact analysis and appropriate

mitigation. Buffers may be necessary to ensure that development does not encroach unnecessarily into the surrounding landscape.

Wildland urban fire hazard - As would be expected, areas subject to wildfire hazard surround the Park. Two development zones have been identified within this area. The highest hazard exists within the treed areas. To minimize the hazard, the application of the “Firesmart Guidelines” developed by Alberta Forestry is recommended.

Surface and groundwater - It is assumed that no further surface water allocations will be considered by the Province, especially withdrawals from Elkwater Lake. The HCL groundwater study has recommended that the key indicators of groundwater yield capacity are Yields In Upper Bedrock Aquifers and Total Dissolved Solids. TDS measurements are also indicative of other indicators such as chlorides, fluorides and sulfides. Other indicators of water quality and quantity are expressed in the 2002 PFRA study and could be eligible to be included by applicants in support of future development.

Future trends for development pressure – It is assumed that development pressures will continue to increase over time to the point where it will cause pressure to fragment important rangeland as a healthy agricultural, ecological and heritage landscape. While it may not come immediately, the long term trends are clear in many parts of Alberta and by extension, in the Study area.

Specific areas under development pressure - Pressure for future land use intensification in the fringe is expected in the fringe area immediately adjacent to the park, along Highway 514 and Eagle Butte Road, and along the south slope, west of Highway 41. With a few exceptions, the north slope of the Park is subject to conservation easements and is unlikely to change in the long term. The remainder of the Study area has ecological value in its current use as rangeland, but it is less attraction for country residential or resort recreational purposes.

Rural residential - Approximately 101 homes on 84 rural homesteads are identified in the Study area. There is a concentration near the Park boundary, comprising approximately 50% of the total homesteads.

Park use statistics - The Park is almost twice as heavily used for overnight camping than is Waterton National Park, with comparable numbers of campsites. This speaks to the importance of the Park (and by extension, its relatively undeveloped hinterland) to this core user group, the vast majority of which are within a three hour drive. While they are not landowners, they have an interest in the future of the Park environs.

Public land - Public land will not likely be sold to private interests for development purposes. Further, the Provincial mandate is to protect the land resource for future agricultural production. Therefore, Plan policy will generally apply to private lands.

Elkwater future - The Province has stated it has no intention of increasing capacity in Elkwater or elsewhere in the Park to offset the pressure for resort or cottage accommodation. Therefore, the Plan assumes a future buildout of cottages but not a future cap on Park visitors.

5. GOALS AND OBJECTIVES

OVERALL GOAL - TO PROVIDE AN OPPORTUNITY FOR DEVELOPMENT IN THE CYPRESS FRINGE PLAN AREA IN A MANNER THAT RESPECTS THE VALUES THAT CREATED CYPRESS HILLS PARK AND RESPECTS THE HERITAGE AND ECOLOGICAL LANDSCAPE OF THE AREA.

5.1 GOAL - TO MINIMIZE THE CONTINUED FRAGMENTATION OF HIGHER-QUALITY NATIVE RANGELAND AND BETTER AGRICULTURAL LAND WITHIN THE CYPRESS FRINGE PLAN AREA - Native rangeland is one of the rarest remaining landscapes in Canada. Cypress Hills Park, and the surrounding fringe area contains some of the finest examples of high bio-diversity in a native shortgrass prairie anywhere in Canada as described in Section 2.3. The goal is to direct appropriate development into appropriate locations that minimize the fragmentation of the ecologically sensitive land expressed as a function of better native rangeland and at the same time recognize the minor component of better agricultural land as a resource that should also be conserved on its own terms.

5.1.1 Objective - MINIMIZE THE CONSTRUCTION OF NEW ROADS - New road building accelerates fragmentation of rangeland and should be discouraged wherever feasible. Concentrating future development along existing routes reduces municipal road development and maintenance costs.

5.1.2 Objective - PROMOTE THE PRESERVATION OF THE EXISTING RANCHING COMMUNITY - Within the **Cypress Fringe Plan area**, there are almost 420 privately-owned quarter sections in the Plan area plus another 137 that are less than a quarter section. If every quarter was subdivided to the maximum under today's existing rules, there is the potential of 840 new houses in the Plan area. No further subdivision is allowed after the first subdivision in the A-2 District. While the current A-2 land use classification policies allow *some* fragmentation to occur, retaining the current A2 land use classification is seen to balance the ability of the landowner, large or small to meet their family estate requirements while minimizing uncontrolled sprawl and hence, preserve the ability for ranching to remain a viable industry in the Plan area.

5.2 GOAL - TO REDUCE THE IMPACT OF FUTURE LAND DEVELOPMENT ON THE LANDSCAPE - The historical presence of ranching and the pressure for additional country residential development near the Cypress Hills has the potential to create visual, economic, social and environmental discord. Rural residential development can better co-exist with ranching operations by reducing the area of development and focusing on less productive or environmentally sensitive locations.

5.2.1 Objective - *REDUCE THE SIZE OF COUNTRY RESIDENTIAL PARCELS AND ENCOURAGE CLUSTERING OF NEW LAND SUBDIVISION* – Clustering of residential units into a few areas is preferred to fragmentation of every un-subdivided quarter and remnant parcel into large “hobby acreages”. Clustered Country residential subdivisions make more efficient use of land, have less visual impact, are more cost-effective to service with roads, piped water and piped sewers, and encourage a sense of community.

5.2.2 Objective - *IMPROVE THE MINIMUM SERVICING STANDARDS FOR FUTURE DEVELOPMENT* – Encouraging communal water and sewer allows less environmental impact on surrounding lands and more accountability in water and effluent treatment. Minimum standards for stormwater management reduce degradation of an increasingly precious surface water resource.

5.2.3 Objective - *EVALUATE DEVELOPMENT PROPOSALS USING SOUND ECOLOGICAL PRINCIPLES AND PROCESSES* – Site-specific assessment of development proposals is required to protect sensitive landscape features, especially riparian habitat.

6. FUTURE LAND USE PLAN

6.1 HOW TO USE THIS SECTION

This section of the Plan provides the spirit and intent in which the plan policies are written. This section should not be interpreted as policies but as context for the policies. Sections 7,8,9 contain the policies that express the specific Plan regulations. The mapping included in the Plan may require further field measurements to verify any discrepancies in measurement.

6.2 A FUTURE VISION

Multi-Parcel Country Residential Development - It is the year 2023. For the past 20 years the Cypress Hills Fringe area has been held up as the Canadian pioneer in innovative protection of rare, native, shortgrass prairie while allowing well considered development near Cypress Hills Provincial Park. Carefully located clusters of country residences have been established in secluded locations within the Cypress Fringe Plan Area away from the eye of the Parks visitors, with respect for the ranching heritage, and unique habitat values of ecologically sensitive areas.

Conservation Easement Program - Landowners have accepted the Conservation Easement that has been refined over the years with landowners and conservation agencies. The program has contributed to the preservation of the ranching landscape and the long term protection of the short grass prairie, the montane and the valued riparian zones. Indeed, the conservation easements have covered a good number of quarter sections, especially those with high ecological and productivity values.

Ranching - The Conservation Easement program has stabilized the speculative real estate market and landowners have returned to the business of ranching with security that the range will remain in it's present state.

Tourism - The area is always popular with visitors and summer residents of nearby Elkhwater. A few new resort, hotel and agri-tourism developments established on the edge of the Park are modest in size and laid out to avoid ecologically sensitive areas such as permanent and periodic shorelines. Views from the popular viewpoints are similar to the past with the exception of some new residences. Park visitors have confidence in the knowledge that new development will be evaluated along known criteria that was established years back and has since been refined.

Groundwater - A continuous groundwater monitoring program has been undertaken. This has resulted in the best database in western Canada and has contributed greatly to the predictability and accuracy of well tests. New development proposals are much more confident of the results and much uncertainty has been eliminated.

Water Conservation - The recurring pattern of drought has resulted in firm steps to conserve existing surface and groundwater. Curtailment of traditional cultivation practices, water cooperatives to husband precious surface water supplies, communal well supply for grouped country residential development, and water meters for all users are showing promise to stretch an uncertain resource.

Wildfire Hazard - Application of the Firesmart guidelines are instrumental in reducing risk and potential loss of property in and around the Park to the point where insurance companies are taking notice.

It is estimated that within the next 20 years, the majority of the fescue grasslands and the mixed-aspen montane outside the Park will have been protected as unbroken ranchland for the long term. The price was some country residential uses concentrated into a relatively small footprint and located on less sensitive lands. This is the legacy of visionary citizens.

6.3 FUTURE LAND USE CONCEPT

6.3.1 Philosophical Principles

The future land use Plan is based on four basic principles:

- Meshing Economic and Ecological Values
- Reducing the fragmentation of Agricultural Parcels
- Protection of better range and farmland
- Protecting the forest/rangeland interface
- Assigning potential Development Densities

6.3.2 Meshing Economic and Ecological Values

The mapping of the important native prairie lands in the Study Area largely corresponds to rangelands with high grazing productivity. In this sense, the overall goal of protecting economically productive lands is for the most part, congruent with the goal of protecting ecologically sensitive lands. Likewise, protection of better agricultural land is necessary for the continued survival of agriculture in the area.

6.3.3 Reducing the Fragmentation of Agricultural Parcels

Reducing fragmentation of the landscape simply means keeping as many quarter sections intact as possible and limiting the intrusion of roads into the prairie landscape. A case can be made for allowing some fragmentation as many quarters have small pockets of land that are not considered better rangeland or better agricultural land. While these areas have some potential for development, they often fulfill an important ecological function. Permitting scattered development throughout the area would also disrupt the agricultural community. Reduced fragmentation of agricultural parcels through clustered development offers the best means of accommodating development within the area.

Some fragmentation is necessary to permit land transactions and intergenerational transactions so current County policies allow for a measure of fragmentation. Therefore, protection from fragmentation as a goal in this Plan is a compromise that does not change the landowner's current ability to:

- create a parcel from the quarter for an existing farmstead that has been in existence for a minimum of five years and
- build a house on any other vacant parcel with a suitable building site

Limiting the intrusion of roads into the prairie landscape is another issue that the County needs to address. Roads disrupt the movement of wildlife through the prairie. The plan attempts to limit the development of new roads for multi-parcel residential development but is silent on the provision of new roads for agricultural development. This is in accordance with the wishes of local residences not to disrupt existing inter-generational transfers and development options.

6.3.4 Protection of Better Range and Farmland

Land that demonstrates a designated minimum amount of low rangeland and agricultural productivity may be considered for re-classification to more intensive development. Land is considered "better agricultural/rangeland" when the land is considered capable of a stocking rate at 35 acres (14.2 ha) per head or better. Better cultivated land is at 35% Rural Farmland Assessment. A parcel must have at least 10 acres (4 ha) or more of land that is not considered "better agricultural/rangeland" to be considered for re-classification to higher intensity use. The eligible parcels were expressed on a map based on the most accurate database the County has available to it; ie the County assessment files. While each site was visually inspected, assessment ratings do vary with each re-assessment. However, the intent of the Plan is clearly not to reward intentional land degradation in anticipation of development potential.

6.3.5 Protection of the Forest/Rangeland Interface

Some of the Cypress Fringe Plan area contains a continuation of the montane forest outside the Cypress Park boundaries. The “better rangeland” category does not expressly consider the presence of forested areas as a criterion for protection, although some non-development parcels are partly forested. It is assumed for the purposes of this Plan that the prime thrust is protection of the fescue-based rangeland. Although significant ecological processes may occur at the forest/rangeland interface, it is assumed that site-specific evaluation at the re-classification stages can mitigate tree loss, disturbance of riparian areas, stormwater management, etc. Further, as viewscape protection is a consideration in the Plan evaluation, the presence of trees is seen as a benefit that can act to screen the presence of multi-parcel residential from selected viewscales and roads.

6.3.6 Assigning Potential Development Densities

The question of carrying capacities was addressed in the Plan early on in the process. How much additional development could the area support in a sustainable manner? The Plan concluded that this was a complex task dependent upon a myriad of assumptions and not able to be properly assessed with the existing resources available.

Based on the site evaluation requirements, it is assumed that only a fraction of eligible parcels will choose to develop. In addition, the option of signing conservation easements to other conservancy organizations is expected to continue, thereby further reducing the number of developable parcels. The Plan recommends that Council review the progress of the Plan implementation over time and make adjustments as required.

6.4 LAND CAPABILITY MAPPING AND THE SUBDIVISION PROCESS

Based on the above noted Land Use Concept, what can an applicant for subdivision expect for an approval process? With the assistance of County staff, they must undertake a three step process as follows. The areas identified as more suitable for development are evaluated in two steps at the land use re-classification stage with a third step at the subdivision approval stage.

STEP 1 – MAPPING OF POTENTIAL DEVELOPABLE PARCELS – The first step is a preliminary identification of areas less sensitive to development on a *regional scale*. This is determined through the application of three preliminary criteria:

- land must be privately owned

- be located adjacent to existing road access
- a significant portion of the parcel should not be considered “better agricultural/range land” as determined from assessment records.

