Ponoka County

Chain Lakes Watershed Management Plan

This document was amended by Council on 13 September 2012 and is an Overview Plan for the purposes of Policy 4.3 of the Municipal Development Plan

1. Background

Chain Lakes is a string of long, narrow lakes east of Ponoka, south of Highway 53 and north of the Lacombe County boundary. The location is shown on Map 1. The lakes are deeply incised into the surrounding farm land, and in most places the steep banks retain their natural tree cover.

Over the past few years, Ponoka County Council has been asked to rezone several parcels of land in the area to allow multiple-lot residential development. Most of these applications have been approved.

In January 2011 a landowner proposed a large poultry barn on land less than a mile from the north lake. There were already a number of large animal operations in the area, but none this close to the lakes. For reasons discussed below, the poultry barn was not built, but council was concerned about future conflicts between the needs of agriculture, non-farm residents, and the natural environment. They therefore commissioned this study to identify the problems and opportunities, and to propose a long term land use plan for the area.

2. Regulatory framework

With some exceptions, discussed below, land use in Alberta is regulated by municipalities. Ponoka County's policies governing the Chain Lakes area are found in the Municipal Development Plan (MDP). The main policies are:

 If land has a farmland assessment rating of 30% or more, the County will normally allow only agricultural uses (MDP Policy 1.2). A 30% soil rating includes Canada Land Inventory classes 1, 2, 3, and some class 4. Map 2 shows that most of the land around Chain Lakes is class 2 and 3, so it would normally be reserved for agriculture. However, good soil may used for residences if the land is close to recreational lakes, or overlooks river valleys (MDP Policy 4.2).

- The County tries to manage the land surrounding lakes so as to preserve and if possible improve the quality of water, maintain optimum flows and water levels, and support the needs of fish and wildlife (MDP Policy 7.1) Preserving tree cover is singled out one of the most important ways of doing this (Policy 7.10).
- The MDP identifies land overlooking Chain Lakes as a possible location for multiple-lot residential subdivisions (MDP Map 3).
- Confined animal feeding operations are excluded from land within one mile of the lakes (MDP Policy 2.3).

These broad policies are put into effect through the land use bylaw, which assigns allowable uses to every parcel of land. The present zoning is shown on Map 3.

3. **Provincial Policies**

Provincial subdivision and development regulations limit a municipality's power to control land use near highways, sewer lagoons, waste disposal areas, airports, and oil and gas facilities. Details are given in Appendix 1; none will have much impact on the use of land around Chain Lakes. The provincial rules which could affect Chain Lakes fall under the Agricultural Operations Practices Act (AOPA).

AOPA gives the provincial Natural Resources Conservation Board (NRCB) the authority to approve large scale confined feeding operations (CFOs) such as dairies, hog barns, poultry operations, and cattle feed lots. (Smaller operations remain under municipal control.) When deciding on an application, the Board must "have regard to" but is not bound by municipal development plans (AOPA, section 25(4)(g)).

In January 2011 NRCB staff approved an application to construct a 95,000 bird broiler operation on NE 24-42-25-4, just under a mile from Chain Lakes. Several local residents and Ponoka County appealed. The case was heard on 23 March 2011.

In its decision, the Board noted that where a proposed CFO conflicts with the MDP, it (the Board) will

- 1. Identify the municipality authority's rationale for establishing the relevant provision(s) in the MDP;
- 2. determine whether the relevant provision is reasonable and reflective of good planning;
- 3. determine whether there is a direct link between the planning objectives and the establishment of the CFO exclusion zones; and
- 4 identify whether the MDP is in conflict with the AOPA objective of establishing common rules for the siting of CFOs across the province.

Having applied these tests, the Board found that the one mile exclusion zone was reasonable in order to protect the recreational and residential potential of the land around Chain Lakes. The Board concluded that

In cases where the Board is satisfied that the MDP respects the intent of AOPA to create a level playing field for this component of the agricultural industry across the province, the Board will not interfere with the municipal land use planning mandate. Ponoka County has established an MDP that contemplates CFO development through out the majority of its lands. While some of the restrictive provisions of the MDP may warrant consideration in respect of their consistency with AOPA in future reviews, this specific provision (i.e., "land within one mile of Chain Lakes") is entirely consistent with the objectives of AOPA. For this reason, the Board cancels Approval RA10053.

