

BY-LAW NO. 23-94

COUNTY OF PARKLAND NO. 31

BEING A BY-LAW OF THE COUNTY OF PARKLAND NO. 31 FOR THE PURPOSE OF AMENDING THE BIG LAKE AREA STRUCTURE PLAN.

WHEREAS the County of Parkland No. 31 has adopted the Big Lake Area Structure Plan by By-law No. 17-91; and

WHEREAS the Big Lake Area Structure Plan has been established for the purpose of regulating and controlling the use and development of lands and buildings within the Big Lake area; and

WHEREAS the Council of the County of Parkland No. 31 deems it necessary, appropriate and in the public interest to make an amendment to the Big Lake Area Structure Plan to provide for piped water distribution and temporary water reservoirs with water supplied by truck haul.

NOW THEREFORE the Council of the County of Parkland No. 31 duly assembled and under authority of the Planning Act R.S.A. 1980 and amendments thereto, hereby enacts the following:

1. That By-law No. 17-91 being the By-law adopting the Big Lake Area Structure Plan is amended as follows:
  - a). Firstly, by deleting Section 4 in its entirety and replacing it with an amended Section 4, attached as Schedule "A"; and
  - b). Secondly, by re-designating all CRA #2 areas located east of Bevington Road on Figure 5. Future Land Use Concept, from a CRA #2 to CRA #1 designation as shown on Schedule "B"

READ A FIRST TIME THIS 1<sup>st</sup> DAY OF SEPTEMBER A.D., 1994.

READ A SECOND TIME THIS 20<sup>th</sup> DAY OF OCTOBER A.D., 1994.

READ A THIRD TIME AND FINALLY PASSED THIS 20<sup>th</sup> DAY OF October, A.D. 1994.



Reeve

SEAL



Municipal Secretary

- To encourage development to grow in a staged pattern that makes effective and economical use of existing and proposed services.
- To maintain a high environmental standard through the resolution that all future multi-parcel subdivision developments shall be required to tie into the regional sanitary trunk sewer line.
- *To overcome the concern about groundwater quality and quantity by requiring all future multi-parcel subdivision development to provide piped water distribution and temporary water reservoirs with water supplied by truck haul.*
- *To ensure public safety by requiring that developers provide for residential fire sprinklers in high density subdivision where the majority of lots are 0.4 ha (1.0 acres) or less.*

## 4.2 LAND USE PATTERNS

The Big Lake area will be a rural residential area with extensive tracts of open space to preserve the environmental quality and amenity of the area. In particular, the wetland waterfowl breeding habitat area at the west end of Big Lake will be protected.

Regarding the possible future development of a regional recreation trail system around Big Lake, this Plan anticipates that such a system would be most appropriately located within the land/water interface area adjacent to the perimeter of the Lake. Sufficient areas have been designated in this Plan as Wetland Conservation, or Environmentally Sensitive Lands to accommodate the development of a regional trail system, as well as any associated viewpoints or nature observation platforms.

A small commercial area will accommodate the demand for minor highway commercial and convenience servicing for area residences. An institutional area has been designated to meet the future demands for schools, community centres or religious institutions.

The existing tree farm/landscaping firm appears to be the only economically viable agricultural land use within the Plan area, developed as a primary income source. Its designations as a nonconforming land use will allow it to continue in its present location.

Agricultural land use has not been designated in this Plan. Land parcel sizes are too small to make farming economically viable as the primary source of income. There is only one farm assessment to a landholder of over 90 acres for > 41% rating. There is no CLI Class 1 agricultural land in the area. A small pocket of Class 2 land also is present. However, most of the land area is Class 3 or lower.

