

Agricultural Boundary Design Guidelines



ROCKY VIEW COUNTY
Cultivating Communities

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Guide Layout

Section 1: Purpose of the Guidelines

Explains the various land use conflicts that have arisen over the years in areas where non-agricultural uses such as houses, businesses, and industrial uses are located alongside agricultural operations. The goal is to mitigate these issues at the application stage through the use of design tools.

Section 2: When to Apply the Guidelines

Provides more detailed information about when the guidelines should be applied, including answers to common questions regarding their use and applicability.

Section 3: Site Analysis

Assists the applicant through a simple site analysis to identify where possible issues between agriculture and non-agricultural land uses could occur, and where mitigation may be needed.

Section 4: Design and Implementation Tools

Provides a suite of tools that can be applied to a site to help mitigate conflict and improve the overall site design. The tools should be used in conjunction with the site analysis in Section 3 to help select the techniques that are most suited for each proposal.

Appendices:

A series of appendices are attached to this document to assist with clarity and implementation of the Agricultural Boundary Design Guidelines. The appendices are:

Appendix A: Worksheets – the applicable worksheet is to be completed in support of an application for building permit, development permit, local plan, redesignation, or subdivision.

Appendix B: Glossary of Terms

Appendix C: List of Agricultural Types and Resources

Appendix D: Buffer Recommendations – Pathways, Setbacks, Landscaping, Berms

Appendix E: Fencing Recommendations

Section 1: Purpose of the Guidelines

The growth of Rocky View County over the last several decades has increased the diversification of the agricultural sector as well as the expansion of non-agricultural uses into areas that have traditionally been very rural. This has resulted in a number of issues along the interface or edge areas where agricultural operations must continue to function alongside often incompatible land uses. Conflicts often arise between agricultural producers and adjacent residents and business owners leading to complaints and enforcement issues (see *Table 1*). Many of these issues could be minimized or prevented simply by considering adjacent uses when a new subdivision or development is being designed.

In response to these concerns, the *County Plan* and the *Agriculture Master Plan* directed the preparation of Agricultural Boundary Design Guidelines. The goal of this document is to minimize land use conflicts that can occur when agricultural and non-agricultural uses are located next to one another. The guidelines provide a set of tools to incorporate into the design of an application to ensure consideration of agriculture and to reduce problems for agricultural operators, homeowners, and businesses.

This document will:

- Provide a simple design process and set of tools that can be used to mitigate possible conflicts between non-agricultural uses and agricultural operations.
- Apply to all types of development adjacent to agricultural uses.
- Assist in completing the worksheet required to submit with an application.

Table 1: Common issues along the boundary between agriculture and non-agricultural land where the application of design tools may be beneficial:

Impacts to Agriculture	Impacts to Non-Agricultural uses
<ul style="list-style-type: none"> • Trespassing – people and pets • Litter/Illegal dumping • Illegal pumping of water into adjacent fields • Property and equipment vandalism • Problematic pets • Crop damage and theft 	<ul style="list-style-type: none"> • Odour • Fertilizer and pesticide concerns – ground and air • Dust • Aesthetics • Stray livestock • Fencing damage from livestock

Continues on next page

Impacts to Agriculture	Impacts to Non-Agricultural uses
<ul style="list-style-type: none"> • Livestock harassment or disturbance – people and pets • Flooding, sediment, and stormwater • Residential fertilizer and pesticide concerns • Introduction of diseases, weeds, and pests from adjacent yards into agricultural operations • Increased lights at night from adjacent uses • Increased risk to farm implements and additional cost of equipment repairs due to foreign objects/ garbage in fields • Increased traffic and higher speeds on roads • Liability 	<ul style="list-style-type: none"> • Accidental pet poisoning • Hours of operation – light, noise • Slow moving equipment on roads, mud, and rocks on roadways

Relationship to other documents:

Statutory Plans: Statutory plans (*County Plan* and area structure plans) provide policy to evaluate an application’s suitability and location. In contrast, the Agricultural Boundary Design Guidelines provide design tools to mitigate conflicts between agricultural and non-agricultural land uses.

Intermunicipal Development Plans: intermunicipal development plans (IDPs) guide relationships between neighbouring municipalities as well as development along the intermunicipal borders. The Agriculture Boundary Design Guidelines only apply to lands within Rocky View County and development that is completely within its borders. Where there are land use conflicts along intermunicipal borders, the policies of an IDP are used to evaluate and negotiate the concerns.

Section 2:

When to Apply the Guidelines

Do these guidelines apply to my application and when should they be considered?

The guidelines should be considered for all non-agricultural development adjacent to agricultural lands and when applying for a development permit for an intensified agricultural use. *Appendix A* contains two (2) worksheets. Complete the applicable worksheet and submit it with the appropriate application.

Applicable uses include:

- Residential, including first parcels out
- Business and agriculture business
- Commercial and industrial
- Institutional (e.g. schools, places of worship)
- Recreational (e.g. golf courses, campgrounds)
- Intensified agriculture (defined as discretionary in the *Land Use Bylaw*)

These guidelines should be applied as early in the application process as possible so agricultural boundary area treatments can be easily integrated with little extra time and effort, avoiding more costly and time consuming changes in the future. The application types include: local plans (conceptual schemes or master site development plans), redesignations, subdivisions, development permits, and building permits. The guidelines should be considered at the earliest stage. Completion of the worksheet is not a requirement for a building permit application, but the guidelines will provide valuable information to consider when determining where buildings shall be placed on a property.

How do these guidelines work?

The guidelines consist of a two step design process; site analysis and choosing design tools or elements. This simple process can be used for all sizes and types of development by selecting the design tools that make the most sense. The worksheets in *Appendix A* contain several questions to assist in the site analysis and to choose appropriate design tools.

Will additional information be required?

The only requirement of this process is that the worksheet be completed and submitted as part of the application package. (While it is recommended that building permit applicants complete the worksheet, they are not required to submit it with their application package.)

The worksheet will not require additional technical work or studies that would not otherwise be required for an application. The worksheet will require the applicant to answer several questions regarding the proposal to demonstrate that the guidelines have been considered and applied, where appropriate.

How will my worksheet be used?

Once the entire application has been submitted, the assigned file manager will evaluate the worksheet along with all other items submitted in the application package. The file manager may identify additional opportunities to improve the design of an application, which will be discussed with the applicant.

What happens with tools that do not apply?

Not all tools will apply to every application as some tools may be inappropriate for certain sites. Choose the tools that will be most effective in the context of the proposal and demonstrate how they will mitigate potential conflicts.

Who can I contact for help?

If you have questions prior to an application being submitted, call Planning Services at 403-230-1401. Once an application has been submitted, a file manager will be assigned and can assist with any matters that may arise.

Section 3: Site Analysis

A site analysis includes looking at the land to identify possible points of conflict within the agricultural boundary area as well as features on the land that could be incorporated into a design to reduce conflicts. The agricultural boundary area is defined as the potentially affected lands on either side of the property line. The distance of the edge area varies based on context, but has been defined as approximately 300 metres on either side of the border (*Guide to Edge Planning, 2009*). This is not a no-development area, but the area that should be examined to determine if possible conflicts could occur (*Guide to Edge Planning, 2009*).

A site analysis should identify the following:

1. The setting: where the lands are located and what is going on in the immediate vicinity.
 - » Natural or manmade features such as hills, coulees, ravines, water bodies, drainage conveyances, roads, road allowances, railways, etc.
 - » The type of agriculture that is adjacent to your lands; e.g. grain farm, livestock operation, greenhouse, tree farm, etc.
2. The agricultural boundary area – the area that extends on both sides of the boundary that includes elements or features that could create impacts on either property. The size of area could vary depending on site specific circumstances, but 300 metres on either side is typical.
3. The proposal and development goals – contemplate how it could impact the adjacent agricultural operations and how those operations could impact the proposed development.
4. Identify areas where land use conflict may occur.