We can draw a number of lessons from this. The Board can over-ride municipal policies. However, it is unlikely to do so if these municipal policies are well thought out, reasonable, and fair to all parties. One of the purposes of this document is to set policies which meet the NRCB's tests.

4. Physical characteristics of the watershed

About 7,300 hectares (18,000 acres) in Ponoka County drain into Chain Lakes. The boundary of the contributing area is shown on Map 4. At one time it was larger, extending a considerable distance north of Highway 53, but when the highway was last rebuilt, no culverts were installed, so land north of the highway now drains north into the Battle River. The reduced flow into Chain Lakes may have had some effect on water quality.

For the first two and a half miles south of Highway 13 the valley is poorly defined, with no clear top of slope. From there south, there is a well defined valley with steep side slopes:

Location	Width of valley	Valley slope
Highway 53	No clear break	4%
TR 424	No clear break	8%
TR 422	400m break to break	45%
TR 420	460m break to break	48%
TR 414	820m break to break	18%

The lakes have a combined surface area of about 163 hectares (403 acres), which is about 2% of the contributing land area. This suggests that water has a short residence time in the lakes. A rapid turnover rate is welcome because it means that pollutants and nutrients are quickly flushed out.

Air photography, site investigation, and historic mapping all show very few defined creeks flowing into the lakes. Most of the flow into the lakes is probably from springs. Again, this is welcome because water from springs usually contains less contaminants and nutrients than overland flows.

5. Tree cover

Map 4 also shows the extent of tree cover in the watershed. Excluding trees along fence lines and patches of less than one hectare, the total area covered by trees is about 1,800 hectares (4,400 acres), which is about 25% of the area of the watershed. These tree covered areas help maintain the quality of water in the lake. Tree cover is especially important on steeply sloping land close to the lake. There are two reasons for this.

First, when surface runoff flows through woodlands, it usually moves slower than over cleared land. This allows more of the runoff to percolate into the soil, where pollutants and nutrients are taken up by plants and prevented from entering the lakes. Slow surface flows also carry less suspended matter, such as soil particles, and this reduces turbidity and siltation in the lakes.

Second, tree covered land produces far less phosphorus than does cleared land. Crop land produces about 50 kg per km2 per year, or 0.5 kg/ha/yr. Forested land produces about 10 kg/km2/yr, or 0.1 kg/ha/yr, or about 80% less than crop land per unit area (Hardy, 1983). The 1,800 hectares of trees in the watershed therefore result in about 550 kg less phosphorus entering the lakes each year than if the land were cleared. This undoubtedly has a beneficial effect on lake water quality.

6. Water quality

There are few historical records of water quality in Chain Lakes, so in 2011 the County asked the Alberta Lake Management Society (ALMS) to sample the water throughout the summer. (Results will be summarized here when they are received.)

7. Wildlife

The tree-covered banks of Chain Lakes are important wildlife habitat. The Canada Land Inventory rates the west side of the second lake as Class 1, the most productive, for deer. Tree covered areas are also an important part of the range of other mammals and songbirds.

As noted above, north of the first lake the valley is wider and shallower. Wetlands cover some 450 acres (measured from 2007 air photography). It is broken by only a single road, providing valuable habitat for many birds, amphibians, and potentially moose.

Upland areas are also productive habitat for deer, and are rated Class 2 by the CLI.

8. Land Use: Agriculture

Most of the land in the Chain Lakes watershed is farmed for grain, canola, hay, and pasture. Much of the crop is used to feed livestock. In recent years the size of livestock

operations has increased. Map 2 shows 17 confined feeding operations: ten dairies, four hog operations, two poultry barns, and two cattle feed lots. (A few of these are inactive but have the right to re-start operations at any time.)

CFOs are an efficient form of farming and, because of advanced management, can have a lower environmental impact per animal than traditional, smaller scale operations. They produce a lot of manure, but when this is applied properly, and at reasonable rates per acre, the nutrients are absorbed by the soil. This reduces the need to apply nitrogen, phosphorus, and other fertilizers.

If manure is applied badly, or too heavily, it may be picked up by rainfall and snow melt, and carried away by surface runoff into nearby lakes and streams. This results in excessive plant growth. When the plants die, the process of decomposition depletes the dissolved oxygen in the water, sometimes resulting in fish kills. This is uncommon, but it can happen.