The land use patterns are shown on *Figure 5 - Future Land Use Concept*. The following chart quantifies the approximate land base of each land use. Acreages have been measured from a 1:8,000 scale map and should be considered approximate for general planning purposes only.

| Land Use                        | Acres        | Hectares     | %            |
|---------------------------------|--------------|--------------|--------------|
| Residential                     |              |              |              |
| #1 (includes % servicing)       | 752          | 304          | 18.7         |
| #2                              | 1020         | 413          | 25.3         |
| Highway Commercial              | 37           | 15           | .9           |
| Institutional                   | 9            | 4            | .2           |
| Recreational                    | 540          | 218          | 13.4         |
| Wetland Conservation            | 691          | 280          | 17.2         |
| Environmentally Sensitive Lands | 736          | 298          | 18.3         |
| Float (roads, etc.)             | 240          | 97           | 6.0          |
| <b>TOTAL</b>                    | <b>4,025</b> | <b>1,629</b> | <b>100.0</b> |

A. RESIDENTIAL LAND USE

Residential land use is proposed across the southern half of the Plan area. Consistent with the Regional Plan and the County General Plan this area will be country residential. *Since the quantity and quality of ground water for domestic water supply is questionable and inconsistent throughout the planning area, the domestic water supply shall be provided by piped water distribution system and temporary water reservoirs with water supply by truck haul. This method of water supply shall be utilized until such time as it is economically feasibility to construct a permanent water reservoir and a water distribution line in the area from the Parkland Water Line. All subdivisions must also develop a piped sanitary sewer system to hook into the Regional Sanitary Trunk Sewer Line to the north.*

*Two densities of rural residential are proposed for the area. Land located on Figure 5 labelled Country Residential Area #1 is considered the most desirable in terms of marketing and the amenity value for country residential. It lies adjacent to the City boundary with good existing access to the City. It lies close to Big Lake with excellent views out across the Lake from above the wooded lakeshore. The landscape is regularly interrupted by forested ravines running perpendicular to the Lake and the land is gently rolling with a number of mature woodlots. For the above reasons, this land is capable of sustaining a higher density of development while at the same time maintaining the environmental quality and attractiveness of the area. A minimum residential lot size of 0.5 acres and a maximum lot size of 3.0 acres has been recommended within the CRA #1 designation to allow for a density of residential development which most fully utilizes those valuable land resources located in close proximity to Big Lake. All of the Phase 1 area (Figure 6) has been designated CRA #1 in order to encourage development densities sufficient to warrant the establishment of a permanent water reservoir and piped water distribution line in the area.*

*The balance of future country residential subdivision/development within the Plan area, designated Country Residential Area #2, has a lot size range of 1.0 to 3.0 acres. The large minimum lot size was felt to be needed to allow for greater flexibility in house siting and to preserve the country amenity in areas without extensive tree cover or preserve edging (eg: the ravines).*

Municipal reserve should be taken as land dedication to protect significant lake viewpoints and to provide sites for active recreational pursuits and facilities due to the higher residential densities. Open space linkages for pedestrians from park areas into the environmentally sensitive lands must be designed into the subdivisions.

Noise attenuation is an issue for developments adjacent to Highway 16X and a combination of berming, fencing and vegetation is recommended in combination with a setback. The existing frontage road on the north side of 16X will be available for use as a setback provided all existing residence accesses are maintained. It is anticipated that this road will be eliminated as a through road in the long term.

#### B. ENVIRONMENTALLY SENSITIVE LANDS

Within the Plan area, the south shoreline of Big Lake below the 1:100 year floodplain and the treed bluff (including top of bank) rising abruptly off the shore has been identified as Environmentally Sensitive Lands.

All major ravine systems in the area have also been identified as environmentally sensitive because of their steep slopes, their role as intermittent drainage courses, and the potential for viewpoints/vistas.

The shoreline along the west side of the Lake and along Atim Creek has been identified as Environmentally Sensitive Lands to protect the natural drainage course along the creek and allow for an undisturbed natural lake shoreline. A setback of approximately 80 to 100 metres from the dike in the southwest corner of the Lake will ensure that any development or changes to the Wetland Conservation Area will not affect the shoreline character, either physically or visually.

There is a large environmentally sensitive area located at the mouth of Atim Creek. The creek's delta changes each spring with annual flooding. As well, there are a number of ponds of open water that need to be protected.