The following questions will assist with the site analysis. These questions are repeated in a simple worksheet in *Appendix A* to assist with this process.

Subject land location and adjacent land uses

- What is the surrounding land being used for? E.g. houses, business, agriculture.
- Does the subject land share a border with agricultural land? Check the zoning in the *Land Use Bylaw*. Agricultural districts include: RF, RF2, RF3, AH.
- What type of agricultural operation is being practiced on the adjacent lands? For a list of agricultural types and resources, see *Appendix C*.

- Identify the agricultural boundary area and consider the following:
 - » What effects could the proposal have on the adjacent agricultural land? See *Table 1 in Section 2* for a list of potential problems.
 - » What effects could adjacent agricultural practices have on the proposal? See *Table 1 in Section 2*.
 - » Are there any buildings or structures within, or proposed within, the edge area? If so, what are they?

Natural features

- Are there topographical or environmental features? If so, where are they? Natural features may be used as a buffer between uses. They may provide natural screening, distance separation or barriers to negative impacts such as noise, light, and trespassing.
- These could include: Creeks and other overland drainage patterns; existing vegetation such as tree stands; depressions or changes in elevation such as coulees, ravines, hills, or draws, or wetlands or sloughs.

Weather patterns

What are the prevailing winds and any other significant weather patterns? E.g. If there was dust blowing, in what direction would it typically blow?

Future land use context

- Is the subject land within an area structure plan (ASP)? For a list of ASPs, please visit the County's website.
 - » If YES:
 - i. Are the subject lands within, but on the edge, of the ASP? *If this is the case, use all tools possible to mitigate between agricultural and non-agricultural uses as the agricultural land will likely remain for a significant time period.*
 - ii. If not on the boundary, what are the proposed future land uses of adjacent lands? *See the land use map of the ASP. Using the map, choose tools that will mitigate impacts to agricultural lands (municipal reserve, pathways, berms, and vegetation) but design the subdivision in a manner that will not inhibit future connectivity once the lands are developed (subdivision and road layout).*
 - » If NO:
 - iii. What is the predominant land use in the area? Are most lands in the vicinity used for agriculture, business, or residential use?

Infrastructure

- What is the existing road type (gravel/paved)?
- Is access to individual lots currently in place?
- Will development cut off access to existing properties?
- Is there a need to dedicate land for future road connection to adjacent lands?
- Are there nearby parks or pathways?
- What other hard infrastructure exists or is nearby?

After answering the applicable questions and thinking about the proposal, one should have a clear understanding of the opportunities and constraints of the subject land and the potential conflict areas within the agricultural boundary area. Now proceed to *Section 4* to select the appropriate design tools to minimize land use conflicts.

Section 4:

Design and Implementation Tools

This section provides a suite of design and implementation tools to allow for flexibility and application to all scales and types of development. Physical barriers, such as fencing, greatly reduce trespassing, littering, and livestock harassment. The types and combination of tools chosen will be related to the size and scale of a proposal.

A well-chosen combination of distance separation, buffering, and fencing has proven to be effective in many locations. Some of the tools, such as landscaping and pathway placement, can actually improve the edge area between a proposal and agricultural land by creating a pleasant look and providing a valuable amenity. Each design tool is described and accompanied by several images or diagrams to provide an illustrative example.

The design tools have been broken down into three (3) main subsections:

1. **Subdivision design:** information to help design the subdivision including buffering, parcel configuration, and pathway design.
2. **Site layout:** information to help locate site features: setbacks, building placement, and location of stormwater features.
3. **Edge treatments:** includes landscaping, fencing, and berming.

4.1 Subdivision Design

Subdivision design is the physical layout of a subdivision; lot size, location, road network, placement of pathways, stormwater ponds, and environmental areas. Subdivision design can mitigate many nuisance factors for agricultural and non-agricultural lands. Use existing features on the land and any new infrastructure to provide distance separation or buffering from agricultural land. For example, place municipal reserves, pathways, or stormwater ponds in the agricultural boundary area between agricultural land and the nearest non-agricultural lots. Use topography such as hills or coulees to provide separation for optimal lot location.

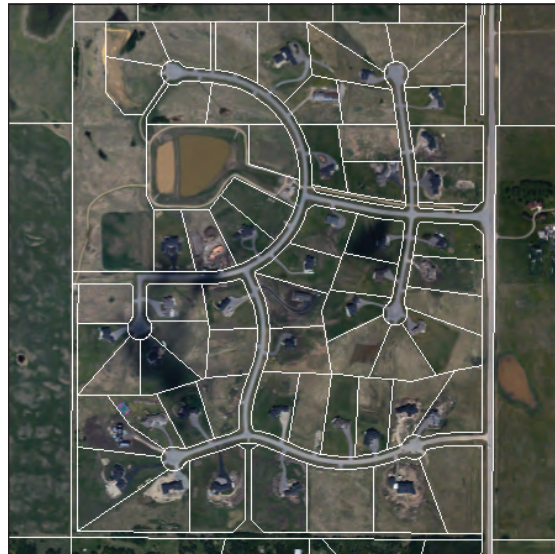
Design tools need to be carefully considered as some may not be appropriate in certain circumstances. For example, stormwater facilities may not be appropriate in areas with a high water table and may cause damage to neighbouring properties if not properly designed. It is important that these facilities be technically sound.

If the adjacent land is within an area structure plan, it may transition one day into non-agricultural uses as well. In these cases, it is important to consider edge treatments that will not create obstacles as lands continue to develop. For example, road networks should be designed to connect to future transition areas and pathways should be able to easily connect to new development.

Subdivision design tools have been organized into two (2) main parts: multi-lot and single-lot development.

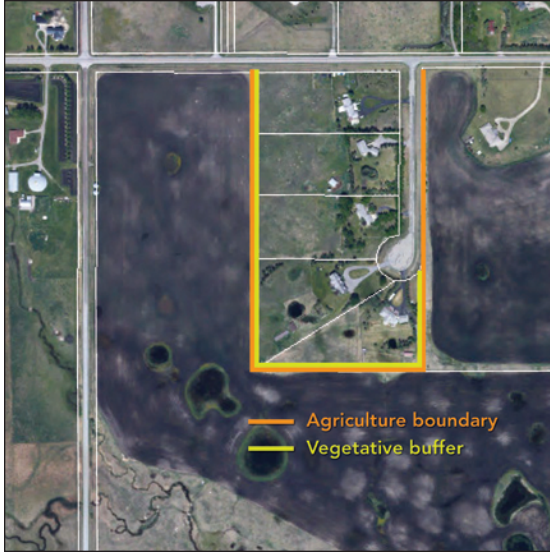
Multi-lot development

1. Buffering – strategically placed elements provide space between agricultural and non-agricultural uses. Providing both distance and visual separation can increase buffer effectiveness – out of sight, out of mind (*Guide to Edge Planning*, 2009). Buffers can include: vegetative buffers, community gardens, or placement of public utility lots (PULs). *Appendix D* provides information on vegetation for buffers and pathway requirements. Further detail on setbacks, landscaping, and fencing is provided in the next two sections.



Multi-lot development: more than one lot – typically larger development proposals.

- A. Vegetative buffers – use plantings of native trees and shrubs or existing natural areas to create a buffer between the new development and the agricultural land. For this type of buffer use:
 - Municipal reserve, which can include pathways combined with strategic tree planting and fencing. Design the pathways to provide separation, buffering, and to minimize trespass onto agricultural lands (*Appendix D*).
 - Environmental reserve or natural areas. If there are undevelopable lands such as coulees, hills, wetlands, or treed areas, design the subdivision so these features are between the agricultural boundary and the new development when possible.