The NRCB is aware of these risks so, before it approves a CFO, it requires evidence that there is a sufficient land base to incorporate the manure at safe rates. In the first year of operation this must be demonstrated. In subsequent years, the onus is on the CFO operator to ensure that the nutrient loading limits in AOPA are not exceeded, and he must keep records to verify this. However, NRCB permits do not list the manure application rate, and will only list the incorporation method if that is a commitment the CFO operator made at the time of application.

Some people have questioned whether the NRCB follows up and checks that the conditions of approval are met. As far as application rates go, simple economics gives us some assurances. Like any other input, fertilizer (natural or artificial) is subject to diminishing returns. The last pound-per-acre does not give the same increase in yield as the first pound-per-acre. It is therefore in the farmer's own interest not to apply it at excessive rates. It makes more sense to ship it out to land which can better use it.

Over-application is not the only thing that can cause nutrient-rich runoff. A heavy rainstorm immediately after the manure is spread can carry away nutrients. Application of liquid manure on frozen ground can also cause problems. The only way to guarantee that nutrients will not reach the lakes is not to spread manure close to watercourses. Setback distances are contained in the AOPA regulations, but are not specified in NRCB permits for individual sites.

Local residents also report that range cattle continue to be watered in the lake.

9. Land Use: Residences

There are an increasing number of residential parcels in the watershed, concentrated near the lakes. The County's normal rule is to minimize the size of residential lots, but larger lots are commonly allowed on tree covered land. As shown on Map 3, most of the land subdivided close to the lakes has been classified Watershed Protection, which requires at least 10 hectares (25 acres), with at least 75% of the land covered by trees.

10. Land Use: Oil and Gas

There is a small amount of oil and gas activity in the area, but the product is not sour, so the required setbacks are small. Houses must be 100 metres away from a well, and outside any registered right of way. These setbacks can be accommodated by appropriate subdivision design.

11. Possible Threats to the Watershed

Based on what has been said, we can foresee a number of possible threats to the wellbeing of Chain Lakes and the surrounding watershed:

- Groundwater supplies could be depleted by additional large livestock operations.
- Groundwater quality could be reduced if contaminated runoff finds its way into the aquifer. This could also contaminate the springs which feed the lakes.
- Loss of tree cover could reduce wildlife habitat and make it easier for agricultural runoff and silt to reach the lakes. This is especially true where trees are removed from the lake banks and nearby slopes.
- The quality of water in the lakes could suffer if surface runoff is contaminated by agricultural run-off, or by watering of livestock in creeks or lakes.
- Wetlands could be lost by drainage schemes.
- Water levels in the lakes could be reduced if springs dry up because of reduced groundwater flows.
- Property values could be reduced if the natural environment is degraded.

12. Reducing these Threats

These threats can be reduced or even eliminated if the County adopts the following policies.

12.1 Conduct a groundwater study: Where a subdivision will result in there being six or more residential lots on a quarter section, and those lots will use groundwater, the Water Act requires the developer to prove that there is enough groundwater to serve the new lots without depleting the supply to farms and other residences in the area. The Water Act also requires engineering tests for large capacity non-residential wells. However, these tests look at each development separately; they do not consider cumulative effects.

Faced with this issue at Gull Lake, the County engaged a hydrological engineer to estimate precipitation, infiltration rates, evapo-transpiration, aquifer replenishment, and human and farm consumption. The engineer used this to calculate the sustainable yield of the local aquifers. This study is posted on the County web site.

It is recommended that the County undertake a similar study covering the Chain Lakes watershed. The study should also include the area north of Highway 53 to the Battle River, where there is heavy use of groundwater by both agriculture and residences.

12.2 Set limits on development: Once we know the sustainable yield of the local aquifers, the County can ensure development does not exceed the level that the aquifers can sustain. The County can also pass on the information to the NRCB.

12.3 *Protect aquifers that feed springs:* The Gull Lake study found that there are several aquifers at different depths. The one closest to the surface feeds the springs which in turn feed Gull Lake. Large users are now asked to use deeper aquifers which are not hydraulically connected to the lake. A similar rule should apply at Chain Lakes.

