

# Infosheet #9 Livestock Yards and Outdoor Confinement Areas (OCAs)

This infosheet provides background to Worksheet #9 of the *Environmental Farm Plan Workbook*. It outlines options you could adopt to address problem areas in your operation. In most cases you'll need more information before implementation: please refer to the resource materials listed in the infosheet, and consult OMAF Environmental Farm Plan (EFP) Technical Advisors.

All options are classed as Actions, Compensating Factors or Monitoring. Actions address the areas of concern identified, and will change the rating to (3) or Best (4). Compensating Factors are alternatives that will adequately address the concerns, but will not change the rating in the EFP worksheets. Monitoring is an alternative only in special circumstances and is explained in the infosheet when and how it can be used.

## Location

| ISSUE  | WHAT CAN YOU DO?   |
|--|--|
| <p><b>9-1 Distance from livestock yard to nearest surface water</b></p> <p>The shorter the distance between the livestock yard and the surface water (e.g. stream, ditch, catch basin), the greater the risk of contaminating surface water supplies. Steeply sloping topography and heavy soils will further increase the contamination risk to surface water.</p> <p>Some municipalities may have "distance to a water source" as part of their zoning requirements. Ontario's <i>Nutrient Management Act</i> (O.Reg as amended) also identifies minimum setback requirements for livestock yards that are defined and regulated under the <i>Nutrient Management Act</i> as an outdoor confinement area (OCA) if they are also used</p> | <p><b>OPTION #1 – ACTION</b></p> <p><b>Relocate yard an adequate distance from surface water:</b></p> <ul style="list-style-type: none"> <li>locate yard downslope from water where possible</li> <li>new livestock yard location should change the final EFP distance rating to a (3) or better.</li> </ul> <p><b>OPTION #2 – ACTION</b></p> <p><b>Redirect watercourse away from livestock yard:</b></p> <ul style="list-style-type: none"> <li>a small watercourse could be redirected and moved farther away from the livestock yard or moved underground through a non-perforated pipe system – make sure necessary approvals from relevant agencies (e.g. MOE, MNR, DFO, Municipality, and local CA) are received before making this change. Note, that many have found this option to be cost prohibitive. Approvals may also be difficult to obtain</li> <li>new surface water location should change the final EFP distance rating to a (3) or better.</li> </ul> |

as a manure storage.

### **OPTION #3 – ACTION**

#### **Increase the flow path distance between surface water and livestock yard:**

- earthen diversions can be built that will redirect yard runoff to run alongside the watercourse or cause it to meander in an upslope area for a distance instead of running directly to the surface water. This increases the distance the yard runoff has to travel before entering surface water. It allows for deposition and infiltration to occur along the flow path similar to what occurs with a natural setback. Ensure any berming will not cause or increase erosion on either your property or neighbouring lands. Professional assistance to site and design berms is recommended when such work is being considered, particularly along larger watercourses. A permit from the local Conservation Authority will be necessary if work is done in floodplain areas.
- length of flow path should be equivalent to or greater than setback distance in (3).

### **OPTION #4 - MONITORING**

**For existing livestock yards that have, or will have within two years, full containment of yard runoff, and are in good working condition (no leaks or cracks), monitor yard/containment regularly, visually checking for leaks, cracks, seepage or overtopping of yard runoff.**

#### **FOR MORE INFORMATION:**

*Nutrient Management Act*, Ontario Regulation. 267/03, as amended, and associated protocols, Contact your Local OMAF Agricultural Engineer or Nutrient Management Specialist  
Local Conservation Authority (CA)

---

### **9-2 Distance from livestock yard to well**

The greater the distance between the livestock yard or OCA and the well, the less chance there is of yard runoff reaching the well and contaminating it. If yard runoff moves down to the ground water and

### **OPTION #1 – ACTION**

#### **Relocate yard an adequate distance from well:**

- when a new livestock yard is constructed, it should be located at a safe distance from the well and preferably downslope from the well if possible. Minimum setbacks from wells for regulated OCAs are set out in Ontario Regulation 267/03, as amended
- livestock yard location should change the final EFP distance rating to a (3) or better
- where the minimum distances cannot be attained due to site restrictions, seek guidance from MOE

contaminates it, the potential for contamination of the well is lower if the well is located further away from the livestock yard or OCA. The soil type and depth to water table and bedrock will also influence the contamination potential.

- test well water for indicator bacteria at least three times a year, and once a year for other parameters (such as nitrate) until the new livestock yard or OCA is built.