Add a vegetative buffer along the agricultural boundary to provide visual separation and reduce dust and noise from agricultural operations.



Use natural areas such as wetlands and ponds to create distance between the agricultural boundary and non-agricultural uses.



Use a buffer area 15 metres wide, where possible, to create separation between agricultural lands and residential areas.



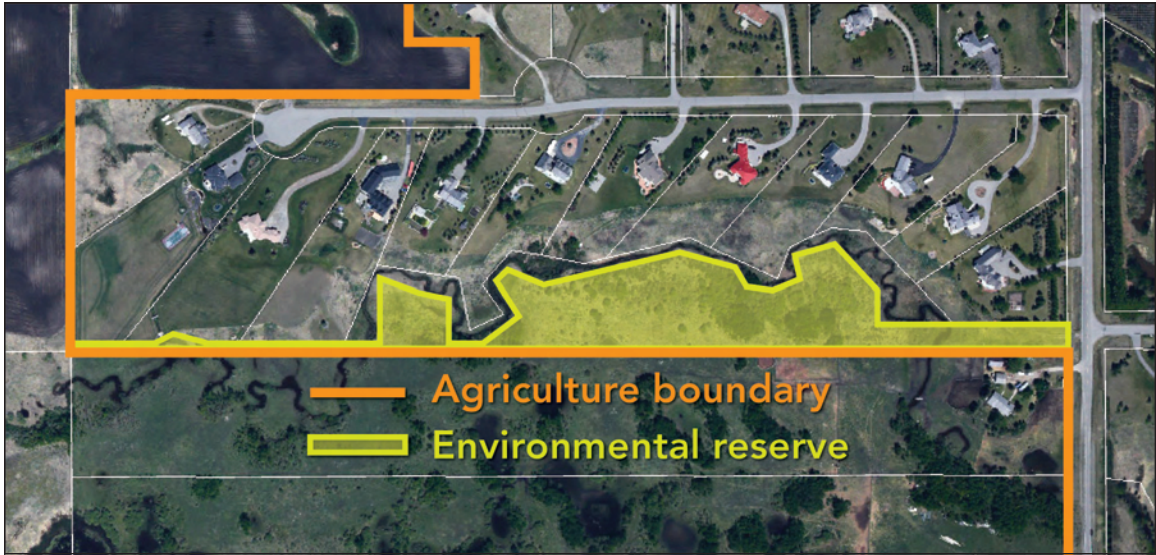
Landscaped pathways can provide a buffer and useable separation.



Planting a vegetative barrier in the 15-metre buffer area adds visual separation. It will help reduce dust, trespassing, and noise.



Example of a linear municipal reserve with pathway and landscaping.



Use undevelopable land (environmental reserve) to buffer differing land uses.

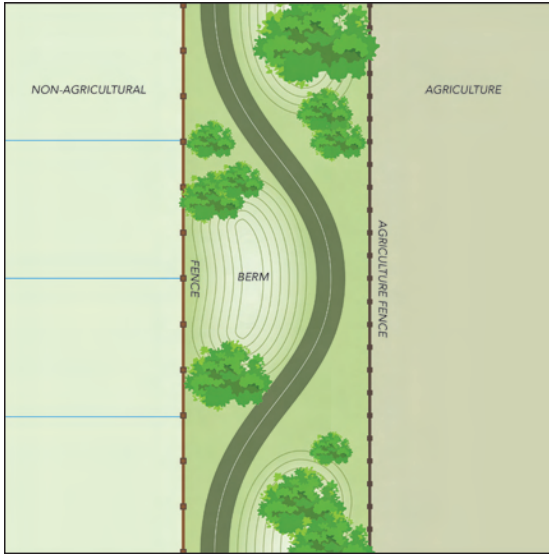


Diagram of municipal reserve buffer with meandering pathway, landscaping, and berming.



Place a community garden or raised planting beds between the principal building and the agricultural boundary.

B. Community gardens – position community gardens between houses and the agricultural boundary to provide physical and visual separation as well as an educational opportunity for residents.

C. Location of public utility lots (PULs) and other infrastructure-related features – PULs can include stormwater facilities such as ponds and conveyance routes, utility corridors, and other areas for stormwater drainage. These features can be strategically positioned, where appropriate, to provide distance separation between agricultural land and the new use. They can also add aesthetic benefits to the edge area.



Place stormwater ponds along the boundary and set buildings further back from the property line.

The use of these types of tools, particularly stormwater management facilities, must be carefully considered. Stormwater facilities must have all applicable technical approvals before being used in this context. This may include a stormwater management plan and approval by the Western Irrigation District, if in proximity to their canal system. Obtaining necessary approvals ensures that stormwater facilities will function properly.

2. Parcel layout – the way in which non-agricultural lots, roads, and other features are designed. This can be done in a manner to reduce unnecessary conflict with agricultural uses. The main goal of these tools is to minimize access between agricultural and non-agricultural areas as well as to minimize the length of the boundary between the two uses, thus reducing conflict. Tools can include: lot configuration, use of topography or natural features, and road design.

A. Lot configuration – how the lots are arranged within the subdivision. Techniques include compact development, placing larger lots along the agricultural boundary, and minimizing the shared boundary.



Cluster houses together on smaller lots and provide open land between the lots and the agricultural boundary. The open land can include parks, natural landscapes, community gardens, or a recreational use.



Locate lots away from the agricultural boundary and use open space for recreational uses.



Shared boundary is minimized with placement of the park along the south boundary.



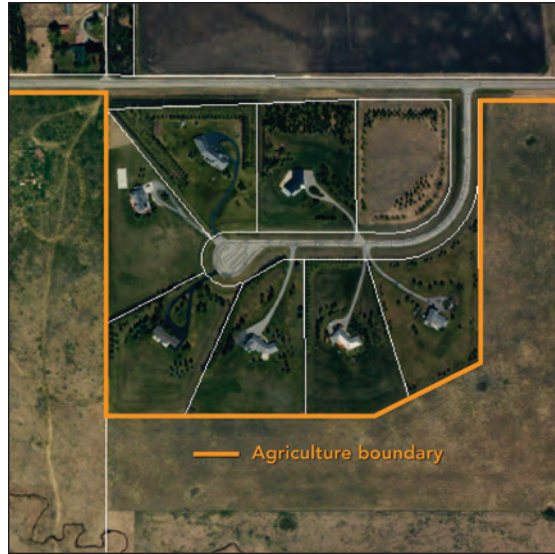
Place larger lots along the agricultural boundary and smaller lots in the middle of the subdivision.

- B. Use of topography/natural features – this is important for reducing concerns with issues like odour and dust. Situate the new development so prevailing winds blow away from houses and use hills or existing trees to provide separation and screening.