These criteria were are shown in the series of maps in the previous chapter. This mapping is intended to provide a quick overview of which areas are most suitable for development and should not be regarded as the final word. Site-specific evaluation may be required prior to re-classification to determine what land is suitable for subdivision or development

Figure 14 shows Private Parcels adjacent to existing Roads within the study area. Preference will be given to these areas for future development proposals. Council reserves the right to consider other parcels for development, that are located only a short distance off of an existing road.

Figure 15 shows Native Prairie Cover within the Cypress Fringe Plan Area Area. Fragmented parcels are scattered throughout the area but tend to occur mainly around the west side of Cypress Hills Provincial Park. To the north and south there is ample undisturbed prairie to give wild game the opportunity for game to move freely in and out of the park.

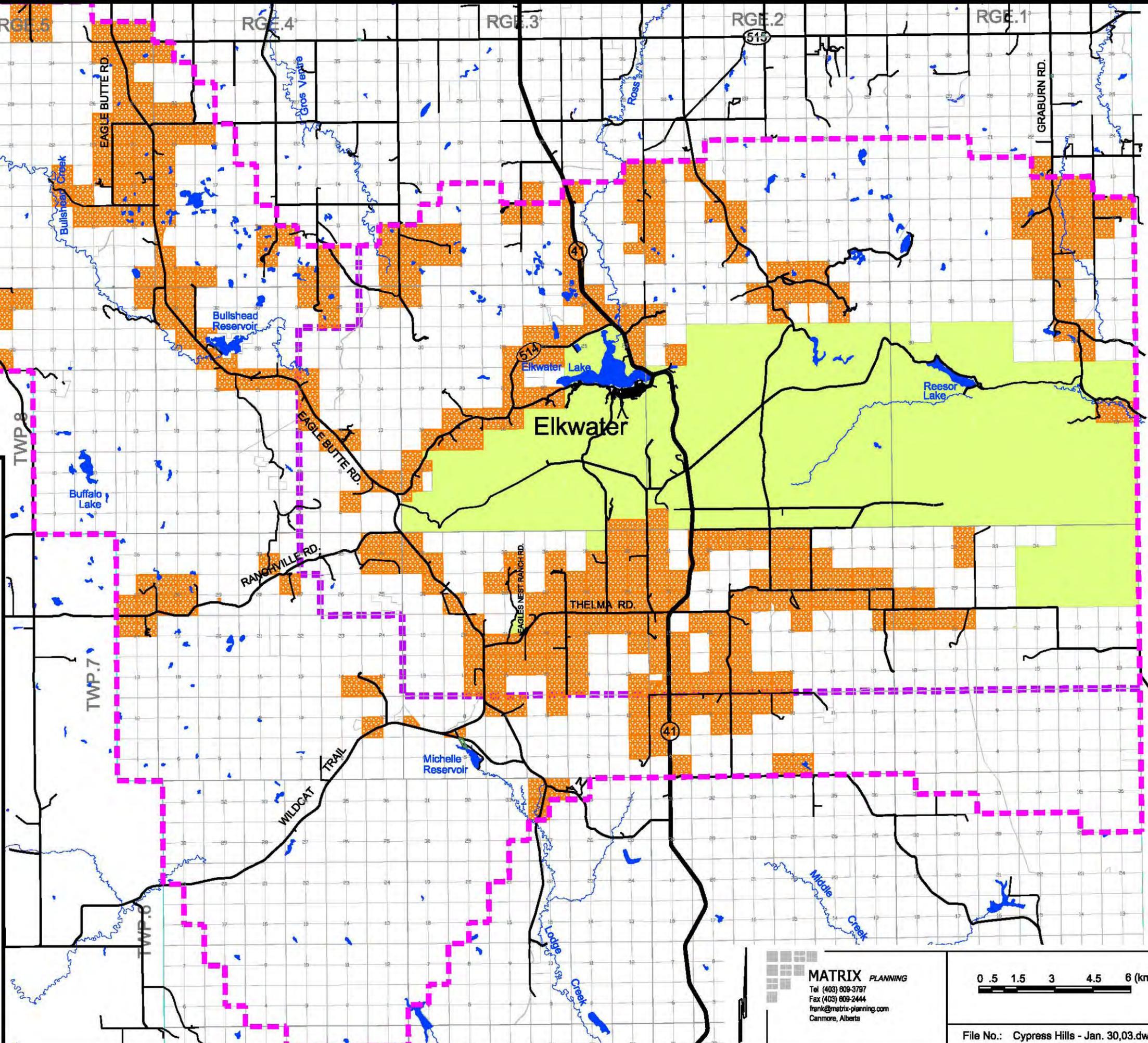
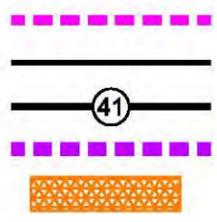
Figure 16 shows the Agricultural Productivity Rating of Private Lands in the Cypress Fringe Plan Area. Better Range Land is defined as land requiring less than 35 acres per head on a sustained grazing basis. These areas are quite productive and have been excluded from consideration for development unless it can be shown by a range capability assessment conducted by a qualified professional that productivity is actually lower than the rated capacity.

Other Range Land refers to land that is less productive (ie requires more than 35 acres per head on a sustained grazing basis). Land within the Cypress Fringe Plan Area is quite variable. To minimize excessive fragmentation, parcels containing less than 10 acres of lower capability land have been screened out of the map. These areas are being proposed as the primary locations for development, provided that the secondary criteria can be satisfied.

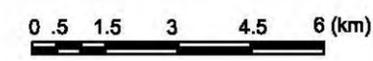
Lower quality improved pasture land and cultivated land are also shown on the map. These areas will be considered for development if the carrying capacity is less than 25 acres per head or the productivity is less than 25% of a full assessment rating. There is little improved or arable land within the Cypress Fringe that falls into this category.

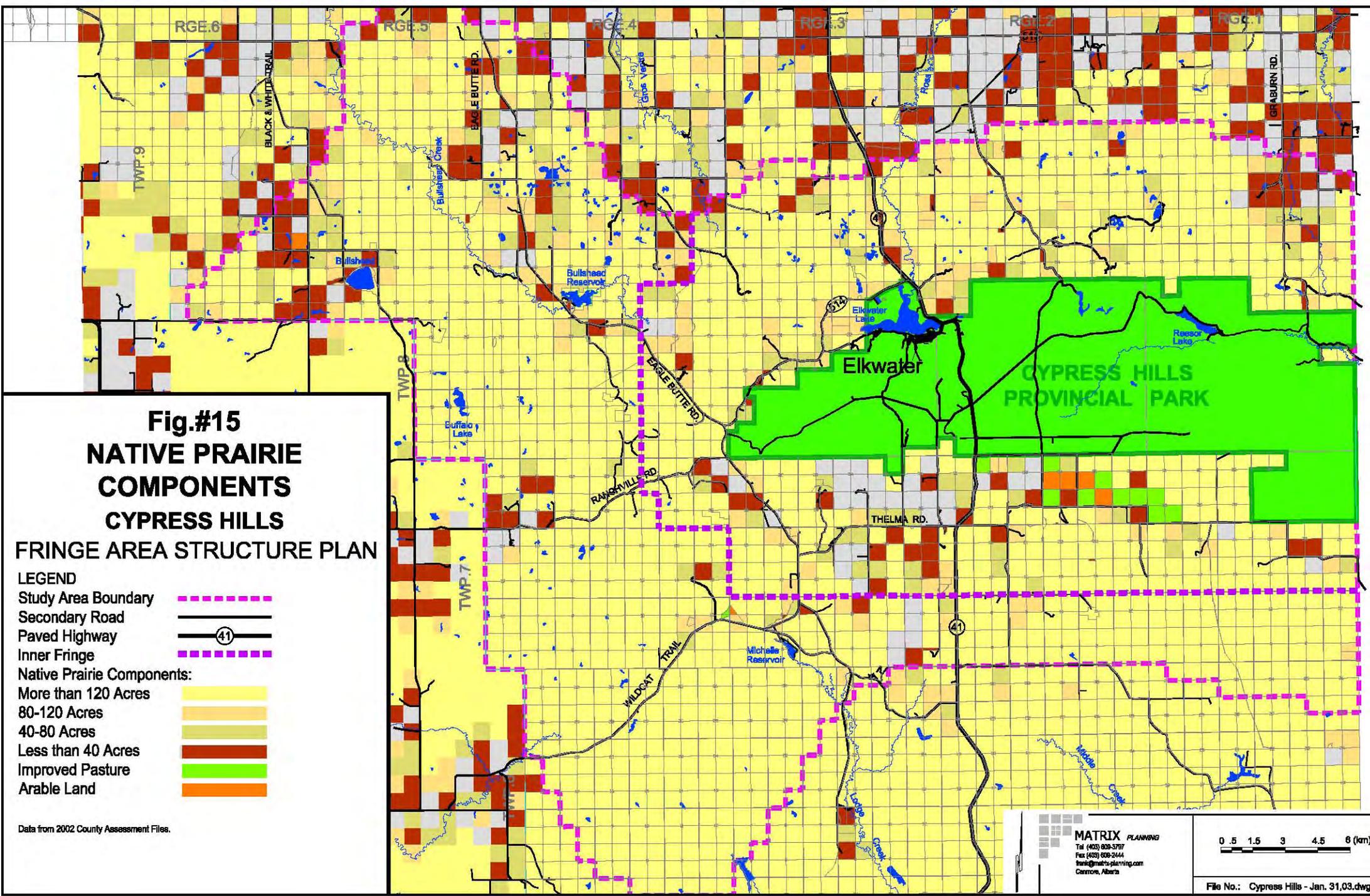
Fig.#14
PRIVATE PARCELS
ADJACENT TO EXISTING
ROADS
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN

- LEGEND**
- Study Area Boundary
 - Secondary Road
 - Paved Highway
 - Inner Fringe
 - Private Parcels Adjacent To Existing Road



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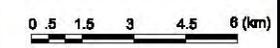


**Fig.#15
NATIVE PRAIRIE
COMPONENTS
CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN**

- LEGEND**
- Study Area Boundary
 - Secondary Road
 - Paved Highway 41
 - Inner Fringe
 - Native Prairie Components:**
 - More than 120 Acres
 - 80-120 Acres
 - 40-80 Acres
 - Less than 40 Acres
 - Improved Pasture
 - Arable Land

Data from 2002 County Assessment Files.

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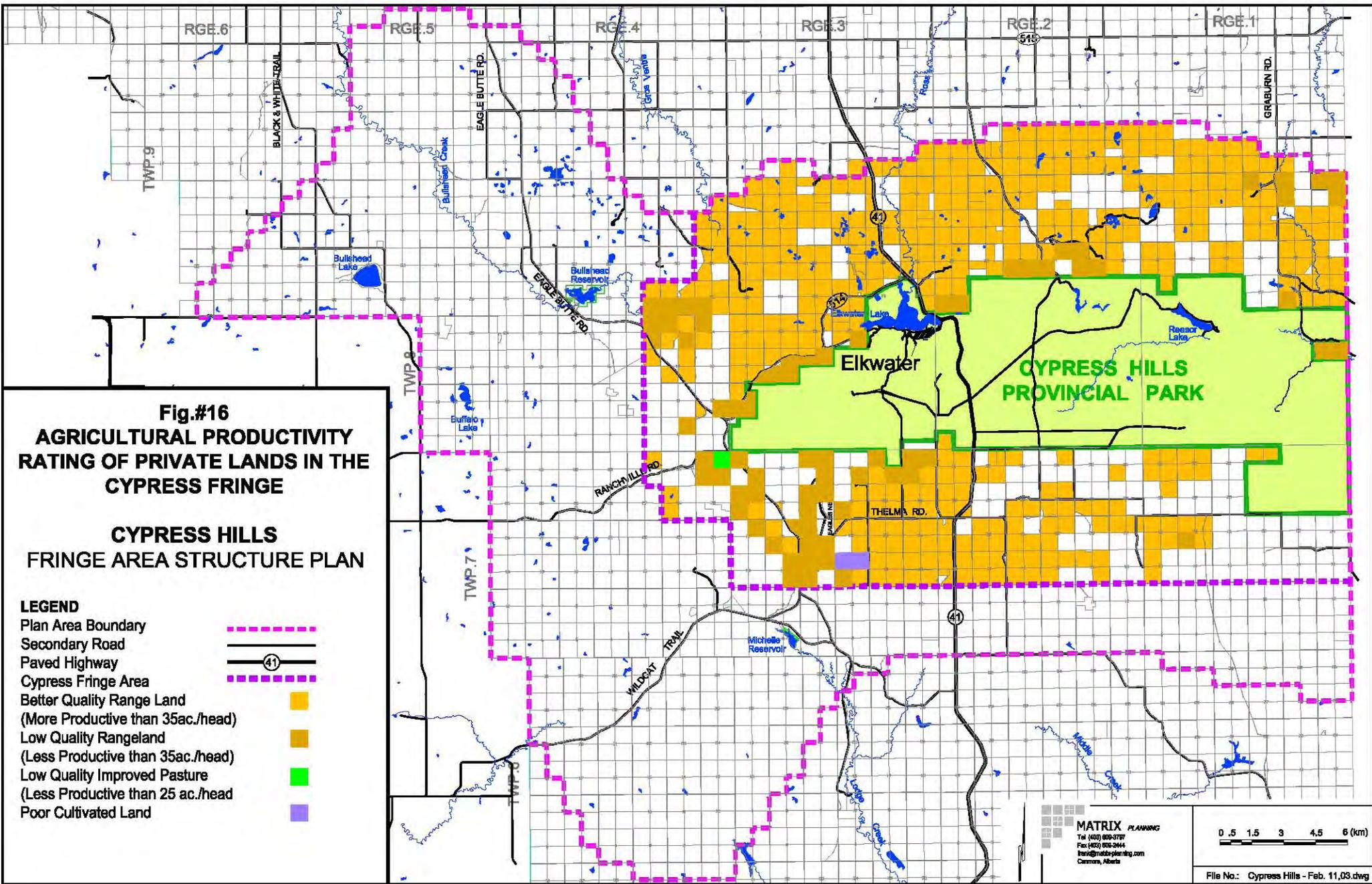