Environmentally Sensitive Lands will not be developed except for low impact developments such as recreational trails appropriately designed and constructed.

#### C. WETLAND CONSERVATION LAND USE

The intent of the Wetland Conservation Area is to maintain the wetland waterfowl breeding habitat that is recognized as provincially significant. The Area Structure Plan also recognizes that there may be land uses that, because of their season of operation or lack of infrastructure, are compatible with the intent of this area interest has been expressed by Alberta Forestry, Lands and Wildlife, Fish and Wildlife Division and Ducks Unlimited to improve the breeding habitat of the area through water management and controlled flooding.

The upcoming policy for the Management of Wetlands in the Settled Areas of Alberta will also reinforce the role of this area as a provincially significant and unique resource. It will also highlight the hydrological value of the area as well as reinforce the recreational and tourism values.

#### D. RECREATIONAL LAND USE

The Recreational Area is land above the 1:100 year floodplain characterized by bodies of open water with pockets of developable land on the higher areas. These areas are used to accommodate limited, low intensity development.

Recreational developments such as ski trail systems, golf course, potentially some campground development are all appropriate land uses of this area. Some discretionary residential could be permitted in support to the recreational uses. For example, a campground or a golf course may have an onsite caretaking residence.

Individual servicing is recommended for the area, if connecting to the regional sanitary trunk sewer line is not considered feasible by the County due to the scale of development.

E. HIGHWAY COMMERCIAL LAND USE

This small area of 37 acres (15 hectares) borders the highway interchange at Highway 60 and 16X and is designed to provide land for business servicing the traveling public, e.g. service station, restaurant or convenience store. A commercial business serving the area residents such as a general store would also be an acceptable highway commercial use within this designation.

F. INSTITUTIONAL LAND USE

The two institutional areas, located east and west respectively of Highway 60, are to be used for school and church activities. Other activities permissible in the two area would include community based activities such as social club/special interest group meetings.

### 4.3 CIRCULATION

The circulation pattern for the area is illustrated on *Figure 5 - Proposed Land Use Concept*.

Access to the Plan area is via Highway 16X from east to west and on Secondary Highway 794 from the north and via Highway 60 from the south.

Four new interchanges are planned for Highway 16X at the following locations: S.H. 794, Highway 60, 1 mile east of Highway 60 and 231 Street, at the eastern Plan area boundary. The "half diamond" interchange, 1 mile east of Highway 60 has been identified as possibly being required in the longer term. This need will have to be verified as the area develops and could possibly be deleted. Exact time lines have not been established for these projects by Alberta Transportation and Utilities, except for the S.H. 794 interchange which is the highest priority interchange and construction is expected to start in the next two or three years.

A service road to be established in the area of the Highway 60 interchange will provide access to the proposed Highway Commercial Land Use Area.

Internal access within the Plan area will be by means of an arterial roadway which will follow the Regional Sewer line in the west half of the Plan area and then curve south around a ravine and back to the quarter section line one half mile north of 16X which connects with Hillview Road. This arterial is anticipated to replace the existing services road along 16X, particularly in the western half of the area. Connection to the arterial will be made from the south on Highway 60 and from the interchange 1 mile east.

The west half of the arterial has been aligned on the quarter section line one half mile north of 16X to coincide with the future service road from the west. The arterial's eastern alignment and ultimate connection with Hillview Road (231 Street) as depicted in Figure 5 may be modified if feasible to allow for proper transportation linkages with arterial road alignments to the east.

The arterial road will be designed and constructed to County of Parkland road standards.

Collector roads developed at the more detailed stages of development will connect with the arterial road rather than the existing 118 Avenue service road, unless they are using the service road as part of a closed system.

## 4.4 UTILITY SERVICING

*Figure 6 - Utility Servicing and Phasing Plan* graphically depicts the recommended servicing systems.