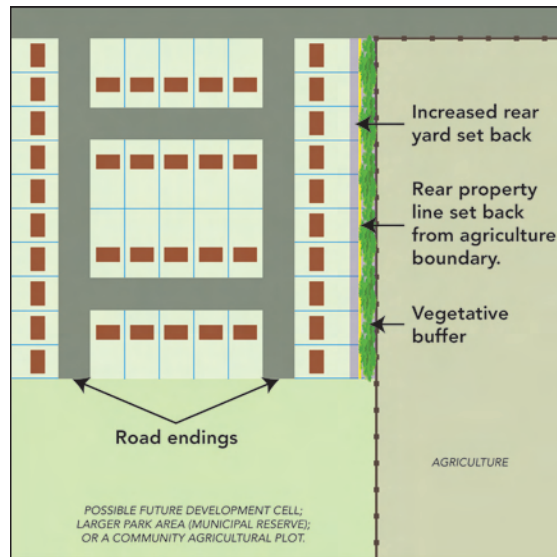
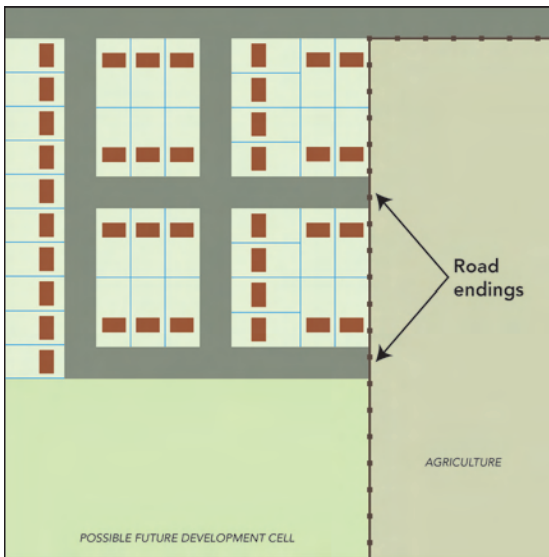


Where possible, design the subdivision so existing tree stands, hills, or coulees can serve as a buffer between new development and agricultural land.

C. Road design – reduce the amount of new road that is going into an agricultural area, especially dead ends or cul-de-sacs that end next to agricultural land as this can promote trespassing by increasing access. While minimizing new roads, attention also needs to be paid to existing access to surrounding uses. It is important that agricultural access is not hindered by the new development.



Cul-de-sac terminates away from boundary to reduce opportunities for trespassing onto the agricultural land.



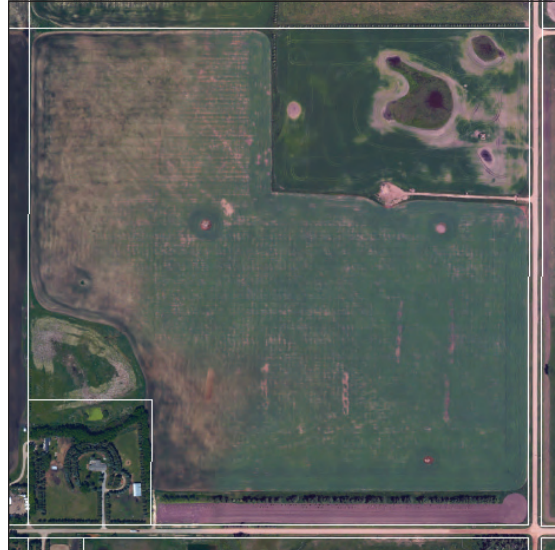
Design roads in a manner that minimizes negative impacts on neighbouring agricultural lands. Right image shows the preferred design as the roads terminate near future development lands, not agricultural lands.

Single lot development

1. Lot location – the proper location of a single new residential, business, or industrial lot within an agricultural area can help to minimize conflict between land uses.

Ideally a new lot should be:

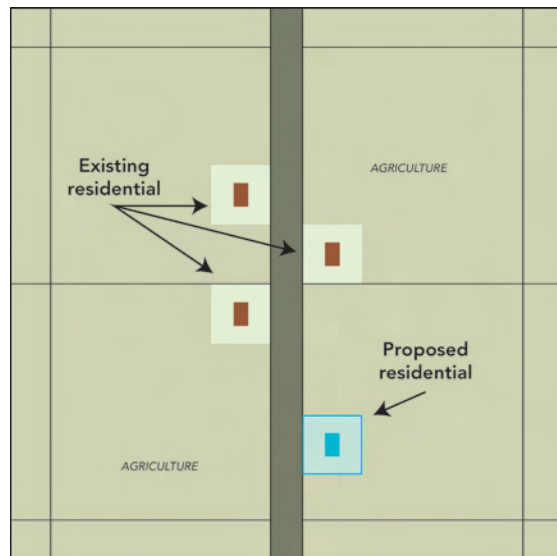
- A. Located adjacent to existing non-agricultural lots.
- B. Located in the corner of an existing agricultural lot.
- C. Located along an established roadway.
- D. No larger than necessary but large enough that a sufficient setback from principal building to agricultural uses can be maintained (15 to 30 metres).
- E. Be located on less productive agricultural lands.



Single lot development: one lot out of a quarter – usually a first parcel out.



In this example, the design tools have been implemented by locating the new home near existing homes, in a corner, and creating only two new boundaries with agricultural land.



In this example, the design tools have not been implemented. The new home is not located near other existing homes. It creates a narrow area that could impede farming, and there are three new boundaries with agricultural land.



This parcel is located in the corner of the quarter, adjacent to other homes, and on the lower agricultural value land. The environmental area also provides a buffer to the north.



New parcels should be located on existing roads.

4.2 Site Layout

Site layout is the design of an individual lot or site. It includes the location of principal buildings, such as houses, and other features including parking areas, gardens, sheds, barns, greenhouses, etc. This is usually carefully considered when applying for a building permit for a house or other principal building. A few minor considerations, such as setting the house back further from an agricultural boundary and the placement of the appropriate vegetation can help reduce potential problems and increase enjoyment of the property. Other tools include stormwater and building design.

1. Setbacks – the setback requirements in the *Land Use Bylaw* for most parcels range from 7 to 15 metres for rear yard and 3 to 6 metres for side yard (measured from property line to nearest edge of principal building). Larger rear and side yard (for corner lots) setbacks for lots along the agricultural boundary, especially when coupled with tree plantings, can create separation and minimize problems such as dust, noise, and trespass. If a vegetated buffer is present, 15 metres to principal building may be sufficient (*Section 4.1: 1. Buffering*). If no vegetated buffers are considered, the setback should be increased to a minimum of 30 metres. This can vary based on topography, so each site must be examined individually to determine sufficient setbacks.



Place larger lots along the agricultural boundary and set the houses 15 metres back from the property line.



These houses are too close to the agricultural boundary and there is minimal vegetative buffer. The opportunity for complaints from homeowners of dust and noise are increased as effective buffering and setbacks have not been used.



In this example, the house is set back significantly from the agricultural boundary. Tree stands provide further screening.

2. Stormwater design – place stormwater ponds or design drainage channels between principal buildings and the agricultural boundary to provide separation. All stormwater ponds or drainage channels must have necessary technical approvals.

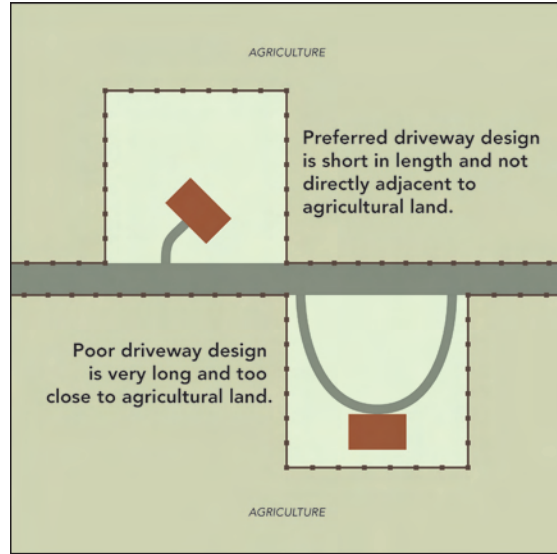
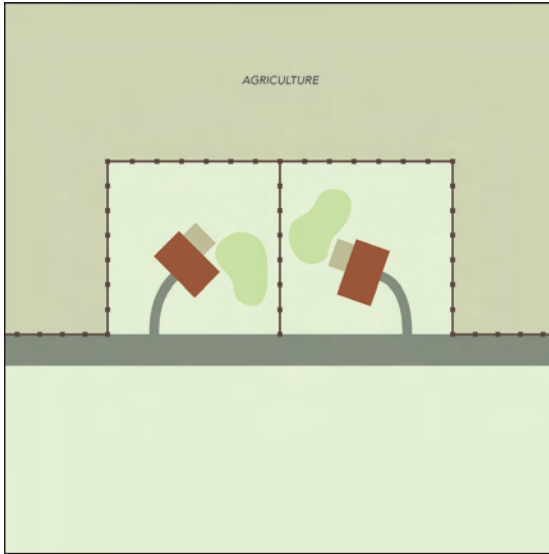


Place stormwater ponds between principal buildings and the boundary to create a buffer and serve as an amenity.