Fig.#16
AGRICULTURAL PRODUCTIVITY
RATING OF PRIVATE LANDS IN THE
CYPRESS FRINGE

CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN

- LEGEND**
- Plan Area Boundary
 - Secondary Road
 - Paved Highway 41
 - Cypress Fringe Area
 - Better Quality Range Land
 - (More Productive than 35ac./head)
 - Low Quality Rangeland
 - (Less Productive than 35ac./head)
 - Low Quality Improved Pasture
 - (Less Productive than 25 ac./head)
 - Poor Cultivated Land

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 Calgary, Alberta

0 1.5 3 4.5 6 (km)

File No.: Cypress Hills - Feb. 11,03.dwg

By comparing these two maps, the applicant can make an assessment of which parcels have to best potential for development. Based on this preliminary investigation, the most suitable areas for development appear to lie in a band to the northwest and southwest of Cypress Hills park. There is another area in the northeast area of the fringe.

The size of the Plan area and the changing circumstances precludes a perfectly accurate quarter-by-quarter assessment of agricultural and rangeland capability in every case. Therefore where a change is supported by a site-specific evaluation prepared by a qualified professional, it is possible for any landowner within the Cypress Fringe Plan Area to apply for an amendment to the Area Structure Plan (ASP) to re-classify any parcel as a development area.

Step 2 – Land Use Re-classification Process – The second step involves a more detailed site evaluation to determine whether the site is suitable for the use intended. Prior to making an application for a Land Use Amendment, an applicant must undertake studies regarding the following issues:

- The basic layout and design of the project
- Compatibility with adjacent landuses
- Assessment and mitigation recommendations for special features such as waterbodies and shorelines or special ecological habitats
- The impact of the proposed development on high-value viewsapes,

Step 3 – Subdivision and Development Review Process Approval of the Land Use Amendment provides the county with the assurance that the **land use** is suitable for the proposed site. The developer is then free to undertake detailed engineering studies to determine whether the **development** is feasible for a particular site. The subdivision or development application must be supported by detailed information on the following topics:

- Detailed plans of the project
- The availability of adequate supplies of groundwater or surface water to support development.
- Adequate methods of sewage disposal
- Availability and routing of underground utilities
- Access and traffic safety
- Slope stability and storm water runoff potential,
- Mitigation plans for waterbodies and shorelines or special ecological habitats

Until the required infrastructure is completed, and the subdivision plan is registered, the parcel retains the original A-2 designation. Site development cannot proceed until either is subdivision is registered or a Development Permit is issued.

7. LAND USE, SUBDIVISION AND DEVELOPMENT POLICY

7.1 HOW TO USE THIS SECTION

This section of the Plan provides the policies that express the specific Plan regulations. These must be interpreted narrowly and the only variations allowed are where they are specifically provided for. The mapping included in the Plan may require further field measurements to verify any discrepancies in measurement.

7.2 OVERALL LAND USE POLICIES

Introduction

The intent of policy is to ensure a comprehensive review of land use applications minimize the future development footprint and protect those landscape features that make this area Provincially and Nationally significant. The Cypress Fringe Plan Area area deserves good development that takes account of the many variables that have been discussed in the previous sections of this document.

Policies

- a) The Cypress Fringe Plan Area shown in Map 16 is a special area which requires individual treatment not required elsewhere in the County.
- b) The area outside the Cypress Fringe Plan Area is not considered part of the ASP policy but rather, is included only as reference for identification of existing conditions within the larger “Environmentally Significant Area” that was within the original Plan terms of reference.
- c) The Agricultural District (A-2) shall continue to be applied to parcels in the Cypress Fringe Plan Area until such time as a landowner applies for a re-classification to another land use.
- d) The *Cypress Hills Fringe District (CHF)* in the Cypress County Land Use Bylaw shall be applied to the Cypress Fringe Plan Area for applications where more intensive residential subdivision, re-classification and development is requested.
- e) Applications will be accepted for other Land Use Designations within the Cypress Fringe Plan Area. However, the approving authority shall have due

regard for the Area Structure Plan policies, guidelines and intent of the Plan in consideration of all Land Use Amendment applications within the Cypress Fringe Plan area. Where required by the County, applications for a subdivision or development may be required to undertake a hydrologic and hydraulic study, environmental review, viewscape review and/or conform to stormwater and subdivision and development design guidelines of the Plan.

- f) Provincial leased land that becomes private land after the date of Plan approval may be considered for re-classification in accordance with the provisions of this Plan.
- g) Land considered for re-classification will be evaluated on the basis of the aerial photos and County Assessment files at the date of approval of this Plan. Attempts to degrade native rangeland components in order to achieve land use re-classification shall be strongly discouraged.
- h) Information requirements for site-specific investigations required to accompany a re-classification application are itemized in this Plan and shall be submitted as required for re-classification, subdivision and/or development.
- i) *“Better rangeland”* in this Plan is defined as a parcel land with native species that has a productivity index of 35 acres per head or better (ie. fewer acres per head constitutes better rangeland) as shown on County Assessment records as of the adoption of this Plan.
- j) *“Better agricultural land”* in this Plan is defined as arable land with a rural farmland assessment rating of 35% or better.
- k) *“Better improved pasture”* is defined as a parcel of grazing land with non-native species that has a productivity index of 25 acres per head or better (ie. fewer acres per head constitutes better rangeland) as shown on County Assessment records as of the adoption of this Plan.
- l) A landowner in the Plan may apply for a re-classification to any use, if the land that is subject to the application is shown, to the satisfaction of the County, to satisfy the three primary criteria as follows;
 - a. Land is held privately,
 - b. The land is adjacent to an existing road and
 - c. The parcel contains a minimum of 4 hectares (10 ac) of land on the parcel that does not constitute better rangeland, better improved pasture or better agricultural land.

- m) Land that is the subject of an application to be re-classification shall avoid re-classification of permanent and seasonal riparian areas wherever possible.
- n) Country residential parcel density for Potential Development Areas is limited to a maximum of 32 parcels per quarter section. For applications where less than a quarter section in size, the maximum density shall be pro-rated at a rate of one subdivided parcel per 2.02 hectares (5ac.) of gross area in title.
- o) The minimum parcel size for country residential parcels within areas classified CHF shall be 0.202 ha. (0.5 ac.) and the maximum parcel size should be 0.404 ha. (1 ac.).
- p) The total area re-classified to a Land Use other than A-2 Agriculture within a parcel shall not exceed 16 hectares (40 ac) or 25% of the total area of the parcel. The balance of the parcel shall either be consolidated with an adjoining parcel (where a remnant parcel and an adjacent parcel are owned by the applicant), or receive the following designation(s).
 - Municipal Reserve
 - Environmental Reserve
 - Environmental Easement
 - Conservation Easement
- q) Dedication of reserve land shall be in the form of cash in lieu unless the approving authority identifies a local need to provide municipal reserve as land.
- r) Confined Feeding Operations (CFO's), as a use under Provincial jurisdiction, shall not be recommended by the County to locate within the Cypress Fringe Plan area.

7.3 COMMERCIAL LAND USE POLICY

Introduction

The intent of this policy is to describe the conditions under which commercial areas may be approved. Commercial uses are considered acceptable uses within the Plan area. Similar criteria apply to the location of commercial uses as for multi-parcel country residential.

Policies

- a) Applications for Commercial uses must apply either for a Commercial Land Use Designation or a Direct Control District.
- b) Multiple commercial uses within a single commercial application such as a resort are appropriate uses. Visitor accommodation is an appropriate use in the Plan area as are campgrounds of less than 100 sites.
- c) Direct access to visitor accommodation uses should be from a paved road. Where this is impractical, paving of the access road to within 200 metres of the primary access point or other dust control measure may be required as part of the development agreement.
- d) Commercial uses without a visitor accommodation component should require direct access from a paved road.
- e) Commercial development may locate as stand-alone uses or in conjunction with multi-parcel country residential uses as a planned, mixed use development.
- f) Parcels considered for Commercial uses shall not be located in a manner that unduly affects nearby existing residential uses.
- g) Commercial and supporting uses should be evaluated according to the following criteria:
 - the development should have direct access from an existing public road
 - the use should be in accordance with the water, sewer and stormwater management, ecological, and viewscape policies.

7.4 TRANSPORTATION POLICY

Introduction

The intent of this policy is to minimize fragmentation of the rural landscape through excessive road construction in the Cypress Fringe Plan area. Roads are a key disruption of existing wildlife habit that should be minimized if at all possible. They are also a significant expense that the County should not bear unless it serves the greater public.

Policies

- a) The County shall minimize the construction of new roads on County road rights of way within the Plan area.
- b) Subdivision applications in the A-2 District requiring road construction shall be evaluated as to their location respecting any requirement for new public road construction.
- c) Applications for subdivision or development in the A-2 District should require minimal road construction as part of the County approval criteria.
- d) The developer shall pay for the full cost of road construction to County standards where subdivision and development approvals require construction of new roads either along County rights of way or as a forced road.
- e) New subdivision or development districts shall be located adjacent to an existing road. Internal road construction for new subdivisions shall be to County standards (7 metre top with an oil base course construction within a 20 metre right of way).
- f) The County shall request that road development for oil and gas exploration be minimized. Where temporary roads are developed for oil and gas development, the County shall request that the roadbed be returned to the pre-development state as soon as possible.
- g) Excessive cuts and fills should be discouraged. Roads in excess of 10% slope shall not be permitted.
- h) The road cross section is shown in the following illustration. Water should drain into roadside ditches or swales, with check dams where stormwater velocities are expected to exceed 1.5 m/s. The use of curbs, raised drain inlets and other raised elements should be avoided as they may interfere with snow clearing.
- i) Internal roads with rectilinear and grid road systems are not compatible with the intent of the Plan. Curvilinear roads and roads that conform to the natural landform of the site are encouraged.
- j) All roads must be designed to provide adequate sight distance for the design speed.

7.5 WATER, SEWER AND STORMWATER MANAGEMENT POLICY

Introduction

The intent of this policy is to provide for piped water and sewer services where required by smaller parcels and higher development densities. A higher degree of responsibility will be placed on future rural residential condominium associations to ensure due diligence in the maintenance of safe and environmentally sound practices.

Policies

- a) Where parcels to be created are less than 0.404 hectares (1 ac) in size, or where intensive commercial development is proposed, applications for subdivision or development shall require a piped water system and a piped sewage disposal system as approved under Provincial requirements.
- b) Sufficient, long term quantities of potable surface or groundwater water shall be proven to be available for future Plan area developments at the time of subdivision approval.
- c) Trucked-in water shall not be permitted for multi-parcel country residential or other significant developments in the Plan area serving dwellings or visitor accommodation uses.
- d) Sufficient storage or pressure for fire flows shall be provided. Where site conditions do not permit on-site fire flows to be developed, alternative methods of fire fighting capacity shall be identified to the satisfaction of the County.
- e) Slopes greater than 15% shall not be considered for subdivision or development. The applicant shall prepare a slope analysis during the tentative plan stage.
- f) The applicant shall establish both temporary and permanent measures of erosion control as identified in the stormwater management guidelines (section 8.2) of this document.

7.6 ECOLOGICAL POLICIES

Introduction

The intent of this policy is to identify and respect the environmentally sensitive character of the Plan area both on a regional and site-specific scale. The Plan area contains many periodic drainages and water bodies that are ecologically important but may have been treated in the past as nuisances or ignored at best. The confluence of the montane forests, a relatively intact native rangeland, and the presence of many listed species defines the provincial and national importance of the Cypress Hills and its fringe area. This requires due diligence on the part of the County and developer to create new development in a way that respects the ecological integrity of the Plan area.