### A. STORM DRAINAGE SYSTEM

The existing Big Lake area drainage is collected by the Sturgeon River sub-basin which ultimately joins the North Saskatchewan River basin downstream of Edmonton. The majority of surface drainage in this area is provided by roadside ditches, culverts and by natural watercourses and creeks.

Alberta Environment Stormwater Management Guidelines require that all runoff from new developed areas be controlled to predevelopment rates unless the receiving watercourse is considered a sufficient outlet. Control of runoff rates can be provided through the provision of storage facilities to temporarily or permanently store the water which is in excess of the downstream conveyance capacity.

Areas draining into the Big Lake basin do require runoff controls, as the Lake is not considered a sufficient outlet. These stormwater management facilities must control runoff to predevelopment rates for events with a return period of 100 years and less.

Stormwater facilities may be in the form of either a wet pond or dry pond depending upon the desired development concept. The size, number and location of the facilities may vary depending on the stages of development and the final subdivision plan. It is suggested, however, that stormwater facilities be combined to reduce the operating costs, especially as it pertains to wet ponds. One wet pond per section is suggested for developed land and any number of dry ponds, provided they meet Alberta Environment Standards. Surface overland drainage is still encouraged in the area through the use of ditches, culverts and drainage swales.

Stormwater management is an important issue that must be addressed as part of any redevelopment scheme. Accordingly, a stormwater management plan shall be prepared to the satisfaction of Alberta Environment, as part of more detailed planning and/or subdivision proposals within the Plan area.

## B. SANITARY SEWER SYSTEM

The existing systems used in the area consist mainly of individual septic field systems, a few individual holding tanks with regular vacuum truck pump outs, and one individual connection to the regional trunk line.

Because of the existing topography of the area, and the fact that the Parkland Regional Sanitary Trunk Sewer dissects the Plan area, it is environmentally and economically appropriate to use the sanitary collection system to its fullest extent. The 1,350 mm diameter regional line has additional capacity which could service this area based on the projected sanitary flows arrived from the full development. Through the use of working easements and right-of-ways, a complete gravity sanitary sewer collection system is required for the area in whole. That portion of the regional trunk line east of the lift station is forcemain. Accordingly, all collection lines will be required to enter the regional trunk main line within the gravity portion west of the lift station. Proper oversizing of collector trunks tying into the regional line is suggested to service future development requirements at the outer limits of the serviced area.

Figure 6 indicates the possible location and sizing of sewage connections to the regional line. However, the total number of connections and their location will be subject to the approval of the Capital Region Sewage Commission Board, during the design stages of more detailed and specific development proposals. The principal planning objective shall be to minimize the number of connections to the regional trunk and maximize the connection of internal systems to the main collector systems connecting to the regional trunk main. This concept will also reduce the costs and practical difficulties associated with implementing continuous flow monitoring of the connections to the trunk main. The design of the collection systems shall reflect the possibility of long term connections to the two primary sanitary collector lines proposed from the Acheson area.

In keeping with new standards, the connection of weeping tile flows should be prohibited from entering the sanitary sewer. The disposal of subsurface flows of all properties in the area shall be carried out in a manner acceptable to the County of Parkland Approving Authorities. Sumps and pumps with discharge to the ground surface may be an alternative used by lot owners.

## C. WATER SUPPLY

*The existing system in place consists mainly of individual wells varying in depth and quantity of yield. Water quality from the perspective of domestic consumption is considered generally poor.*

*Since water quantity and quality in the Big Lake area are questionable, the County of Parkland commissioned a water study entitled Water Servicing Study Big Lake Area Structure Plan. This water study evaluated the many options available including individual trucked water supply, central well and local distribution from well, individual well system, and water supply and distribution from waterline.*

*The evaluation showed that water supply and distribution from water line was the most advantageous since it provides a reliable source of water, a high quality of water, provides fire flows, allows the entire Big Lake Area to be developable and has the lowest long term cost.*

*The County of Parkland will allow future development or multi-parcel subdivision to occur only on the basis of a full water distribution system with a temporary water reservoir with water supply by truck haul. All distribution lines within the subdivision shall be sized in accordance with the Water Servicing Study.*