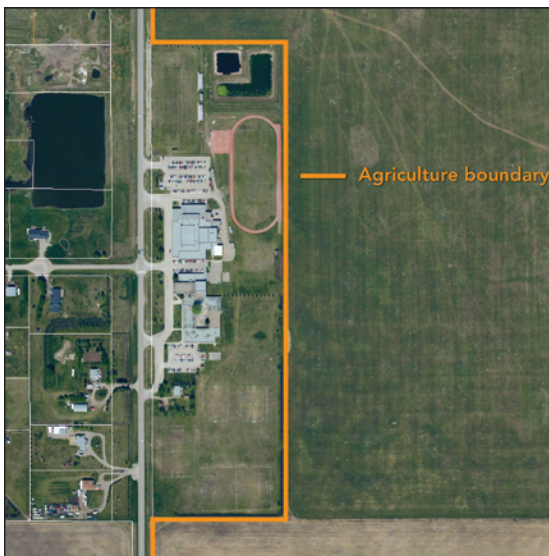


A storm pond situated between boundary and home for further separation.

3. Location and design of site elements – areas of intensive use such as the principal building and outdoor entertainment areas can be located away from the boundary. Secondary or less intensive uses such as accessory buildings, parking lots, storage areas, greenhouses, and landscaping can be situated near the agricultural boundary to provide visual and physical separation.



Orient the house away from the agricultural land and place outdoor entertainment areas and garden plots adjacent to similar uses or away from the edge.



Principal facility is situated closer to the road while the less intensive uses, formalized playing fields and lagoons, are located near the agricultural boundary.

4.3 Edge Treatments

Edge treatments are additional features that can be used to lessen the impact that agricultural and non-agricultural land uses have on one another. These tools can also be used in areas that are already developed to mitigate existing nuisance factors. Edge treatments include fencing, landscaping, and berming.

1. Fencing – proper fencing is very important to reduce trespassing onto agricultural lands and the escape of livestock onto non-agricultural lands. Fencing can be very attractive; the appropriate fencing type is dependent on site context. See *Appendix E* for a list of recommended fencing specifications.



Fencing livestock in and people/pets out.



Fencing to screen business use.



Adding wire mesh to a decorative fence will provide a barrier for pets and livestock.

2. Landscaping – tree and shrub plantings along the boundary can reduce impacts, provide visual separation, and be an attractive amenity. See *Appendix D* for a list of native species that are livestock friendly. Also consider naturalized backyards for lots along the agricultural boundary.



Landscaping with native trees and shrubs can be very effective in reducing noise and dust. The fence provides an additional barrier.



Landscaping can not only mitigate problems, but can be an attractive amenity.

3. Berming – a raised mound of earth that is used to provide a buffer between uses. Berms can be landscaped and incorporate pathways and planting beds. Berms are particularly useful when an adjacent use has a high potential to cause conflicts. Examples include gravel pits, industrial uses, commercial uses, and higher density residential development.

See Appendix D for further information on berms.

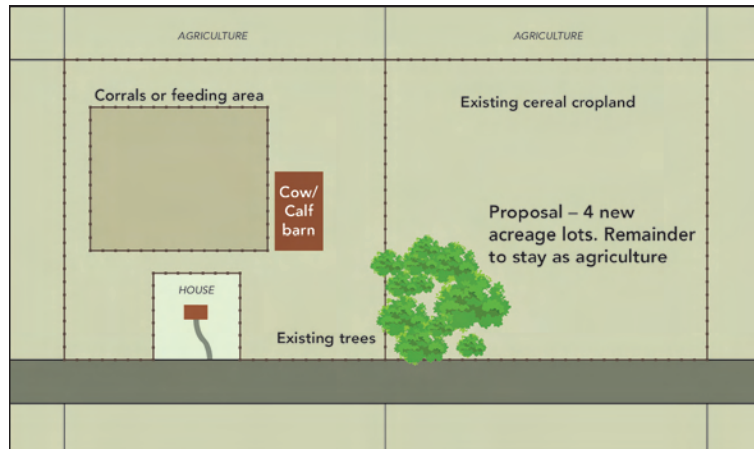


Example of a landscaped berm.

Example of site analysis and selection of design tools

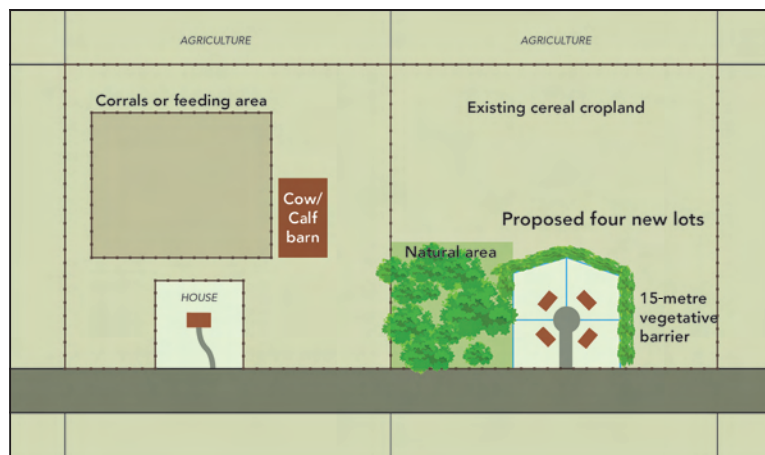
Key results of site analysis:

- Agricultural boundary area – need to consider impact on the cattle operation and the feeding area, but also the new boundary on the existing parcel once the acreages are created.
- Consider location of new lots in relation to the barn.
- Is the type of fence adequate for keeping livestock out?
- Use the existing tree stand as a buffer.



Design tools chosen:

- Buffer – keep the natural area (tree stand) intact as a buffer between the new lots and the cattle farm.
- Use a cul-de sac so the road does not terminate on the agricultural land.
- Place a 15-metre vegetative buffer along the new lots to buffer the cropland.
- Place new homes at least 15 metres from rear property line.



Appendix A: Worksheets

This appendix contains two worksheets that will help you apply the design guidelines.

- For a development permit or building permit application where a worksheet has NOT been completed with a previous application, use **Worksheet 1**.
- For a local plan, redesignation, or subdivision application where a worksheet has NOT been completed with a previous application, use **Worksheet 2**.

For those applications where a worksheet has been previously submitted, please attach the completed worksheet and evaluation with the application package.

Note: If a redesignation and subdivision are being applied for concurrently, only one worksheet is required.

Worksheet 1

DEVELOPMENT PERMIT OR BUILDING PERMIT APPLICATION

Use this worksheet for development or building permits for new building and/or outbuildings, new agricultural uses, driveway design, and other features. It will help identify other design tools that can maximize the enjoyment a property and minimize land use conflict with neighbouring agricultural activities. This worksheet should only be used for applications in which a worksheet has not been completed at an earlier planning stage (e.g. local plan, redesignation, and subdivision).