Policies

- a) Every Land Use Amendment application shall be accompanied by an Ecological Review as outlined in the Ecological Review guidelines of this Plan.
- b) The review shall be prepared by a qualified individual or firm and shall identify ecological issues and measures to address any significant problems.
- c) Disturbance of existing water bodies shall be discouraged. All development shall maintain a setback from periodic or permanent water bodies as outlined in the Ecological Review guidelines of this Plan.
- d) Applications for a significant development area shall maintain a minimum 60 metre setback from the high water mark of permanent water bodies (e.g., lakes and creeks) and/or periodic water bodies (e.g., ephemeral ponds and creeks), and 100 metres from those areas identified in the EIA section of this policy. The setback shall remain unaltered by development or activities associated with the development.
- e) Land suitable for Environmental Reserve (ER) may be identified at the subdivision application stage and be taken as Environmental Reserve on its own, a Environmental Reserve easement or as a conservation easement when part of a more comprehensive agreement covering a significant part of the original parcel. Development buffers required under this Plan may include ER.

7.7 VIEWSCAPE POLICY

Introduction

The intent of this policy is to recognize the sensitivity of humans to the encroachment of new development on a viewscape that holds historical and emotional significance for Cypress Hills Park visitors and rural residential neighbours. At the same time, the acceptable amount of view encroachment by new development should be balanced with the fact that a developer who meets all other criteria may propose development that cannot always avoid being viewed from some vantage point to some degree. The acceptable limits of that encroachment is based on the local community standard and cannot be pre-judged in advance in most cases. However, the mechanism that is used to evaluate the location and amount of visibility is identified in the policies and guidelines of this Plan.

Policies

- a) Applications for a significant development area that are identified within the viewscape mapping as identified in Figures 8 and 9 of this Plan, shall be subject to a Viewscape Review and subsequent followed-up site inspection with the County prior to consideration by the Approving Authority.
- b) The County may require other areas not identified on Maps 8 or 9 to be subject of a Viewscape Review where there is, in the opinion of the County, potential for the development to have an undue presence from the specified viewpoints.
- c) The viewscape review shall include the requirement to provide photographs of selected viewpoints identifying the land subject to the application. In addition, the site shall be marked by an aerial marker buoys at an elevation of 10 metres above the average grade level of the building site and located where the majority of the development is proposed and where the highest profile development is proposed to be subdivided.
- d) The County may request a Viewscape Impact Assessment for right of way applications for transmission power lines or other major infrastructure accompanied by actions to mitigate affected views.

8. PLAN IMPLEMENTATION

8.1 HOW TO USE THIS SECTION

This section of the Plan directs the County and applicants for re-classification, subdivision and development to undertake more specific actions that are required to ensure the area develops as intended by the Plan. While this section should be followed closely at the Land Use Amendment stage, the County may exercise some flexibility at the subdivision or development permit stage respecting site-specific considerations, provided that the overall goals and objectives of the Plan are achieved.

8.2 PLAN REVIEW POLICIES

Introduction

The Plan provides conditions for development. The determination of how much development is appropriate will depend on the speed and scale of development under the Plan policies. As conditions change, the County has the opportunity to periodically review the Plan to make necessary revisions.

Policies

- a) This Plan shall be reviewed:
- at 5 year intervals or
 - when total development in the Plan area reaches 100 new dwelling and/or visitor accommodation units (whichever comes first) or
 - if new baseline information respecting the distribution or quality of better agricultural/range land and/or native rangeland becomes evident.

8.3 STORMWATER MANAGEMENT GUIDELINES

Introduction

The intent of this policy is to ensure that new development is constructed in a manner that is environmentally sound and follows best construction and management practices. The erodible nature of the local soils, large areas of steep slopes and sparse vegetative cover requires that special care be taken when developing rural residences, roads, parking lots and other large buildings. This includes construction practices as well as operational considerations.

Soil erosion and sedimentation pose a serious threat to water quality. Erosion is the washing away of soil by rain or other natural or man-made runoff. Sedimentation is the accumulation of soil and other matter washed into our waterways from the land.

When raindrops strike bare soil, large amounts of topsoil are washed downstream in storm water runoff. When land has been disturbed its erodibility greatly increases. As soil and other particles (construction related materials) are washed into streams, aquatic life dependent on clean water and gravel beds are severely stressed.

Erosion and sedimentation can also cause flooding, and nuisance problems for down-gradient property owners and on adjacent streets. Other problems resulting from sedimentation due to uncontrolled erosion include clogging of streams, storm drains and culverts; artificial siltation of reservoirs and other water bodies; as well as pollution of waterways and drinking water supplies.

In order to maximize the protection of water quality, control principles and practices must be implemented at all phases of the project. These include:

- Planning and design
- Construction - including erosion control and site management practices.
- Post construction

The following methods of erosion control address these distinct phases in greater detail.

Guidelines

8.3.1 Land Use Planning for Erosion Control

LAND USE HYDROLOGY

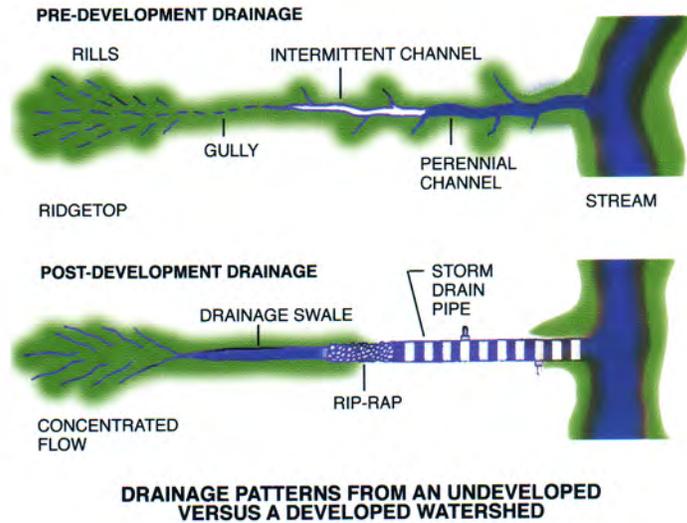
As flat lands are built out and as more development takes place on steep hillsides, the threat of erosion is ever increasing. In recent years, citizen groups and environmental organizations have recognized that the environmental losses and economic costs of development-related erosion are generally borne by the taxpayer rather than the polluter. Frequent litigation and more rigid enforcement of environmental regulations reflect decreasing tolerance for this discrepancy.

- A hydrologic and hydraulic study shall be required for the proposed development areas. The report shall address both existing and proposed storm water flows. Design shall be based on the rational method and account for a no-net-increase in storm water runoff from existing to proposed conditions. Hydrologic deviation from existing conditions shall be minimized. Runoff shall not be diverted to increase net flows to an existing tributary area without sufficient mitigation measures.

LAND USE AND EXISTING VEGETATIVE COVER

When a site is prepared for construction, clearing and grading eliminates vegetation and smoothes over the depressions and gullies that are part of the natural landscape. In an altered landscape, stream flows are delivered to receiving waters at a volume, velocity and pollutant concentration (especially sediment) dramatically greater than would occur in the natural environment. Flows in a developed watershed encounter little or no surface flow infiltration or pollutant filtration. Instead they travel quickly and directly to storm drain collectors, and then discharge into streams with equally large volumes and velocities. Clearing and grading practices upstream therefore increase the potential for erosion in down gradient property areas.

- Minimum-disturbance activities (such as preservation of vegetation and grade) are preferable to structural control measures because they protect and preserve the natural drainage system. Natural drainage is the most effective means of filtering sediment and pollution and regulating the volume of runoff from land surfaces to adjacent streams. In addition, preservation and minimum-disturbance activities are more cost effective than re-vegetation practices or structural controls, especially over the long term.



- a) Swales and drainage channels shall maintain a grade below scour velocity of the in-situ soil. Establishing both temporary and permanent measures of erosion control within such channels are essential.
- b) Development in or near natural waterways or steep slopes has the greatest potential for causing erosion. As mentioned in the previous paragraph it is especially important to maintain vegetative cover at stream banks and surface water locations. This applies to both permanent and seasonal water bodies.
- c) Slopes greater than 15% shall be considered undevelopable as the disturbance of said slopes represents a significant soil erosion risk.

LAND USE POST-CONSTRUCTION

- d) Land use planning shall take post-construction control into account with conditions set in place for post construction measures at the tentative plan stage. Examples of post construction control include filters placed in storm water catchbasins, establishing a maintenance district for long term maintenance of erosion control structures, and signage to inform the public that dumping in drainage structure is polluting downstream.

8.3.2 Erosion Control Methods

The following methods of erosion control cover both temporary and permanent management practices for the reduction of erosion and sedimentation. Please see “Stormwater Management Guidelines”, 1999, Alberta Environmental Protection for further detail.

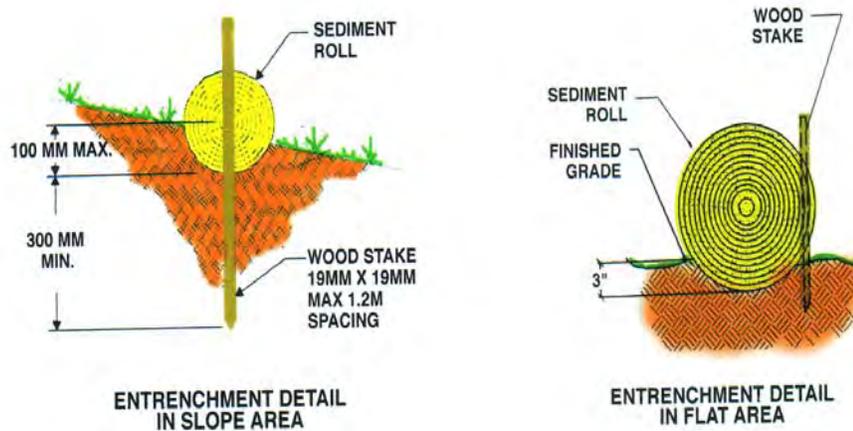
PRESERVATION OF EXISTING VEGETATION

- a) Protection of plants and trees in any area subject to land-disturbing activities is beneficial and should be attempted whenever possible. Existing vegetation serves as an effective form of erosion and sediment control, and provides watershed protection, landscape beautification, dust control, pollution control, noise reduction, and shade cover.
- b) Slope grading - Roughening and terracing are techniques for creating unevenness on bare soil by creating furrows across slopes, creating stair-steps, or by tracking the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into soil. Slopes over 15% are not considered developable.
- a) Temporary seeding and mulching - The purpose of temporary vegetative protection is to reduce erosion by establishing quick growing plants to stabilize disturbed areas which will not have permanent landscaping installed for a period of time or which may be disturbed once again at a later date. This is generally inexpensive and easy to do.
- b) Permanent seeding and mulching - The purpose of permanent seeding and planting is to establish a permanent perennial vegetative cover on areas that have been disturbed by construction. The establishment of permanent vegetation is beneficial for long term aesthetics, reduces erosion by slowing runoff velocities, enhances infiltration and transpiration, traps sediment and other particulates, protects soil from rain impact, and provides habitat for wildlife.
- c) Fibre rolls - Fibre rolls, composed of bio-degradable fibres stuffed in a photo-degradable open weave netting, are designed to reduce sediment runoff from disturbed soils into the storm drain system or watercourses. Fibre rolls are porous and allow water to filter through fibres and trap sediment, increase filtration rates, slow runoff and reduce sheet and rill erosion.

- d) Temporary stream crossing - A temporary stream crossing is a bridge or culvert placed across a waterway to allow vehicles to cross during construction without entering the water. This structure protects sensitive areas and eliminates erosion caused by vehicles.
- e) Check dam - A check dam is a small, temporary dam constructed of rocks, logs/timbers or gravel/sand bags and placed across a natural or man-made channel or drainage ditch. By dissipating flow velocity, check dams reduce natural drainage ditch erosion caused by storm water runoff. Check dams are often used as temporary control measures while a channel is being permanently lined with vegetation or other materials.
- f) Sand/gravel bag barrier - A temporary berm of stacked sand or gravel bags, installed along a level contour to detain sediment-laden runoff from disturbed areas, retains the sediment, and releases the water as sheet flow. Sandbags can also be used as check dams in small ditches.
- g) Storm drain inlet protection - Temporary devices constructed around storm drains improve the quality of water being discharged to inlets or catch basins by ponding sediment-laden runoff and increasing settling time. Appropriate for small drainage areas only (0.4 ha or less).
- h) Sediment basin - A sediment basin is a controlled water release structure, formed by excavation or by construction of an earthen embankment across a waterway or low drainage area. Sediment basins collect and temporarily detain storm water runoff to provide ample settling time before runoff is discharged.
- i) Catch basin inlet filter - temporary inlet filter lowered into catch basins and held in place by the grate. Designed to improve the quality of the water being discharged to inlets or catchbasins by filtering silt and sediment from runoff.

8.3.3 Soil Types And Recommendations

Soil type in the areas proposed for development consist mainly of dark brown chernozemic soil (4" –6") underlain by a solonetzic layer with particle sizes in the range of 0.02 mm. These types of soil are susceptible to erosion and have a settling velocity as low as 0.001 feet per second (fps).