12.4 *Keep cattle out of watercourses:* The County should encourage livestock producers to provide waterers in upland locations, and to fence range cattle out of watercourses. Part of the cost may be met from Alberta Agriculture's Growing Forward program (details can be found on Alberta Agriculture's website) or though the Cows and Fish organization.

12.5 *Discourage the draining of wetlands:* The County has no jurisdiction over land drainage, but it should discourage the practice.

12.6 *Maintain a CFO exclusion zone:* In their decision noted above, the NRCB said that the County was justified in asking that CFOs be kept away from land that had the potential for future residential development. Map 5 shows a proposed exclusion zone. With minor exceptions, it includes all quarters adjacent to land proposed for residential development. The County's MDP should be amended to show this boundary instead of the more generalized one mile from the lake shore.

There are at present no CFOs inside the proposed exclusion zone.

The existing Agricultural zoning would continue in force in the exclusion zone.

12.7 *Provide alternative locations for new CFOs:* If the County wants to keep CFOs out of some areas, it must continue to allow them elsewhere. The municipal development plan already does this: restricted areas make up only about 25% of the County's total land base; the other 75% is open to CFOs. This is shown on Map 7, which is based on Map 2 in the County's municipal development plan.

12.8 Test agricultural runoff: During spring thaw, and after heavy summer rains, the County should have qualified people take samples of surface runoff in ditches that carry water to the lake. The samples should then be analyzed for phosphorus and other nutrients that can lead to eutrophication of the lakes. Unusually high readings should then be traced upstream to find the source, and appropriate action taken by the County

or NRCB. The fieldwork might be done by County staff or trained local volunteers, with the samples analyzed by provincial or private laboratories.

Not all nutrients arise from point sources. Those coming from distributed sources such as (but not limited to) fertilizer need to be dealt with in other ways. One solution, now being explored by Olds College's School of Innovation, is to channel nutrient-laden water through artificial marshes where aquatic plants take up the nutrients before releasing cleaner water. These marshes could be situated on environmental reserve land.

12.9 Test groundwater: Wells in the area should be tested occasionally to determine if upstream CFOs are contaminating groundwater. A list of appropriate indicators should be developed with input from the public health authorities and independent organization such as the Alberta Lake Management Society. Laboratory costs should be covered by the County.

12.10 Upgrade private sewer systems: Farming is not the only source of phosphorus in water. Private sewer systems also contribute, and they must be held to the same high standards as farm operations. Recently the County has started to require piped sewer systems in high density subdivisions, but these are not practical for large lots: the cost of piping is prohibitive, and there is not enough volume to run a treatment plant. Individual systems should continue to be used, but open discharge systems should not be allowed.

12.11 *Maximize tree cover:* Maximizing tree cover is probably the most important single thing we can do to protect the local environment. Sections 5 and 7 noted the benefits to water management and wildlife habitat. A landscape rich in trees is attractive, and creates higher residential land values. For all those reasons, the County should adopt land use policies that encourage landowners to maintain tree cover.

Incentives work better than regulation. In a farming community, it is not acceptable to forbid the clearance of trees on land zoned which is zoned Agricultural. It is better to make tree covered land worth more than cleared land. This can be done by allowing tree covered land to be subdivided into residential lots. The County's Watershed Protection zoning does this:

707.1 The purpose of the Watershed Protection district is to encourage the maintenance of natural vegetation, especially near lake and rivers, by allowing tree-covered land to be subdivided into residential parcels large enough that most of the trees will be retained.

707.4 No more than 25% of the area of a parcel shall be cleared of trees. Within the remaining 75% of the parcel, trees may be selectively cut, consistent with good woodlot management practice. A restrictive covenant or other encumbrance may be registered on the title of a lot at the time of subdivision to bring this restriction to the notice of future buyers.

Much of the land overlooking the Chain Lakes valley already has this zoning. However, as it is only applied to tree covered land, it is not appropriate everywhere.

12.12 Create a new zoning class: The recommended solution is to create a new land use district called the Chain Lakes Special Area, covering all land close to the lakes or the main tributary. The rules for this area would give the owner a choice:

- He can continue to farm it under the same rules as apply to all farm land in the County, with a minimum parcel size of 80 acres. Alternatively,
- He can subdivide it into parcels of 10 acres or more, but in that case, the land must be managed in such a way as to protect the native tree cover.