While completing this worksheet, be sure to have a copy of the Agricultural Boundary Design Guidelines nearby for reference and further detail.

Site Analysis:

1. What type of land use is immediately next to the proposal (residential, agricultural, business, etc.)? _____

2. If the adjacent lands are agricultural, what type of agricultural operation is occurring on the adjacent lands (e.g. ranching/pasture, cultivation/cropping, greenhouses, etc.)? _____

3. If the adjacent lands are not agricultural, what types of uses are occurring (e.g. residential, business, industrial, institutional, etc.)? _____

4. What potential impacts could occur between the subject lands and neighbouring lands? _____

5. Are there topographical or environmental features on the subject property? If so, what are they?

Please select all that apply:

- Creeks, ravines, coulees, draws, and other overland drainage patterns
- Existing vegetation such as tree stands
- Depressions or changes in elevation
- Wetlands/sloughs

6. What are the prevailing winds and other significant weather patterns?
(e.g. If you had dust blowing, in what direction would it typically blow?)

7. What tools from *Section 4* of the Agricultural Boundary Design Guidelines will you implement to mitigate potential land use conflict?

Please select all that apply:

- 15–30-metre setbacks for new buildings, depending on buffers used.
 - Buildings designed taking agricultural operations into account.
 - Additional landscaping used, including berms etc.
 - Minimal driveway length.
 - Appropriate fencing used.
 - Other _____
8. **Please use a copy of the site plan you provided in support of an application to identify the agricultural boundary area and add any existing features or proposed tools from the Agricultural Boundary Design Guidelines that will be implemented to minimize potential land use conflict. Please attach the diagram to this worksheet or submit it as a digital file.**

Worksheet 2

LOCAL PLAN, REDESIGNATION, AND SUBDIVISION APPLICATIONS

Use this worksheet if applying for a local plan (conceptual scheme or master site development plan), redesignation, or subdivision. This worksheet will help determine the best layout for the proposed subdivision/site and help incorporate features that will maximize the enjoyment of the new development and minimize land use conflict with neighbouring agricultural activity. While completing this worksheet be sure to have a copy of the Agricultural Boundary Design Guidelines nearby for reference and further detail.

Site Analysis:

1. Does the subject land share a border with agricultural land? Check zoning – *Land Use Bylaw*, www.rockyview.ca. Be sure to check the zoning of all adjacent land uses. *If you are unsure if the guidelines apply, please contact Planning Services.*

Agricultural zonings include:

- RF: Ranch and Farm District
 - RF-2: Ranch and Farm Two District
 - RF-3: Ranch and Farm Three District
 - AH: Agricultural Holdings District
2. If the adjacent lands are agricultural, what type of agricultural operation is occurring on the adjacent lands (e.g. ranching/pasture, cultivation/cropping, greenhouses, etc.)? _____

 3. Is the subject land within an area structure plan (ASP)? For a list of ASPs, please visit the County's website.
 - A. If YES:
 - i. Are the subject lands within, but on the edge, of the ASP? _____
 - ii. If not on the boundary, what is the proposed future land use of adjacent lands? See the land use map of the ASP. _____

 - B. If NO:
 - i. What is the predominant land use in the area (e.g. are most lands in the vicinity used for agriculture, business, residential use)? _____

4. What effects could the agricultural practices have on the proposed development?

5. What effects could the proposed development have on adjacent agricultural development? _____

6. Are there topographical or environmental features on the subject property?
If so, what are they?

Please select all that apply:

- Creeks, ravines, coulees, draws, and other overland drainage patterns
- Existing vegetation such as tree stands
- Depressions or changes in elevation
- Wetlands/sloughs

7. What are the prevailing winds and other significant weather patterns?
(e.g. If you had dust blowing, in what direction would it typically blow?)

8. What tools from *Section 4* of the Agricultural Design Guidelines will be implemented to minimize potential land use conflict?

Please select all that apply:

Buffering:

- Vegetative buffers
- Pathway and municipal reserve placement and design
- Placement of community gardens
- Location of public utility lots.

Location of stormwater facilities

Lot configuration:

- Compact development
- Location of larger lots
- Use of less productive agricultural lands
- Lots allow for increased setbacks adjacent to agricultural lands. Goal is 30 metres to principal building

Topography:

- Consideration of prevailing winds
- Environmental reserve placement and design

Buildings:

- Buildings are designed taking agricultural operations into account

Other: _____

Road design:

- Avoid dead ends and cul-de-sacs next to agricultural land
- Minimize road access to agricultural lands
- Avoid creation of new roads along the boundary between Agricultural and non-agricultural lands
- Minimal driveway length

Edge treatments:

- Landscaping is incorporated
- Appropriate fencing is used

Single-lot subdivision:

- Located adjacent to other existing non-agricultural lots
- Located in the corner of an existing agricultural lot
- Located along an established roadway
- No longer than necessary but large enough that a sufficient setback from agricultural uses can be maintained
- Located on less productive agricultural lands

9. Please use a copy of the site plan you provided in support of the application to identify the agricultural boundary area and add any existing features or proposed tools from the Agricultural Boundary Design Guidelines that will be implemented to minimize potential land use conflict. Please attach the diagram to this worksheet or submit it as a digital file.

Appendix B: Glossary of Terms

Adjacent land – land that is immediately next to the lands subject to an application. May share a property line or be separated by a road or other physical barrier.

Agricultural land – land that has an agricultural land use designation, as defined by the Rocky View County *Land Use Bylaw*.

Agricultural boundary area - the area that extends on both sides of the boundary that includes elements or features that could create impacts on either property. Size of area could vary depending on site specific circumstances, but 300 metres on either side is typical.

Agricultural operations – a general term for a wide range of activities conducted by farmers, ranchers, or local food producers related to raising, harvesting, and marketing crops or livestock. Equine facilities are also considered agricultural operations within the County.

Compact development - sensitively integrates lots with the natural features and topography of a site by grouping development on smaller lots, while permanently preserving a significant amount of land for conservation, recreation, or agricultural uses.

Intensive agricultural uses – agricultural operations that concentrate livestock or crops in corrals or buildings (e.g. feedlots, greenhouses, etc.).

Local plan – refers to a conceptual scheme or master site development plan. A local plan will have unique planning requirements based on the planning direction provided in the area structure plan. Local plans must also address the general requirements for preparing a conceptual scheme or master site development plan identified in the *County Plan*.

Municipal reserve – municipally-owned land which may be used by a municipality or school board for any or all of the following purposes: public park, public recreation area, school board purposes, or to separate lands that are used for different purposes.

Naturalized backyards - naturalization is the process of transforming a cultivated landscape, such as a lawn, into a more natural landscape. Natural landscapes feature native plants arranged to mimic naturally occurring habitat. A native plant is one which was common to the area before European settlement.

Open space – includes land and water areas with minimal development that are either publicly owned or offering public access.

Parks – development of public land specifically designed or reserved for the general public for active or passive recreational uses and includes all natural or man-made landscaping, facilities, playing fields, buildings, and other structures that are consistent with the purpose of general park land.

Pathways/Trails - Any recognized route that is formally engineered, constructed and hard surfaced with asphalt or other hard surface materials.

Principal building – a building that occupies the major or central portion of a site, is the main building on the site, or constitutes the primary purpose for which the site is used.

Trail – any recognized non-paved route which is surfaced with natural or aggregate materials.

Transition area - an area currently used for agricultural purposes but identified in an area structure plan for a future non-agricultural use (e.g. residential, industrial, institutional). Transition areas require careful management so as not to impose design and buffering solutions which may create obstacles at future stages of development.