Proposed channel velocities should be kept below 1.5 m/s. Sediment basins can be sized using the rational method as outlined in Section 3.0 of the City of Calgary 'Stormwater Management & Design Manual' (December 2000), and as outlined below. Surface area for sediment basins should be sized according to:

$$as = 1.2q/vs$$

Where:

as = surface area of the basin with a 2-foot minimum depth

q = flow as calculated below

vs = settling velocity (fps)

The rational method is based upon the following formula:

$$Q = 2.78 CiA$$

Where:

Q = peak runoff rate (L/s)

2.78 = constant

C = runoff coefficient

i = intensity of the rainfall (mm/hr) for a storm duration equal to t_c

A = area of the drainage basin (ha)

t_c = time of concentration for the basin (min.)

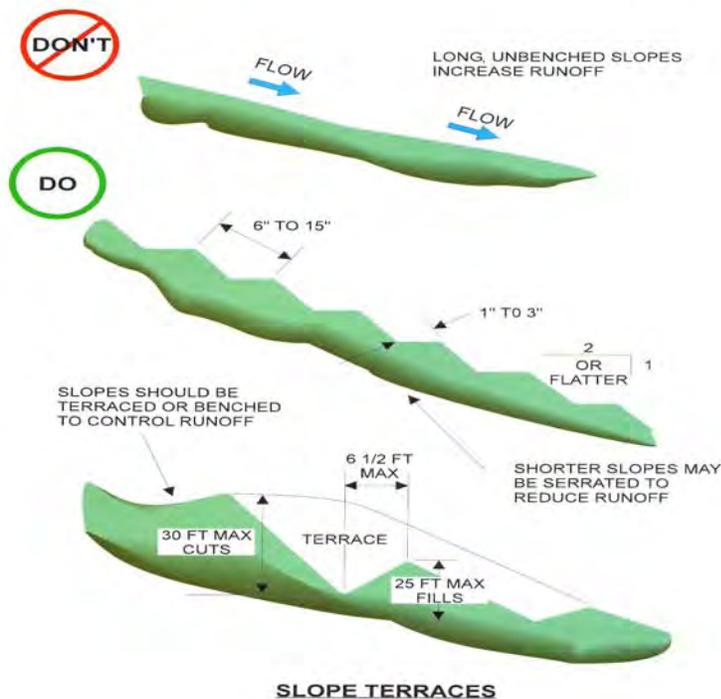
The intensity (i) can be derived from the following formula, or from Figure 3.2 from the December 2000 City of Calgary publication.

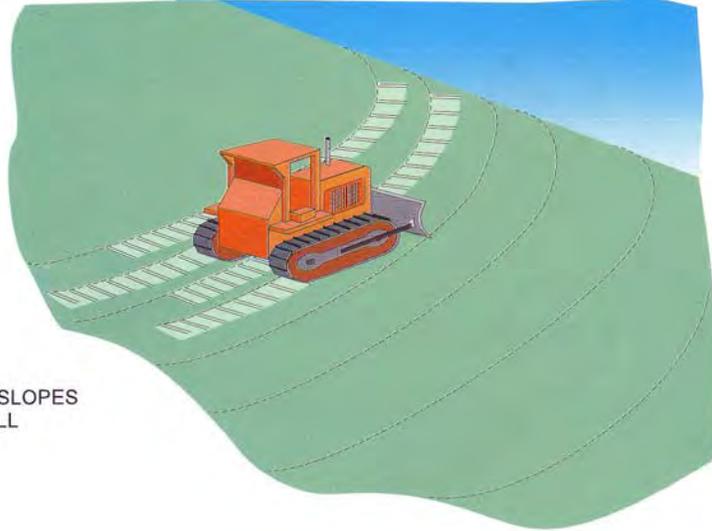
$$i = 1651/(t_c + 10) \quad (\text{mm/hr})$$

The following guidelines establish “rule of thumb” applications for erosion control measures. These guidelines are best suited for multi-parcel country residential development and may require modification based on proposed conditions. Consultation of a professional and adherence to provincial regulations is mandatory for the successful application of the following guidelines.

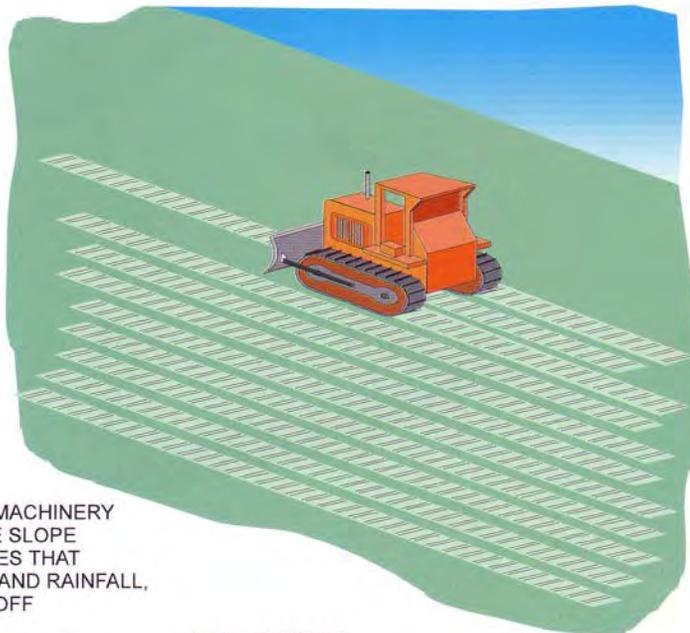
The following guidelines establish “rule of thumb” applications for erosion control measures. These guidelines are best suited for multi-parcel country residential development and may require modification based on proposed conditions. Consultation of a professional and adherence to provincial regulations is mandatory for the successful application of the following guidelines.

- a) In general all construction slopes 2:1 or flatter shall be slope-graded, terraced or benched at 150mm to 350mm (6” to 15”) on-centre with a rise/fall of 25 mm to 75mm (1” to 3”) between benches as shown in the figure below. Slopes less than 5% can be tracked with machinery up and down slope. Slopes greater than 2:1 are not anticipated and require special treatment.





DO NOT TRACK SLOPES
ACROSS THE HILL

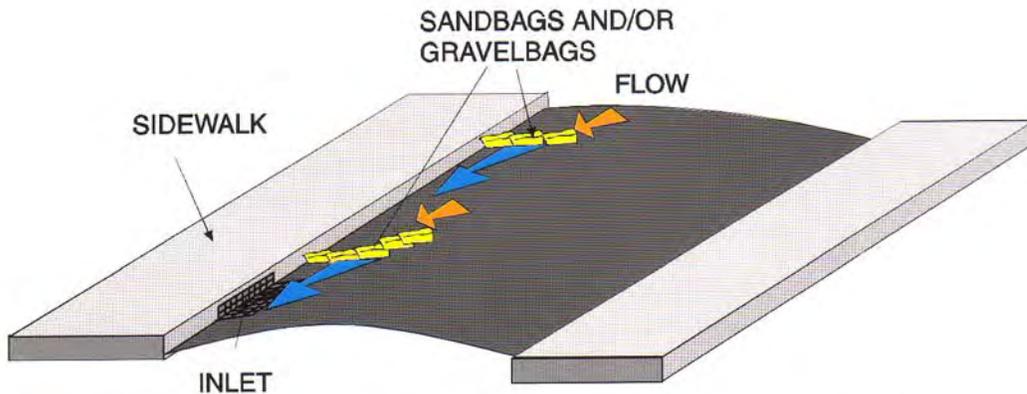


"TRACKING" WITH MACHINERY
UP AND DOWN THE SLOPE
PROVIDES GROOVES THAT
WILL CATCH SEED AND RAINFALL,
AND REDUCE RUNOFF

TRACKING

- b) As an alternative to slope grading, short slopes and slopes flatter than 3:1 can be treated with fiber rolls at 3.0m intervals.
- c) All exposed soils shall be treated with temporary seed or mulch until permanent landscaping is established. An appropriate mix must be approved prior to application.

- d) Check dams shall be placed in all open channels and drain 4ha or less at intervals of 15 metres. In addition, any channel where stormwater velocities are expected to exceed 1.5m/s must have check dams.
- e) Gravel bags shall be placed on all roads (paved or unpaved) adjacent to exposed or disturbed soils. Bags shall be placed at 10m interval and configured as shown below:



SAND OR GRAVEL BAGS (PREFERRED) USED IN ROADWAYS SERVE TO DIVERT FLOW, SLOW FLOW VELOCITY, AND POND AND FILTER RUNOFF.

- f) All storm drain inlets draining disturbed areas shall receive inlet protection in accordance with this guideline until permanent landscaping is established.

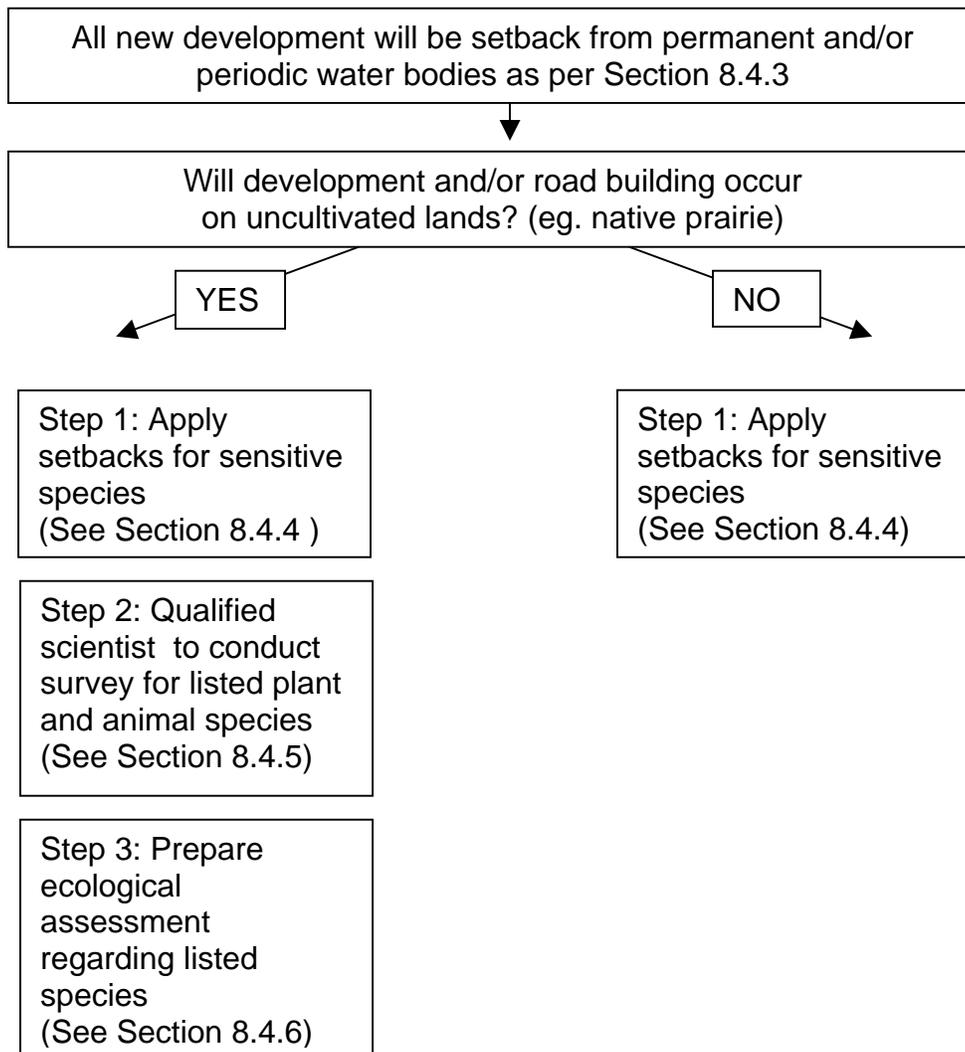
8.4 ECOLOGICAL REVIEW GUIDELINES

Introduction

To safeguard sensitive ecological resources in the Plan area, particularly listed plant and animal species and their habitats, an ecological review process has been developed. If a significant development area is proposed on uncultivated lands (e.g., native prairie, montane forests), as indicated by airphotos prior to 2002, then an environmental assessment is required.

Guidelines

8.3.2 Ecological Review Process



8.4.3 Setbacks from Water Bodies

Applications for subdivision or development of a significant development area shall maintain a minimum 60 metre setback from the high water mark of permanent water bodies (e.g., lakes and creeks) and/or periodic water bodies (e.g., ephemeral ponds and creeks), and 100 metres from those hosting populations of Northern Leopard Frogs (*Rana pipiens*), a sensitive at-risk species in Alberta.

The setback shall remain unaltered by development or activities associated with the development.

8.4.4 Setbacks for Sensitive Species

These guidelines for sensitive species setbacks have been adapted from *Recommended Land Use Guidelines For Protection Of Selected Wildlife Species And Habitat Within Grasslands and Parkland Natural Regions Of Alberta (2001)*, prepared by the Government of Alberta.