Map 5 shows the area recommended for this zoning. It covers about 6,400 acres in all or part of 43 quarter sections. It includes all quarter sections adjacent to the lakes and the main north tributary, plus some land a little further back which is either tree covered or steeply sloping. At the request of the owner, it excludes a half section adjacent to Highway 53.

Appendix 2 gives the proposed wording for this new land use class, and Map 6 uses a cross section of the valley to show how it would work.

If requested by individual landowners, Council might enlarge the Chain Lakes Special Area on to other, suitable land. If this is done, the CFO exclusion zone would also need to be adjusted.

12.13 Amend the municipal development plan: As noted in section 3 above, the Natural Resources Conservation Board must "have regard" for municipal development plans when deciding on an application for a confined feeding operation. Appendix 3 sets out proposed amendments to the MDP which will achieve this protection for the Chain Lakes area.

12.14 Reserves: When land is subdivided into multiple lots, the municipality has the right to take ownership of all undevelopable land as environmental reserve, and up to 10% of the developable land as municipal reserve (Municipal Government Act, sections 664 and 665).

There can be problems with municipal ownership. It is legally open to all, so there may be problems with abuse, and this can lead to issues of legal liability.

As an alternative to owning the land, the County has the option of leaving it in private ownership, but taking an environmental reserve easement which limits it use. The easement runs with the title and is binding on future owners.

It is recommended that when residential lots are created on Chain Lakes, the County should not take reserves, but leave the lake banks, ravines, and valley bottom as part of the private lots, subject to environmental reserve easements. Two subdivisions on Chain Lakes have such easements now, and they appear to be working well.

Because of the importance of keeping the lake banks and valley sides undisturbed, the environmental reserve easements should include penalties for unauthorized disturbance. This is included in the sample easement attached as Appendix 4.

13. Financing Municipal Infrastructure

When new multi-lot residential subdivisions are created, the developer must pay the County \$5,000 per lot to improve municipal roads. Roads in the Chain Lakes area are generally good, and are well able to accommodate the sort of development proposed in this document. However, as the area fills up, there may be pressure from residents to pave First Chain Lakes Road (RR 250) and Scott Road (RR 251). Part of the cost can be met from the \$5,000 per lot levy.

If possible, roads should be built to a high enough standard that they can take full loads year-round, with no restrictions in the spring. This is important to the farmers who need to bring in feed and fertilizer and to ship out livestock, crops, and manure.

14. Conclusion

The soil in the Chain Lakes area is generally good, and County policy would normally reserve it for farming. However, farming close to the lakes could increase their nutrient loading, with a loss of value for fishing, wildlife, and recreation. Ponoka County covers over 720,000 acres, over 4,500 quarter sections, and most of this is farmed; it seems reasonable to use less than one per cent of this for alternative uses to protect Chain Lakes.

Appendix 1: Senior government control of development

Although land use is a municipal responsibility, the County is restricted by the Subdivision and Development Regulation, AR 43/2002, as regards the following:

Sewer lagoons:	Residences must be at least 300 metres away from sewer lagoons.
	The closest sewer lagoon is in Ponoka, about 2,800 metres from the closest land draining into Chain Lakes. Treated effluent flows north to the Battle River, and does not enter the Chain Lakes watershed.
Waste disposal sites:	Residences must be at least 300 metres away from a waste disposal site, and no wells for human consumption must be drilled within 450 metres of such a site.
	The closest past waste disposal sites are the former town of Ponoka landfill, about 2,500 metres away, and a former County landfill in SW 29-42-23-4, 12,000 metres from the lakes.
Proximity to highways:	A municipality must not approve a residential subdivision within 800 metres of a provincial highway without the prior approval of Alberta Transportation (AT).
	Highway 53 runs along the north boundary of the Chain Lakes watershed, so development along the northerly half mile of the watershed requires AT's approval. And if development further south will bring more traffic on to the highway, the department may also request a traffic impact analysis and upgrading of the intersections with County roads.
Livestock operations:	The Agricultural Operations Practices Act does not allow confined feeding operations close to residences. The minimum separation distance (MDS) depends on the type of operation and its size. Ponoka County applies those setbacks reciprocally, and normally does not allow new residences close to confined feeding operations.
Sour oil and gas:	A proposal to build a residence within 1,500 metres of any sour gas well or pipeline must be referred to the ERCB for comments.
	There are no such installations in or within 1,500 metres of the Chain Lakes watershed.