Appendix C:

List of Agricultural Types and Resources

Common Agricultural Types and Descriptions

The following is a list of agricultural types common in Rocky View County. The description will help identify if any of these operations are occurring next to the subject property.

Livestock operations:

Cow/calf – usually 50 to several hundred beef cows and calves on pastureland during the summer and fall. In the winter they are gathered together and fed/watered near the farm site, barns, or corrals for protection from the weather.

Cattle feedlot – intensive operation where large numbers (several thousand) of beef cattle are kept in corrals/pens and fattened for meat processing.

Dairy operation – intensive operation where usually 50+ milk cows are kept, often pastured during summer and fall, and housed in large barns in the winter. Young dairy animals are usually raised on site as well.

Sheep and lamb – usually flocks of 20 to hundreds of sheep and lambs in close proximity to barns and corrals in winter and pastured in the summer.

Poultry (layers, broilers, and turkeys) – usually larger flocks (500 to thousands), raised intensively in barns with large ventilator fans and feed bins (sometimes with outdoor pens for turkeys).

Pigs/Hogs – intensive operation where hundreds of pigs are grown in barns, often with corrals for access to outdoors.

Horse training and boarding – usually riding arenas and stable facilities with corrals and small pastures for pleasure horse boarding, training, riding, and events.

Elk, bison, llamas, alpacas, goats – specialty livestock that are raised occasionally throughout the County. Usually penned and pastured with high page wire fences which are very obvious.

Cropping:

Grain farming (cereals, oilseeds, corn) – very typical throughout the County where fields are tilled and seeded in spring, harvested in the fall, and straw baled or distributed back on the fields. Wheat, barley, and canola are the most common crops and fields are generally untouched over winter (appearing vacant or not used).

Specialty crops (flax, peas, potatoes) – similar to above but not as common. During the winter, fields appear vacant.

Hayland – a mixture of perennial grass and legumes that are swathed and baled, usually in mid-July.

Pasture – a mixture of perennial grass and legumes that are grazed by livestock throughout the summer and often in the fall and winter.

Horticulture:

Market gardens, local food – large gardens of vegetable and food crops grown for local sale/distribution, often only a few acres as part of a larger grain or livestock farm.

Greenhouses – small and large greenhouse mostly operating in early spring through fall, usually very obvious but often protected from weather by shelterbelts.

Tree farms – seedlings and immature trees grown (or sometimes more mature ones sourced from British Columbia) in fields or portions of fields for resale, often to the landscaping industry.

Agricultural Information Resources

The following is a list of links to various websites containing information on multiple aspects of farming including food care, pesticide application, and buying rural property. *Please note, the websites may change address or content without notice.*

1. Things to consider when buying an acreage or rural property
http://www.landstewardship.org/media/uploads/120206-GAG_Chapter2_web.pdf
2. Ag Operation Practices Act
<http://www.qp.alberta.ca/documents/Acts/A07.pdf>
3. All About Farming Forum
<http://allaboutfarming.proboards.com/>
4. Canola Harvest Timing
[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/faq7302?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/faq7302?opendocument)
5. Herbicide Application - Frequently Asked Questions
[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/faq6728?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/faq6728?opendocument)

6. Manure Application – Frequently Asked Questions
[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/faq7579?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/faq7579?opendocument)
7. Farm Food Care (Field Crops)
<http://www.farmfoodcare.org/images/pdfs/Field%20Crops.pdf>
<http://bit.ly/1EAIBD7>
8. Farm Food Care (Beef Cattle)
<http://www.farmfoodcare.org/images/pdfs/Beef%20Cattle.pdf>
<http://bit.ly/1QFWCEO>
9. The Real Dirt on Farming
<http://www.realdirtontfarming.ca/assets/docs/PDFs/2014-DIRT-DIGEST-ENG.pdf>
<http://bit.ly/1J6TM6m>
10. Virtual Farm Tours
(Grain Farm) <http://www.virtualfarmtours.ca/en/grainFarms/grain/index.html>
(Cow Calf Farm) <http://www.virtualfarmtours.ca/en/beefCattleFarms/cowCalfFarm/index.html>
(Dairy Farm) <http://www.virtualfarmtours.ca/en/dairyCowFarms/tieStall/index.html>

Appendix D: Buffer Recommendations – Pathways, Setbacks, Landscaping, Berms

This appendix contains recommendations for designing effective and attractive buffers that include pathways and landscaping. A list of livestock friendly landscaping species is also provided. For complete details and requirements of parks and pathways in Rocky View County, please refer to the *Parks and Pathways: Planning, Development, and Operational Guidelines*. This document can be found on the website at www.rockyview.ca.

Buffers with pathways and landscaping

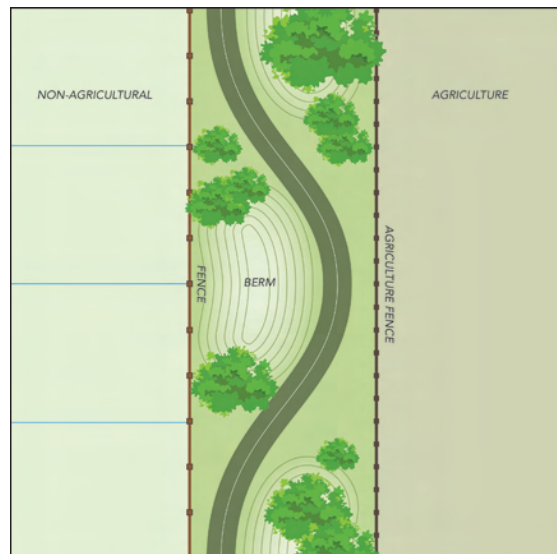
Recommended widths:

- Buffer width should ideally be a minimum of 15 metres.
- Pathway should be at least 2.5 metres wide with a 1-metre clear zone from edge of pathway.

Pathway should meander, to break up sightlines, provide screening from all angles, and improve the experience of the user. From any angle, pathway users should see buffering features (e.g. berms, planting beds). This creates a pseudo ‘barrier’ for users. Using these features, along with appropriate fencing, will create a visual barrier for the agricultural lands, reduce dust and noise, and discourage trespass. Enhance the buffer and pathway experience by placing planting beds at key locations; shrubs or trees planted in clusters.

Berms:

Berms can be used in the 15-metre buffer area. Ideal berm configuration is 3:1 slope, varied in size and width (e.g. curvilinear, oblong). If berms are used in conjunction with a pathway, alternate the location. For example overlap with the centre sightline.



Landscaping

It is important to choose the best plants, trees, or shrubs for the buffer. Native species are generally hardier and require less care. The list below contains species that have been selected due to their suitability within the various climatic regions found in Rocky View County.

When choosing vegetative buffers, be sure to consider time involved for trees, shrubs or vegetation to mature and serve the need it was intended for. Starting a buffer with more mature plants at the onset of the landscaping plan will decrease the time required to provide an effective screen.