The Government of Alberta, in Medicine Hat, maintains a Biodiversity/Species Observation Database (BSOD) that includes map locations of key habitat features associated with the species listed below.

Species	Key Habitat Feature	Setback distance for development
Ord's Kangaroo Rat	Den	100m
Swift Fox	Den	500m
Northern Leopard Frog	Ponds	100m
Short-horned Lizard	Suitable habitat	100m
Burrowing Owl	Nest Site	500m
Ferruginous Hawk	Nest Site	1000m
Long-Billed Curlew	Nest Site	200m
Piping Plover	High Water Mark	200m
Sage Grouse	Lek	1000m
Sage Thrasher	Nest Site	200m

Sharp-tailed Grouse	Lek	1000m
Short-eared Owl	Nest Site	400m
Sprague's Pipit	Nest Site	100m

8.4.5 Survey for Listed Plant and Animal Species

Listed species are defined as those species that occur on any of the lists below. The most current version of the lists shall be used:

- nationally listed as *endangered*, *threatened*, or of *special concern* by the Committee on the Status of Endangered Species in Canada
- provincially listed as *at risk*, *may be a risk*, or *sensitive* by Alberta Sustainable Resource Development, and/or endangered or threatened under the Alberta Wildlife Act
- provincially listed as *track* or *watch* by Alberta Natural Heritage Information Centre

Many of the listed species in the study area appear on more than one of the above lists.

8.4.6 Ecological Assessment for Listed Species

If development is proposed to occur on uncultivated land (e.g., native prairie), then the following information, in report format, is required, prepared by a qualified professional scientist.

1. Statement of the professional qualifications of the scientist.
2. Description of development and its associated activities.
3. Results of survey regarding listed plant and animals species.
4. Description of potential impacts of the proposed development, and associated activities, to listed animal species and rare plants, and their habitat.
5. Analysis of the significance of the impacts.
6. Description of impact avoidance and/or mitigation measures.
7. Description of proposed monitoring plans to assess the effectiveness of the mitigative measures.

8.4.7 Federal Tax Receipt Information for Gifts to the Crown

If a landowner places a conservation easement on his or her land, the following information may be relevant for those landowners wishing to enter into a conservation easement.

Canada's Minister of Environment in 1995 established a national process and framework for the certification of ecologically sensitive lands. Landowners in Canada are able to receive federal and provincial tax relief for protecting ecologically sensitive lands (Environment Canada 2000). This recognizes that the "best use" for some land is to leave it in an undeveloped state.

To qualify as ecologically sensitive lands under the federal program, lands must meet specific ecological criteria. Qualified lands receive a *Certificate for Donation of Ecologically Sensitive Land* (DOE 95-11), with respect to the Income Tax Act of Canada. Conservation covenants and easements are often placed on lands "donated" (i.e. transferred) under the program to ensure ecological values are maintained. Normally, the original owner still legally owns the land, but with conservation clauses placed on the title.

In most all cases, Environmentally Significant Areas (ESAs) located in the prairie region of Alberta qualify as ecologically sensitive lands, particularly if they host native grasslands and listed species. Within the study area, there are four ESAs, which cover most of the Plan area.

- Cypress Hills Nationally Significant Site
- Eagle Butte Provincially Significant Site
- Manyberries Creek Badlands Provincially Significant Site
- Middle Creek Regionally Significant Site

Most of the private lands within the Plan area that have not been cultivated, qualify as ecologically sensitive lands, with respect to the Income Tax Act of Canada.

8.5 WILDFIRE MANAGEMENT GUIDELINES (Fig. 18)

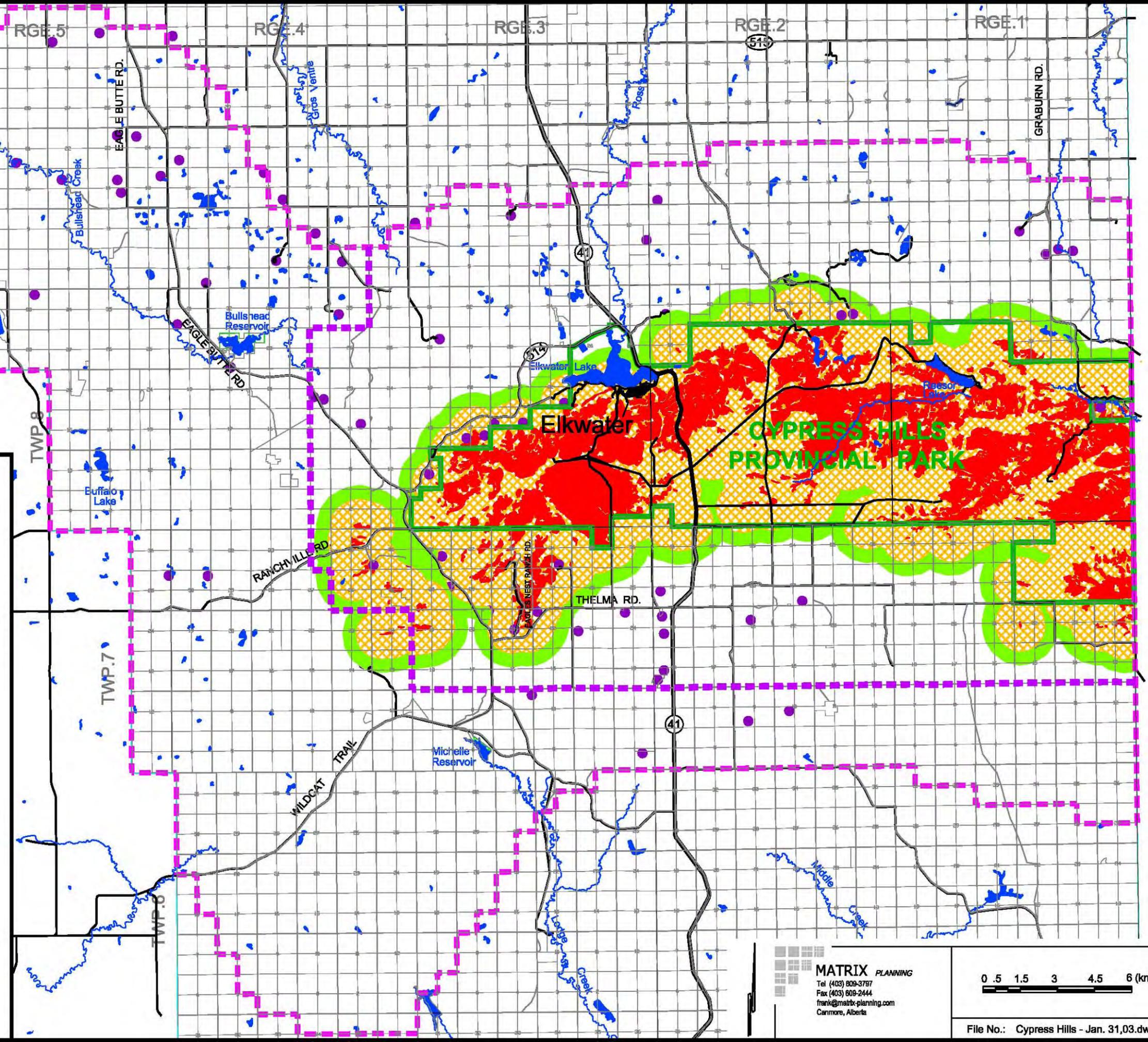
Introduction

The intent of these guidelines is to reduce the fire risk of all new development in the Plan area regardless of the land use designation applied to the land. The wildfire risk in the Plan area is variable from place to place and as such, the application of the guidelines may be relaxed if the County is satisfied that the development meets the purpose and intent of the guidelines.

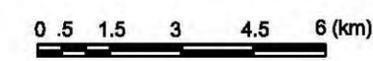
**Fig.#18
DEVELOPMENT / WILDFIRE
POLICY ZONES**

**CYPRESS HILLS
FRINGE AREA STRUCTURE PLAN**

- LEGEND**
- Plan Area Boundary 
 - Secondary Road 
 - Paved Highway 
 - Inner Fringe 
 - Hazard Stand 
 - Development Zone 1.0km 
 - Development Zone 1.5km 
 - Structure Location 



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Using established hazard models and predicted fire behavior data, two development zones have been developed. Specific *FireSmart* development guidelines have been assigned for each zone to reduce the risk of wildfire to development and the risk of structural fire to the wildland. High risk tree stands for development have been identified in earlier analysis. Using the predicted wildfire intensity, rate of spread, and spotting distance from the maximum expected values, Development Zone 1 was identified as the area within 1.0 and 1.5 km of all hazard stands. All other areas within the study area have been identified as Development Zone 2 and have been assigned less stringent *FireSmart* development guidelines.

The following guidelines are applicable to all development permit applications in the Plan area.

8.5.1 Development Zone 1 Guidelines (within 1.5km of hazard stands)

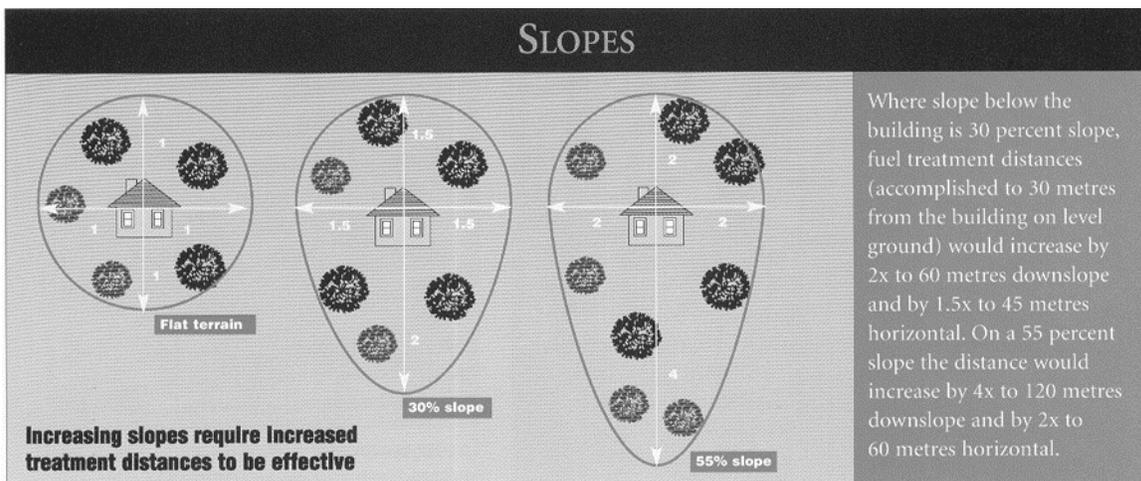
- a) The following guidelines should be applied to all developments within Development Zone 1.
- b) Guidelines for development within that portion of Development Zone 1 between 1km and 1.5 km of hazard stands may be relaxed by the Approving Authority where the wildfire risk is considered by the County to be low due to site-specific conditions and/or where proposed structures have otherwise substantively complied with the guidelines.

VEGETATION GUIDELINES

- a) No coniferous trees shall be allowed within 5 metres of structures.
- b) Within 10 metres from the structure (30 m if slope below the structure $\geq 30\%$):
 - all understory and overstory trees should be thinned to achieve a minimum of 5 metres between the crowns.
 - all ladder fuels should be pruned a minimum of 2 metres from ground level on all residual trees.
 - all dead and down vegetative debris should be removed on an annual basis.
 - a non-combustible, maintained and/or irrigated, surface cover shall be maintained. All grasses should be irrigated and mowed to less than 10 cm.

- c) Within 10-30 metres from the structure (2 to 4 times greater downslope depending on slope - see Fuel Modification Dimensions Figure below for details):
- all understory and overstory trees should be thinned to achieve a minimum of 3 metres between the crowns.
 - All ladder fuels should be pruned a minimum of 2 metres from ground level on all residual trees.
 - All dead and down vegetative debris should be removed on an annual basis.

Fuel Modification Dimensions



*From FireSmart Protecting Your Community from Wildfire (PIP, 1999)

STRUCTURAL GUIDELINES

- d) Roofing material must meet or exceed a Class A ULC rating.
- e) Roofs and gutters should be cleared annually of combustible debris buildup.
- f) Exterior finish must be non-combustible material (metal, brick, stucco, rock, cement shingle, or other fire retardant material).
- g) Decks and openings must be skirted with 12 millimetre exterior grade plywood or screened with 3 millimetre wire mesh to stop the entry of fire or airborne firebrands under or into the structure. All mobile homes must be skirted.

- h) Chimneys used with solid or liquid-fueled devices must have approved spark arrestors made of wire mesh screen with less than 12 millimetre openings.
- i) Combustible material piles (firewood, lumber, etc.) should not be placed within 10 m of a structure.
- j) Structures must be setback from slopes exceeding 15% a minimum of 10 metres.