Other oil and gas: Residences are not allowed within 100 metres of a sweet oil or gas well, or within the right-of-way of a sweet oil or gas pipeline. Setbacks are also required from compressor sites.

There are a number of wells and pipelines in the growth node. The design of subdivisions must take these into account.

In addition to the provincial Subdivision and Development Regulation, senior governments have some additional controls:

- Abandoned wells: It is sometimes necessary to bring a service rig tom an abandoned well site. To accommodate this, the ERCB requires that there be a clear area, ten metres square, around the well, with a minimum six metre access right of way. There are abandoned wells in the area, and it will be the responsibility of developers to identify them from ERCB records and to provide for future access.
- Historic sites It is possible that there are features of historical or archaeological interest in the study area, and the Alberta government's Historical Resources Management Branch has the right to require a historical or archaeological assessment of land which is to be developed. It is not necessary to do any historical surveys at this stage; the normal procedure is for the subdivision authority to ask the Historical Resources Management Branch for comments prior to approving the subdivision.
- Airports: Ponoka airport is about 13 km west of Chain Lakes. Bashaw airport is about 26 km east. In neither case do the take-off and approach paths pass over the lakes.

Under Transport Canada regulations, this is Class G (uncontrolled) air space.

Appendix 2: Proposed "Chain Lakes Special Area" Zoning

To be added to Bylaw 7-08-LU as Section 721

721.1 <u>Purpose</u>

The purpose of the Chain Lakes Special Area is to protect Chain Lakes by encouraging the retention or regeneration of tree cover close to the lakes, and by discouraging those land uses which may result in the runoff of nutrient-rich water.

721.2 Permitted Uses

The following uses are permitted:

- extensive agriculture,
- intensive agriculture [the bylaw defines this to exclude intensive livestock operations],
- forestry and tree farming,
- horse riding, training, and boarding stables,
- residences (but see section 618 regarding suitable building sites),
- home offices,
- home businesses compatible with the purpose of the district,
- public parks and recreation areas,
- small-scale, unattended utility structures serving the immediate area, and
- buildings and uses accessory to these uses

721.3 Discretionary Uses

The following uses may be allowed at the discretion of the Development Authority:

- bed and breakfast operations,
- guest ranches,
- kennels,
- group residences,
- airstrips (note that licensed airports are classified separately),
- sand, gravel, and mineral workings,
- public parks and recreation areas,
- pre-existing buildings moved to the site,
- institutional and public uses, including schools, churches, cemeteries, halls and other small scale public facilities,
- larger scale utility facilities such as power and gas lines and installations, gas processing plants, compressor stations and radio towers, and
- buildings and uses accessory to the above.

721.4 Yard site subdivisions

An existing yard site may be subdivided from a quarter section under the same conditions as those set out in section 702.6 of the bylaw [Agricultural district].

721.5 Other Subdivisions

Lots other than yard sites may be eligible to be created with an area of at least 4 hectares (10 acres), but on land which is traversed by ravines, creeks, or other obstacles, the minimum lot size may be reduced or increased so that the obstacles become the parcel boundaries.

Residential lots shall conform with section 618 of the bylaw regarding safety and suitability of building sites.

The subdivision authority may allow smaller lots for a utility or for a public purpose.

721.6 Setbacks from property boundaries

All buildings and excavations must be set back

- 40 metres from any road, or, where a road is to be widened or diverted, from the future road boundary, and
- 10 metres from any other property line.

No accessory building shall be located in a front yard.

721.7 <u>Residences close to livestock operations</u>

If the Development Authority is asked to issue a development permit for a residence, and the residence is closer to an intensive livestock operation or confined feeding operation than the minimum distance separation set out in section 611, he may

- refuse to issue a permit, or
- issue a development permit subject to the applicant signing the declaration attached hereto.

(Intensive livestock operations, as defined in the bylaw, are too small to come under AOPA, and therefore remain under County jurisdiction.)