*Water to supply the temporary reservoirs is provided by commercial truck haulers and the County will charge the residents for the water service on a cost recover basis. Water metres will be installed so that homeowners shall pay for the cost of their water consumption in direct proportion to their usage. The costs of the operation and maintenance of the interim system will be recovered through those users fees.*

*The County of Parkland will operate and maintain the interim systems upon the acceptance of the system through the requirements and security of the development agreement.*

*Since the capacity will be available in the individual water systems to provide the necessary flows in subdivisions with a majority of lots 0.4 (1.0 acre) or less, residential fire sprinklers shall be provided.*

*When development has progressed to a point where there are approximately 250 homes in a reasonably confined serviceable area, it may be economically feasible for the County to finance the debenture cost for a centralized reservoir to service the Big Lake Area and eliminate the temporary reservoir.\* This reservoir would be supplied by the Capital Region Parkland Water Board Waterline and would provide a consistent supply of water*

*\* see Water Servicing Study Big Lake Area Structure Plan for cost estimates.*

## 4.5 DEVELOPMENT STAGING

The development staging is illustrated on *Figure 6 - Proposed Utility and Servicing Plan*.

Development staging for this area is difficult to accurately determine. Land parcels are small and many pieces are privately rather than corporately owned. New developments may skip over land owners that have no desire to subdivide.

This area is also market driven primarily by its proximity to the City of Edmonton. Logically, therefore, the greatest development pressure will occur along the eastern edge of the Plan area and move westward. Phasing reflects this east to west pressure and is broken into three stages that are felt to most closely reflect market pressures, road development and economical staging of sanitary sewer connections. This phasing is not deemed to be mandatory.

Phase 1 has been delineated as the first section of land west of the City. Connection of the existing Bevington Road with Hillview Road (321 Street) will open this area up for development.

*With the addition of the requirement for temporary water reservoirs with a piped water system for all proposed residential subdivision it may be more cost effective from a development perspective to have smaller minimum parcel area requirements for all proposed parcels in Phase 1. The two CRA #2 areas originally designated in Phase 1 are changed to CRA #1 designations. All development areas in Phase 1 are permitted to have parcel areas ranging from 0.5 acres to 3.0 acres.*

As noted previously, the Municipal Reserve for this area should be taken in land that is partly wooded, connected to the nearby environmentally sensitive lands and/or is developable for recreational facilities eg. playgrounds, ball diamonds, sport fields as determined by the County.

Phase 2 is the central block of the Plan area and will correspond to the development of the Highway 60 interchange. The development of the interchange and the corresponding collector across Sections 15 and 16 will open up the remaining Country Residential Area #1, additional Country Residential Area #2, as well as the Highway Commercial Area. This in turn will provide potential access to the Wetland Conservation Area.

Phase 3 is the completion of the arterial road from Section 16 to Highway 794, opening up the remaining Country Residential Area #2 lands including those areas adjacent to the large Recreational Area. As there is current access to the Recreational Area from Highway 794 on the west, some edge development off from 794 will probably occur prior to the bulk of the development in this area.

The following phasing chart illustrates the amount of land in each phase and the minimum and maximum residential densities realized through complete development of the designated land base. Projected residential population levels are also included under the minimum and maximum density scenarios assuming an average household size of 3 persons.