INFRASTRUCTURE GUIDELINES

- k) Dedicated fire suppression water supply must be provided using hydrant supply meeting Fire Underwriters Survey or NFPA 1231 standards or minimum 20,000 litre reservoir accessible by Fire Department trucks.
- l) Access to the development must be a minimum of 7.0 metres all-weather traveled-surface width with 4.5 metres vertical clearance and maximum 10% gradient.
- m) Dead-end roads longer than 90 metres should be provided with a turn-around at the terminus having no less than 36 metres outside diameter of traveled way and must be posted at the entrance as a no-through road.
- n) Dead-end roads greater than 400 metres in length must provide all-weather alternate emergency access with 4.7 metre minimum traveled-surface width and maximum 10% gradient.
- o) Bridges must be designed to support large fire suppression apparatus and must be clearly posted with load limits at the approaches to each end.
- p) Powerlines and rights of way should be tree-free or underground.
- q) Propane tanks should be surrounded by a minimum of 3 metres non-combustible surface cover and be located a minimum of 10 metres from the structure.

8.5.2 Development Zone 2 Guidelines (>1.5km from hazard stands)

- a) The following guidelines should be applied to all developments within Development Zone 2.

VEGETATION GUIDELINES

- b) No coniferous trees should be located within 5 metres of structures.
- c) Within 10m of the structure:
 - All dead and down vegetative debris should be removed on an annual basis.
 - A non-combustible, maintained and/or irrigated, surface cover should be maintained. All grasses should be irrigated and mowed to less than 10 cm.

STRUCTURAL GUIDELINES

- d) Roofing material must meet or exceed a Class C ULC rating.
- e) Combustible material piles (firewood, lumber, etc.) should not be placed within 10 m of the structure.
- f) Chimneys used with solid or liquid-fueled devices must have approved spark arrestors made of wire mesh screen with less than 12 millimetre openings.

INFRASTRUCTURE GUIDELINES

- g) Access to the development must be a minimum of 7.0 metres all-weather traveled-surface width with 4.5 metres vertical clearance and maximum 10% gradient.
- h) Dead-end roads longer than 90 metres should be provided with a turn-around at the terminus having no less than 36 metres outside diameter of traveled way and must be posted at the entrance as a no-through road.
- i) Dead-end roads greater than 400 metres in length must provide all-weather alternate emergency access with 4.7 metre minimum traveled-surface width and maximum 10% gradient.
- j) Bridges must be designed to support large fire suppression apparatus and must be clearly posted with load limits at the approaches to each end.
- k) Powerlines should be tree-free or underground.

- l) Propane tanks should be surrounded by a minimum of 3 metres non-combustible surface cover and be located a minimum of 10 metres from the structure.

8.6 SUBDIVISION AND DEVELOPMENT DESIGN GUIDELINES

Introduction

The intent of this guideline is to provide future development applicants with a set of criteria and guidelines to consider when designing rural residential or other development. Development needs to be sensitive to many site characteristics that could otherwise create inappropriate development and cause unwanted effects off the site. The design of subdivisions will require an interactive approach between the County and the developer to create a development that is sensitive to the values embodied in this Plan.

Guidelines

- a) Design of subdivisions shall adhere to the Subdivision Design guidelines in this Plan.
- b) Subdivision and development shall be designed based on the use of clusters in configurations that balances the minimization of affected site area with the sensitive location of units on the landscape.
- c) Breaking residential cluster design into several smaller clusters is preferred where it preserves existing vegetation, ecologically sensitive areas and respect contours of the land.

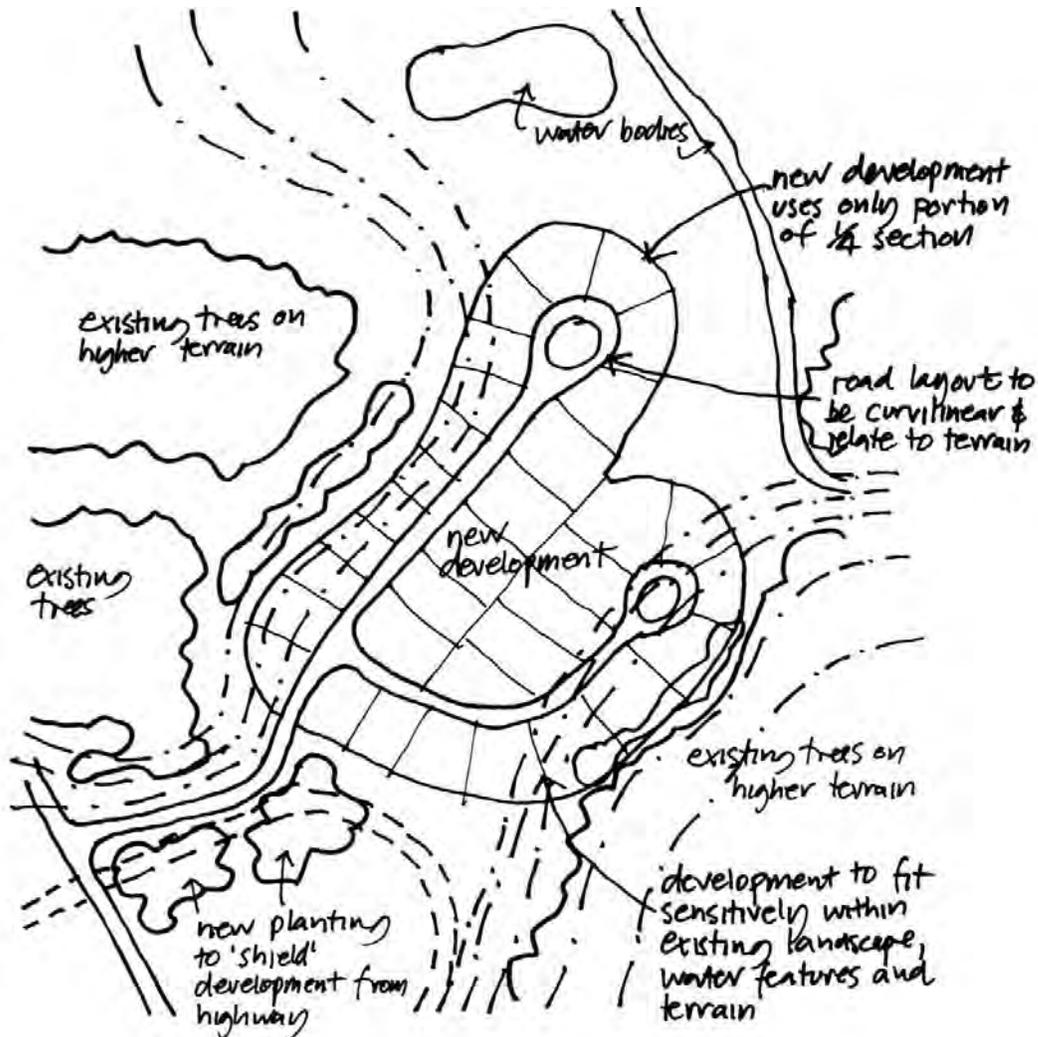


fig. cluster development considerations

- d) Where necessary, the location of communal water and sewer infrastructure on the site may be located off the area classified for development.
- e) Specifically, country residential subdivision and development permit applications shall incorporate cluster design to reduce the impact on:
- water bodies and other ecologically sensitive sites,
 - steep slopes approaching 15%,
 - better agricultural/rangeland wherever possible on the quarter,
 - protection of identified views and
 - consideration of existing views from neighbouring homesteads.
- f) The development of the site should, wherever possible, minimize the removal of trees and other vegetation wherever possible. Location of subdivisions at the edge of forested areas rather than within forested areas is preferred.

- g) Areas where development within forested areas is unavoidable, the development should maintain treed bands of at least 50 metres in width to reduce the potential for tree blowdown.
- h) Development should use lee slopes and existing tree cover to deflect prevailing winds.

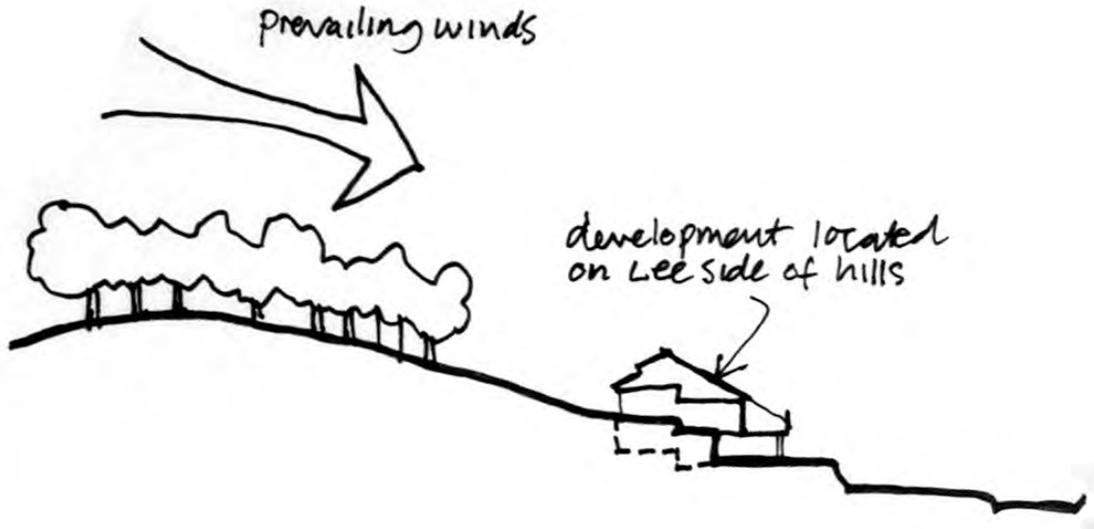


fig. develop on lee slopes

- i) Dwelling clusters or other structures on undulating terrain should have rooflines located below ridgelines and should, wherever possible, take advantage of terrain to minimize the view of the proposed development area from the main access road.

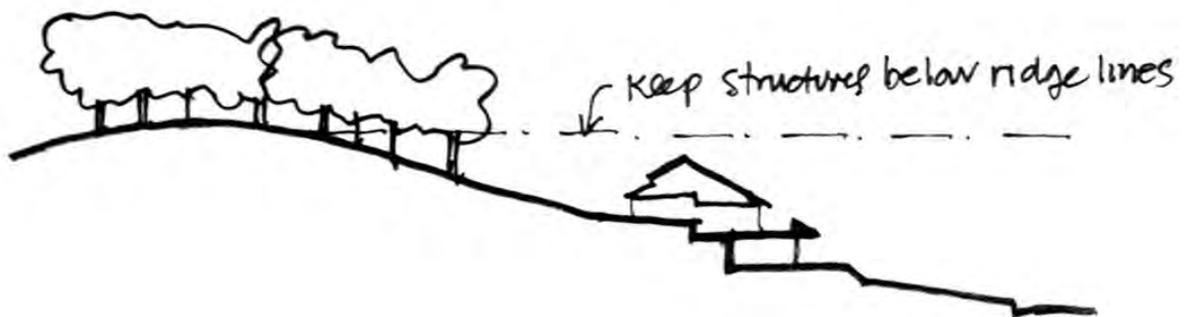


fig. rooflines below ridgelines

- j) Views of the development should be minimized from the main access road wherever possible. In addition, visibility from key viewpoints in Cypress Hills Provincial Park should be taken into account where required by the Viewscape Policy.