721.8 Maintenance of natural vegetation

On a parcel of less than 32 hectares (80 acres) which was created by subdivision after June 2012,

- no more than 25% of the area of shall be cleared of trees, and
- no land within 30 metres of a watercourse shall be cleared of trees except to create a trail or fence line.

In wooded areas, trees may be selectively cut, consistent with good woodlot management practice, or to create fire breaks.

721.9 Environmental Reserve Easement Required

When land is subdivided into lots of less than 32 hectares (80 acres), those parts with a slope of 15% or more, and/or within 20 metres of a lake or watercourse, shall be subject of an environmental reserve easement requiring that the natural vegetation is left undisturbed, with penalties for unauthorized disturbance.

721.10 Number of residences on a lot

No more than one residence shall be established on a lot, but this shall not prevent the establishment of

- a secondary suite in a detached residence, or
- a second residence under section 615 of the bylaw.

721.11 <u>Sequence of Development</u>

The Development Authority may refuse to issue a development permit for an accessory building if no main building exists on the lot.

721.12 Livestock

Livestock may be kept in the ratio of one animal for each hectare of cleared land, plus domestic pets in reasonable numbers, plus animals in a boarding or breeding kennel for which a development permit has been issued.

721.13 Drainage

Naturally occurring drainage patterns shall not be changed without the approval of the Development Authority, who shall bear in mind the likely effect on local surface flows and groundwater recharge.

721.14 <u>Sewer systems</u>

No residence shall be served by an open discharge sewer system.

Appendix 3: Proposed Amendments to the Municipal Development Plan

Policy 2.3 The County requests the NRCB not to allow new or expanded CFOs in the following areas:

[List of restricted areas follows]

Delete:	"Land within one mile of Chain Lakes"
Substitute:	"Land shown as the CFO Exclusion Zone on Map 5 of the
	Chain Lakes Watershed Management Plan

Map 2 Amend the boundary of Area A9 by substituting the boundary of the CFO Exclusion Zone shown on Map 5 of the Chain Lakes Watershed Management Plan, and

Amend the text description of area A9 to read "Area defined on Map 5 of the Chain Lakes Watershed Management Plan"

Appendix 4

Wording of an Environmental Reserve Easement to be registered at the time of subdivision

It is based on existing Environmental Reserve Easements at Chain Lakes, with the addition of clause 4, the penalty clause

This Environmental Reserve Easement dated _____

Between _____ (herein referred to as the Grantor) of the first part

and

Ponoka County (herein referred to as the Grantee) of the second part.

WHEREAS the Grantor is the owner of lands located in Ponoka County, and

WHEREAS the Grantor has applied for and obtained subdivision approval from the grantee under file RP/__/__, and

WHEREAS the Grantor and the grantee have agreed that rather than a portion of the lands being taken for environmental reserve, the Grantor will grant to the Grantee an Environmental Reserve Easement over a portion of the lands,

IN CONSIDERATION of the subdivision approval and in consideration of the Grantee agreeing to take an Environmental Reserve Easement rather than environmental reserve, and in consideration of ONE DOLLAR and other good and valuable consideration passing from the Grantee to the Grantor (sufficiency of receipt of which is hereby acknowledged by the Grantee) on behalf of himself as registered owner of the lands and on behalf of each of the successors entitled to the lands, grants to the Grantee and to any successor to the Grantee an Environmental Reserve Easement on the following lands:

1. DEFINITION OF LANDS

In this agreement:

- (a) "Lands" means those lands legally described as follows: _____
- (b) "Easement Lands" means the portion of the lands subject to an Environmental Reserve Easement as shown on Plan _____.
- 2. DUTY TO MAINTAIN

The Grantor shall maintain the Easement Lands in their natural state as if they were owned by the Grantee.

3. DEVELOPMENT OR IMPROVEMENT

The Grantor, except as specifically provided below, shall not allow any building, development, improvement, excavations, or clearance of natural vegetation on the Easement Lands.

Development allowed: (a) construction and maintenance of fences

- (b) construction and maintenance of walking trails
- (c) removal of over-mature and diseased trees
- (d) subject to the prior approval of the Grantee, the creation of fire breaks.

4. **RESTORATION**

If the Grantor develops, clears, or damages the Easement Lands in contravention of the preceding clause, the Grantee may require him to restore the said Easement Lands to their original state at his own cost, and to reimburse the Grantee for any expense incurred in enforcing this clause.