Preferred Landscaping Plants

(Parks and Pathways: Planning, Development, and Operational Guidelines)

Coniferous Trees	
Common Name	Latin Name
Lodgepole Pine	<i>Pinus contorta</i>
Mongolian Strain Scots Pine	<i>Pinus sylvestris mongolica</i>
Rocky Mountain Juniper	<i>Juniperus scopulorum</i>
Siberian Larch	<i>Larix siberica</i>
White Spruce	<i>Picea glauca</i>
Deciduous Trees	
Common Name	Latin Name
American Elm	<i>Ulmus americana</i>
American Mountain Ash	<i>Sorbus americana</i>
Balsam Poplar	<i>Populus balsamifera</i>
Brooks #6 Poplar	<i>Populus x 'Brook #6'</i>
Burr Oak	<i>Quercus macrocarpa</i>
Crabapple 'Pink Spires'	<i>Malus x 'Pink Spires'</i>
Fountain Birch	<i>Betula occidentalis (fontinalis)</i>
Green Ash – "Patmore"	<i>Fraxinus pennsylvanica 'Patmore'</i>
Littleleaf Linden	<i>Tilia cordata</i>
Manitoba Maple	<i>Acer negundo</i>
Ohio Buckeye	<i>Aesculus glabra</i>
Pincherry	<i>Prunus pennsylvanica</i>
River Alder	<i>Alnus tenuifolia</i>
Round Leaf Hawthorne	<i>Crataegus chrysocarpa (rotundifolia)</i>
Russian Hawthorne	<i>Crataegus ambigua</i>
Schubert Chokecherry	<i>Prunus virginiana 'Schubert'</i>

Silver Maple	<i>Acer saccharinum</i>
Snowbird Hawthorn	<i>Crataegus x mordenensis 'Snowbird'</i>
Tatarian Maple	<i>Acer tataricum</i>
Toba Hawthorn	<i>Crataegus x mordensis 'Toba'</i>
Trembling Aspen	<i>Populus tremuloides</i>
Ussurian Pear	<i>Pyrus ussuriensis</i>
Western Cottonwood	<i>Populus deltoides</i>
Western Mountain Ash	<i>Sorbus scopulina</i>
Tall Shrub	
Common Name	Latin Name
Bebb Willow	<i>Salix bebbiana</i>
Chokecherry	<i>Prunus virginiana</i>
Double Flowering Plum	<i>Prunus triloba 'Multiplex'</i>
Green Alder	<i>Alnus crispa</i>
Red Elder	<i>Sambucus racemosa</i>
Sandbar Willow	<i>Salix exigua/interior</i>
Saskatoon	<i>Amelanchier alnifolia</i>
Shining Willow	<i>Salix lucida</i>
Silver Buffaloberry	<i>Shepherdia argentea</i>
Medium Shrub	
Common Name	Latin Name
Bog Birch	<i>Betula glandulosa</i>
Canadian Buffaloberry	<i>Sherpherdia canadensis</i>
Common Ninebark	<i>Physocarpus opulifolius</i>
Gold Currant	<i>Ribes aureum</i>
Mock Orange	<i>Philadelphus lewisii</i>
Mugo Pine	<i>Pinus mugo mugo</i>
Red Osier Dogwood	<i>Cornus sericea</i>
Sweetberry Honeysuckle	<i>Lonicera caerulea</i>
Low Shrub	
Common Name	Latin Name
Birch Leaf Meadowsweet	<i>Spiraea betulifolia</i>
Bracted Honeysuckle	<i>Lonicera involucrata</i>
Buckbrush	<i>Symphoricarpos occidentalis</i>
Common Juniper	<i>Juniperus communis</i>
Common Wild Rose	<i>Rosa woodsii</i>
Creeping Mahonia	<i>Mahonia repens</i>

Dewberry	<i>Rubus pubescens</i>
Gooseberry	<i>Ribes oxycanthoides</i>
Labrador Tea	<i>Ledum groenlandicum</i>
Lowbush Cranberry	<i>Viburnum edule</i>
Prairie Rose	<i>Rosa arkansana</i>
Prickly Rose	<i>Rosa acicularis</i>
Sage	<i>Artemisia cana</i>
Shrubby Cinquefoil, Potentilla	<i>Potentilla fruticosa</i>
Snowberry	<i>Symphoricarpos albus</i>
Thimbleberry	<i>Rubus parviflorus</i>
Three Lobed Sumac	<i>Rhus trilobata</i>
Wild Raspberry	<i>Rubus ideaus</i>
Vines	
Common Name	Latin Name
Purple Clematis	<i>Clematis occidentalis</i>
Dropmore Honeysuckle	<i>Lonicera bella</i>
Western White Clematis	<i>Clematis lingusticifolia</i>
Ground Cover	
Common Name	Latin Name
Bog Cranberry	<i>Vaccinium vitis-idaea</i>
Bunchberry	<i>Cornus canadensis</i>
Creeping Juniper	<i>Juniperus horizontalis</i>
Dwarf Mugo Pine	<i>Pinus mugo 'Pumilio'</i>
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>
Savin Juniper	<i>Juniperus sabina</i>
Aquatic Mixture	
Common Name	Latin Name
Baltic Rush	<i>Juncus balticus</i>
Common Cattail	<i>Typha latifolia</i>
Common Great Bulrush	<i>Scirpus validus</i>
Creeping Spike Rush	<i>Eleocharis palustris</i>
Hard-Stem Bulrush	<i>Scirpus acutus</i>
Hornwort	<i>Ceratophyllum demersum</i>
Horsetail Rush	<i>Equisetum hyemale</i>
Water Sedge	<i>Carex aquatilis</i>
Water Smartweed	<i>Polygonum amphibium</i>

Aquatic Plants	
Common Name	Latin Name
Alkali Buttercup	<i>Ranunculus cymbalaria</i>
Bottle Brush Sedge	<i>Carex comosa</i>
Golden Sedge	<i>Carex aurea</i>
Soft Stem Bulrush	<i>Scirpus tabernaemontani</i>
Small Flowered Bulrush	<i>Scirpus microcarpus</i>
Water Sedge	<i>Carex aquatilis</i>

Care and Maintenance:

Maintaining the landscaping on a property, especially a vegetative buffer, is important to ensure that it remains healthy and effective. The following links are to websites with a number of helpful tips and suggestions for landscaping and maintenance.

1. Tree Planting Guide; [treecanada.ca](https://treecanada.ca/en/resources/publications/tree-planting-guide/);
<https://treecanada.ca/en/resources/publications/tree-planting-guide/>
2. Tree Pruning Factsheet;
[www.agric.gov.ab.ca](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/apa15391/$file/tree_pruning_tips_sheet2.pdf?OpenElement)
[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/apa15391/\\$file/tree_pruning_tips_sheet2.pdf?OpenElement](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/apa15391/$file/tree_pruning_tips_sheet2.pdf?OpenElement)

Appendix E: Fencing Recommendations

The appropriate type, style, and height of fence will depend on what land uses are placed adjacent to agricultural land. In this appendix, fencing recommendations have been divided into two main categories: 1) residential developments and 2) business, commercial, industrial, institutional, and recreational developments. The table below provides suggested heights and materials for each category.

	Residential development (small or large scale)	Business, commercial, industrial, institutional, and recreational development
Recommended Fencing Material	<ul style="list-style-type: none"> • Solid wood/ plaster/stone • Rail or open wood with attached metal mesh or woven wire 	<ul style="list-style-type: none"> • Chain link with or without woven plastic slats • Solid wood or metal privacy
Recommended Fence Height	<ul style="list-style-type: none"> • 1.5–1.8 metres (5–6 feet) 	<ul style="list-style-type: none"> • 1.8–3.7 metres (6–12 feet)
Primary Purpose	<ul style="list-style-type: none"> • Attractive while keeping pets and children protected from livestock or cropping operations • Privacy 	<ul style="list-style-type: none"> • Privacy • Reduce trespassing • Increase security
Most applicable when adjacent to...	<ul style="list-style-type: none"> • Livestock facilities, pastures, and cropland 	<ul style="list-style-type: none"> • Most types of agricultural operations

The following pictures are examples of various fencing types that can be used for buffers or edge features.

Solid wood/Plaster/Stone



Rail/Open wood with mesh or wire



Chain link



Rocky View County

911-32 AVENUE NE, CALGARY, AB T2E 6X6

PHONE 403-230-1401 | FAX 403-277-5977 | WEB www.rockyview.ca



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