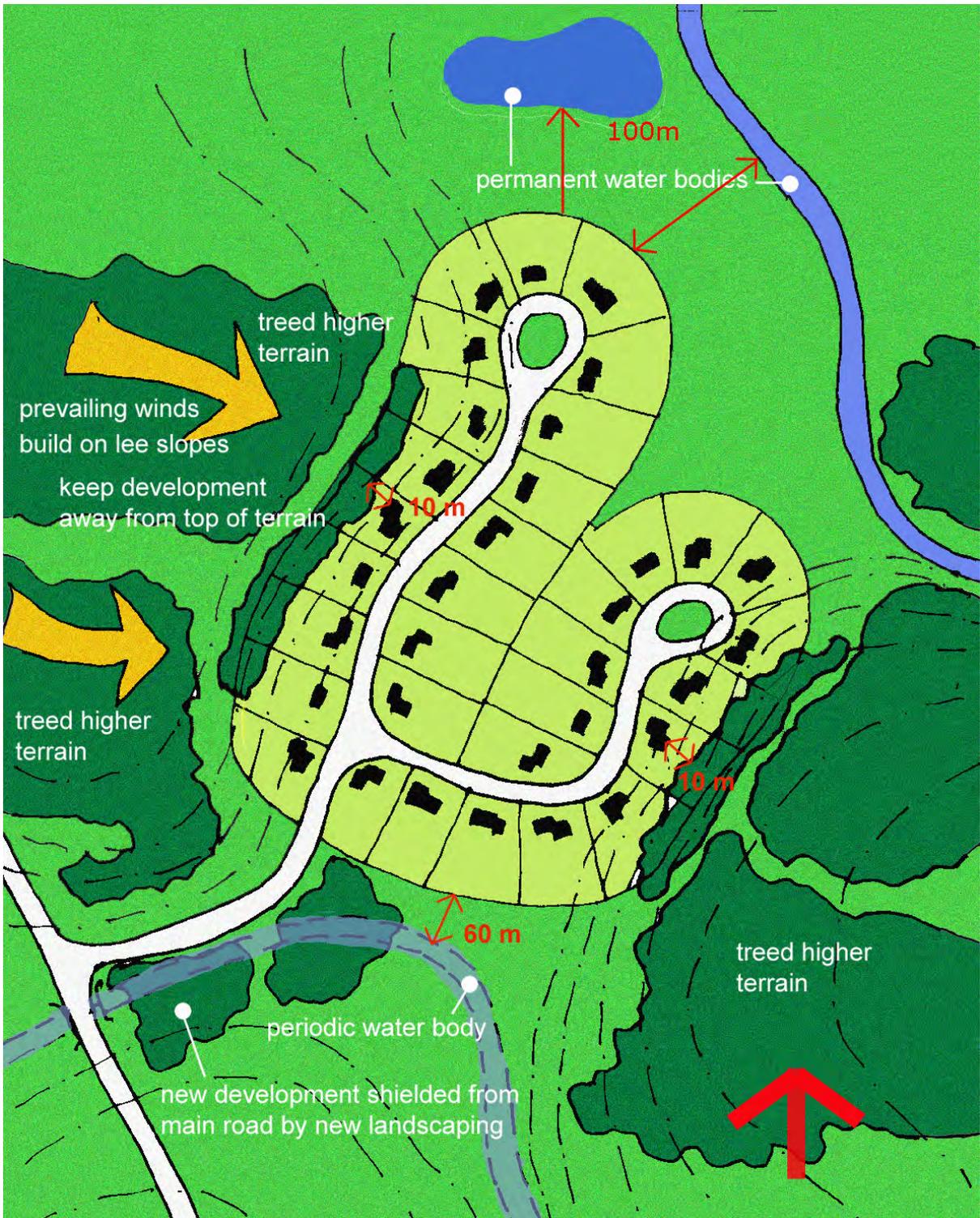


fig. summary of subdivision design guidelines

k) Visitor accommodation and other commercial development should consider the following guidelines :

- Buildings should appear relatively modest in size. Larger buildings will require breaking down into smaller related forms to reduce impact of massing.
- Buildings should be considered as a whole - not merely a front facade with bland sides and rear.
- Buildings on prominent sites (e.g. road corner, higher elevations, main entries to area) will require special attention to their massing and form.
- No buildings should be higher than 2 stories although one story within a roof utilizing dormer windows may be considered in cases of exceptional architectural merit.
- Reduce the mass of larger buildings using simple and traditional building forms. This might include use of dormers, porches, chimneys, and bay windows, etc.
- Large areas of glass are not considered appropriate either as part of the facade or a single sheet of glass in an opening. Instead separate windows and /or smaller panes are encouraged.
- Windows and their frames should not appear flush with the wall surface rather they should be clearly defined and distinct from the wall surface. Traditional windows using a casement, double hung are preferred over a more modern sliding or glass block.
- The design and layout must respect any existing unique views from nearby development.
- Each design is encouraged to incorporate multiple structures of different sizes and heights with a variety of setbacks to create elevational interest.
- Units should be laid out around courts to encourage pedestrian use wherever possible.



fig. visitor accommodation design considerations

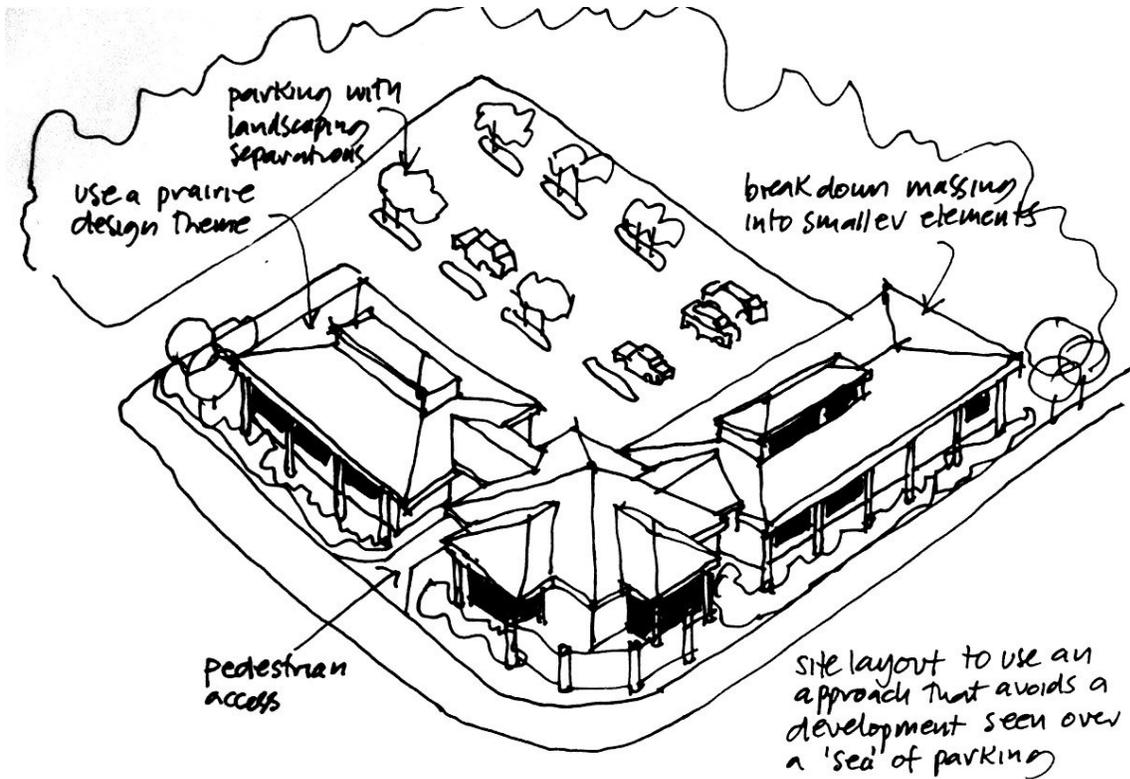


fig. commercial design considerations

APPENDIX A

**ENVIRONMENTAL LITERATURE CITATIONS AND
PERSONAL COMMUNICATIONS**

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APPENDIX B

APPLICANT INFORMATION REQUIREMENTS FOR LAND USE RE-CLASSIFICATION WITHIN THE CYPRESS FRINGE PLAN AREA

In addition to the information required for all County land use, subdivision and development permit approvals, the following information shall be supplied on all applications for land use re-classification within the Cypress Fringe Plan area.

1. A hydrologic and hydraulic study shall be required for the proposed development areas. The report shall address both existing and proposed storm water flows. Design shall be based on the rational method and account for a no net increase in storm water runoff from existing to proposed conditions.
2. Every Land Use Amendment application shall be accompanied by an Environmental Review as outlined in the Environmental Review guidelines of this Plan and under terms of reference approved by the County. The review shall be prepared by a qualified individual or firm and shall identify issues and mitigations to address those issues.
3. Applications for a Land Use Amendment that are identified within the viewscape mapping shown in Figures 8 and 9 of this Plan, shall be subject to a viewscape review by the applicant and a follow-up site inspection by the County prior to consideration by the Approving Authority. The viewscape review shall include the requirement to provide photographs from selected viewpoints identifying the land subject to the application. The site shall be marked by an aerial marker buoys at an elevation of 10 metres above the average grade level of the building site, located where the majority of the development is proposed.
4. The County may request a Viewscape Impact Assessment on applications for new power transmission line right-of-way(s), or other major infrastructure improvements.

APPENDIX C

MDP AMENDMENT

3.5 Cypress Hills Fringe Area Structure Plan

The area affected by the Cypress Hills Fringe Area Structure Plan is shown in Figure 5. It is intended to provide for development in the Plan area in a manner that respects the values that created Cypress Hills Provincial Park and respects the heritage and ecological landscape of the Plan area.

The County recognizes the unique nature of the Area Structure Plan area and as such deems it advisable to create policies that are particular to that area and provide resources to administer the policies for the long term. Subdivision and Development within the Cypress Hills Fringe Area Structure Plan area shall be in conformity with the Plan and guided by the provisions therein.

APPENDIX D

CYPRESS HILLS FRINGE DISTRICT (CHF)

THE PURPOSE OF THIS DISTRICT IS TO REGULATE THE SUBDIVISION AND DEVELOPMENT OF CLUSTERED COUNTRY RESIDENTIAL AND SPECIFIED COMMERCIAL, INCLUDING VISITOR ACCOMMODATION USES IN CONFORMITY WITH THE POLICIES, SPIRIT AND INTENT OF THE CYPRESS HILLS FRINGE AREA STRUCTURE PLAN.

A. PERMITTED USES

Accessory Buildings and uses
Public parks and playgrounds
Single dwelling unit

B. CLASS 1 DISCRETIONARY USES

Private signs
Public and quasi public buildings and uses

C. CLASS 2 DISCRETIONARY USES

Bed and Breakfast facility
commercial uses in support of the principal residential use
Family Care Home
Home occupations

B. MINIMUM PARCEL AREA

0.202 ha. (0.5 ac.)

C. MINIMUM YARD REQUIREMENTS

FRONT	SIDE	FLANKAGE	REAR
*10 metres (33 feet)	5 metres (16 feet)	*10 metres (33 feet)	7 metres (23 feet)

* Minimum yard distance from subdivision streets or service roads. Setbacks from County roads shall be in compliance with Section 46 of the General Land Use Regulations.

D. MAXIMUM BUILDING HEIGHT

1. Visitor Accommodation uses - 12 metres (39 ft)
2. All other uses - 10 metres (30 ft)

G. MAXIMUM PARCEL SIZE

Parcels sizes in excess of 0.404 ha. (1 ac.). may be considered, but the total classified area within the quarter shall not occupy an area greater than 40 acres.

H. MAXIMUM SUBDIVISION DENSITY

1 parcel per 2.02 hectares (5 ac.) of area in title up to a maximum of 32 parcels per quarter

I. ACCESSORY BUILDING RESTRICTIONS

1. An accessory building shall have the same yard requirement as the principal building.
2. An accessory building shall be located at least 1.5 metres (5 feet) from a principal building.
3. An accessory building shall not exceed 6 metres (20 feet) in height.
4. An accessory building shall not exceed 110 m² (1,200 ft²) in area. The maximum floor area dedicated to accessory uses in both principal and accessory buildings shall be 223 m² (2400 ft²).
5. An accessory building shall not be used for living purposes.
6. An accessory building shall not be used for conducting of a business or commercial operation unless this operation is conducted in conjunction with an approved Home Occupation.

J. SITE RESTRICTIONS

1. In addition to the requirements of the General Land Use Regulations and Schedules, the following regulations shall apply:
2. For number of livestock allowed, see Section 48. Any offspring over the maximum number of approved animals shall be removed from the site within six months.

3. A development permit may be issued for the keeping of additional animals if the Council is of the opinion that it will not affect the amenities of the adjacent landowners.
4. Not more than three dogs excluding unweaned pups, shall be kept on a site.
5. Any dogs must be controlled so that they comply with the Dog Control By-law.

K. ON-SITE WATER SUPPLY

Sufficient on-site water supply capacity to service proposed parcels will be required to be provided with assurance of supply.

L. ON-SITE SEWAGE DISPOSAL

Piped sewage disposal systems required in accordance with Alberta Environment requirements.

M. SUBDIVISION DESIGN

1. Clustering of parcels shall be required in accordance with the requirements of Cypress Hills Fringe Area Structure Plan.
2. Site suitability criteria respecting subdivision design and parcel layout shall be in accordance with the Cypress Hills Fringe Area Structure Plan.
3. In addition to the regulations of this District, the County shall adhere to the policies and guidelines contained in the Cypress Hills Fringe Area Structure Plan.

(SEPARATE LUB SECTION)

NEW LAND USE BYLAW DEFINITIONS ADDED

“visitor accommodation” means a building or group of buildings not intended for residential use where sleeping facilities are provided for persons for periods of up to 31 days. Visitor accommodation may also contain recreational facilities, commercial uses and additional facilities including but not limited to eating establishments, drinking establishments, room service, meeting rooms, public convention rooms, and laundry service.

“commercial use in support of the principal visitor accommodation use” means a use that is subordinate to and supports the principal visitor accommodation use and users; is located on the same site as the principal use and may include, a retail store, a service station a restaurant or other similar use.

“commercial facility” means a building or group of buildings intended for the use of customers for retail sale or repair of goods or services or for assembly and limited term visitor accommodation as part of a commercial enterprise. This includes but is not limited to retail store, visitor accommodation, restaurant and leisure entertainment facilities.

"retail store" means a building where goods, wares, merchandise, substances, articles or things are stored, offered or kept for sale at retail prices and includes storage on or about the store premises of limited quantities of such goods, wares, merchandise, substances, articles or things sufficient only to service such store but does not include any retail outlet otherwise listed or defined in this By-law.