5. RIGHT TO INSPECT

The Grantee has the right to come on to and inspect the Easement Lands with 24 hours notice to the Grantor.

6. NO RIGHT OF PUBLIC USE

Nothing in this agreement will be construed as requiring or allowing access by the general public to the Easement Lands.

7. GRANTEE NOT RESPONSIBLE FOR MAINTENANCE

The Grantee is not responsible for the maintenance of the Easement Lands and shall not be responsible for any loss or injury arising from the use of the Easement Lands.

8. EASEMENT RUNS WITH LAND

- (a) The benefit of the Environmental Reserve Easement set out shall be annexed to and run with the Lands, and the burden of the Environmental Reserve Easement herein contained shall be annexed to and bind the Lands and every part thereof.
- (b) Any provision of this Environmental Reserve Easement made void or rendered invalid shall not invalidate or render unenforceable the remaining provisions of the Environmental Reserve Easement.

9. REGISTERED AT THE LAND TITLES OFFICE

This Environmental Reserve Easement shall be registered by way of a Caveat against the title of the lands at the Land Titles Office.

IN WITNESS WHEREOF the Grantor has executed this Environmental Reserve Easement on _____ [date]

Witness

Owner

IN WITNESS WHEREOF the Grantee has executed this Environmental Reserve Easement on _____ [date]

PONOKA COUNTY

Per: _____

Per: _____

References and sources

Legal base mapping:	ALTALIS, October 2011 (provided by WCPA)	
Topography and drainage:	<u>National Topographic Series</u> , 1: 50,000 Map 83A12 (Ponoka) 1975	
Agricultural capability:	Canada Land Inventory: Soil Capability for Agriculture, 1:250,000, Map 83A12: Department of Regional Economic Expansion, 1970	
Ungulate capability:	Canada Land Inventory: Land Capability for Ungulates, 1:250,000, Map 83A12: Department of Regional Economic Expansion, 1970	
Waterfowl capability:	Canada Land Inventory: Land Capability for Waterfowl, 1:250,000, Map 83A12: Department of Regional Economic Expansion, 1970	
	(NTS and CLI maps listed above may be downloaded as PDF files from www.geogratis.ca, a website maintained by Natural Resources Canada, www.nrccan.gc.ca, or hard copies may be seen at WCPA)	
CFOs:	Locations, types, and sizes provided by Natural Resources Conservation Board, Red Deer, 2011	
County documents:	The Municipal Development Plan, Ponoka County, Bylaw 6-08-MDP, 2008	
	<u>The Land Use Bylaw</u> , Ponoka County, Bylaw 7-07-LUB, 2008	
Development setbacks:	Subdivision and Development Regulation, AR 43/2002	
Abandoned wells:	ndoned wells: <u>Advisory Land Use Planning Notes:</u> <u>Abandoned oil and C</u> <u>Wells</u> : Energy Resources Conservation Board, Calgary, 2009	
Water testing:	The requirement for proof of water supply is in section 23(3) of the <u>Water Act</u> .	
Regional water model:	<u>Groundwater Supply at Gull Lake</u> : Hydrogeological Consultants Ltd, file 10-136.00, 2009	
Nutrient contributions:	<u>Pigeon Lake Water Quality Study</u> : Hardy Associates, Edmonton, Alberta, 1983	



Ponoka County Chain Lakes Watershed Management Plan Map 1: Location

The shaded area shows the extent of the Chain Lakes watershed in Ponoka County



Map amended 23 May 2012

Base map is ALTALIS rotated 1 degree clockwise round 0,0







Base map is ALTALIS rotated 1 degree clockwise round 0,0

Map amended 23 May 2012





Amended 23 May 2012

Not to scale

Map amended 18 July 2012	The setback around Ponoka has been adjusted to recognize the recent annexation	No new CFOs: too close to existing or future residential areas or lakes Areas open to new CFOs	Ponoka County Chain Lakes Watershed Management Plan Map 7: Areas closed to new CFOs in Ponoka County Adapted from Map 2 in the County's Municipal Development Plan	Highway 20 Highway 20 Highway 20 Highway 20 Highway 20 Highway 20 Highway 20
		10km		Red Deer Lake Sund Chain Lakes in the management plan Sal development plan