| Development Phase                      |                  |                  |                  |
|----------------------------------------|------------------|------------------|------------------|
| Land Use                               | 1                | 2                | 3                |
| RESIDENTIAL<br>#1 * LAND               | 639 acres/259 ha | 113 acres/46 ha  | ---              |
| Minimum Density<br>(3 acres lots)      | 187 (561 pop.)   | 33 (99 pop.)     | ---              |
| Maximum Density<br>(.5 acre lots)      | 1022 (3066 pop.) | 180 (540 pop.)   | ---              |
| RESIDENTIAL<br>#2 LAND                 | ---              | 370 acres/150 ha | 650 acres/263 ha |
| Minimum Density<br>(3 acre lot)        | ---              | 108 (324 pop.)   | 190 (570 pop.)   |
| Maximum Density<br>(1 acre lot)        | ---              | 310 (930 pop.)   | 546 (1638 pop.)  |
| COMMERCIAL                             | ---              | 37 acres/15 ha   | ---              |
| INSTITUTIONAL                          | 3 acres/1.3 ha   | ---              | 6 acres/2.5 ha   |
| TOTAL<br>RESIDENTIAL<br>POP. PER PHASE |                  |                  |                  |
| Minimum Density<br>Scenario            | 561              | 423              | 570              |
| Maximum Density<br>Scenario            | 3066             | 1470             | 1638             |
| TOTAL POP. OF<br>ALL PHASES            |                  |                  |                  |
|                                        | 1554             |                  | 6174             |

\* Land for servicing requirements deducted from density calculations were estimated at 20% for .5 acre lots, 16% for 1 acre lots and 12% for 3 acre lot

## 4.6 GENERAL DEVELOPMENT POLICIES

In addition to the policy direction already stated in this Plan, the following development policies have also been included to guide decision-making on future development and subdivision proposals. More detailed planning, development and subdivision activity within the Plan area must address, to the satisfaction of the County of Parkland, the following issues prior to municipal approvals being granted:

1. Utilization of appropriate design principles, development setback standards and buffering/screening techniques to ensure compatible co-existence and integration of resource operations with future residential, recreational and commercial land uses.
2. Applications for subdivision and development approval within the Wetland Conservation Area, the Recreation Area and the Environmentally Sensitive Lands shall be referred to Alberta Environmental Protection for comment, to assist the County in determining possible negative impacts on the wetland habitat of the area.
3. Development and subdivision proposals within the Plan area shall be referred to Alberta Culture to determine if a Historical Resources Impact Assessment shall be required. Under the direction of Alberta Culture, the developer shall be responsible for conducting studies and proposing any mitigative measures in area where the proposal would destroy or alter the historic resource.
4. The clearing of vegetation in the Plan area shall be minimized in order to maintain natural habitat and reduce stormwater runoff into the Lake. A site plan detailing the protection of treed areas shall accompany any application for subdivision or development approval.
5. Subdivision proposals may be required in their design to dedicate land, in the form of municipal and/or environmental reserve, to accommodate future development of a regional recreation trail system around Big Lake. Dedication of reserve shall also be used to protect significant lake viewpoints and future nature observation points.
6. No structural development should be allowed within the 1:100 year floodplain or within 0.5 metres of the 1:100 year floodplain elevation (freeboard area).

**4.0 DEVELOPMENT CONCEPT**

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**4.1 DEVELOPMENT OBJECTIVES**

The Big Lake Area Structure Plan establishes the general planning framework and guidelines for the future rural residential and recreational development of this unique area of the County. The following objectives are to be achieved through its implementation. They are compatible with the goals and policies of the General Municipal Plan.

- To provide high quality, innovative and diversified rural residential development opportunities spanning several market segments.
- To provide for rural residential development with a strong sense of neighbourhood base.
- To protect the provincially significant waterfowl breeding area associated with Big Lake while recognizing that there may be compatible uses for the adjacent land areas that do not detrimentally affect the breeding season or habitat.
- To optimize the appreciation and enjoyment of the natural environment through sensitive integration of recreational and residential developments at different densities, as appropriate, across the Plan area.
- To realize Big Lake's potential as a significant regional recreational resource. Sufficient land around the lakeshore should be set aside for future development of an integrated trail system, one that connects with an open space system utilizing bordering areas of environmental significance.
- To meet the growing demand for convenience services along Highway 16X, a commercial area should be located in a contained and central location that makes services accessible for both travelers and area residents.
- To respond to the existing future plans for road way interchanges and additional frontage roads in the area and develop an efficient road network for the area.
- To provide a proper transition of uses and only interface land uses that complement each other.