#### **OPTION #2 – ACTION**

##### **Locate new well away from livestock yard or OCA:**

- make sure old well is properly decommissioned (abandoned according to Ontario Regulation 903)
- new well location should change the final EFP distance rating to a (3) or better
- test well water for indicator bacteria at least three times a year, and once a year for other parameters (such as nitrate) until the new water well is installed.

#### **OPTION #3 – MONITORING**

**For existing livestock yards that have, or will have within two years, full containment of yard runoff and are in good working condition (no leaks or cracks), test the well water for indicator bacteria at least three times a year, and once a year for other parameters (such as nitrate):**

- monitoring of well water is NOT A SOLUTION. If a test reveals contamination of the well water, have a plan of action in place to immediately identify and address the source of contamination
- if you have an EFP rating of (1), contact MOE for further guidance.

#### **FOR MORE INFORMATION:**

*Nutrient Management Act*, Ontario Regulation 267/03, as amended, and associated protocols.  
Contact your local OMAF Agricultural Engineer or Nutrient Management Specialist  
*Water Wells and Groundwater Supplies: Recommended Methods for Plugging Abandoned Water Wells*, MOE bulletin  
Best Management Practices Book: *Well Water Information Kit*, Order No. BMP 12K (OMAF and MOE)

---

**9-3 Distance from livestock yard to subsurface perforated or clay drainage tile**

Surface water is at less risk if there are no subsurface perforated tile drainage systems in close proximity to the yard area collecting and carrying yard runoff directly to surface streams or ditches

**OPTION #1 – ACTION**

**Remove all perforated drainage tile located beneath and within 75 ft. of the livestock yard:**

- refer to tile drain maps or records to locate all known subsurface tiles. May require some trenching around the yard area to find all suspected subsurface drains.

**OPTION #2 – ACTION**

**Replace all perforated drainage tile located beneath and within 75 ft. of the storage with non-perforated pipe and all subsurface joints properly sealed:**

- may conduct clean water around a storage (e.g. eavestrough water, upslope diversion water).

**OPTION #3 – ACTION**

**Collect and store or treat all tile water:**

- this is an option when perforated or clay drainage tile are located beneath and/or near the livestock yard.

**FOR MORE INFORMATION:**

*Nutrient Management Act*, Ontario Regulation 267/03, as amended, and associated protocols. Contact your local OMAF Agricultural Engineer or Nutrient Management Specialist. The contractor or engineer you have retained to assist with the yard design and construction

---

**9-4 Clean Water Diversion**

Surface and ground water are at less risk if the quantity of contaminated liquid produced in a yard is small. This applies whether the liquid is fully contained or not, as fully contained liquid must eventually be spread on land.

**OPTION #1 – ACTION**

**Reduce the amount of surface water reaching the livestock yard:**

- install eavestroughs on all roofs to drain water around the livestock yard. Direct eavestrough water away from area using sealed, non-perforated drainage tile
- build concrete curbs along the yards to prevent surface water entry to the yard area
- redirect surface water flows around the yard area. In some cases this will involve the construction of diversion berms (earthen dams to intercept the flow of water). Redirection may also involve the re-grading of field topography.

## **OPTION #2 – ACTION**

### **Move the location of the yard:**

- availability of land, location of livestock operation and cost of relocation often reduce the feasibility of this option
- relocation of yard results in a reduction or elimination of surface water and roof water entering yard
- replacing a livestock yard area with a roofed structure may achieve your cost and environmental objectives without changing the location of the main barn.

### **FOR MORE INFORMATION:**

*Nutrient Management Act*, Ontario Regulation 267/03, as amended and associated protocols. Contact your local OMAF Agricultural Engineer or Nutrient Management Specialist. The contractor or engineer you have retained to assist with the yard design and construction.

---

## **9-5 Control of Livestock Yard Runoff**

Contaminated liquids from yards (yard runoff) cannot be discharged onto the land surface or to drains without considerable risk to surface or ground water.

Unpaved yards can have areas of high livestock concentration (due to feeding) on a soil or permeable base. Generally the surface area per head is much larger than for paved yards. The storage of contaminated runoff for the entire lot is not likely to be feasible.

## **OPTION #1 – ACTION**

**Convert to a total barn confinement system or a barn/pasture system where livestock feed on pasture during the growing season and are housed in barns during the non-growing season. Only very limited yard access (e.g. a few hours a month to clean out barn) is allowed during the non-growing season:**

- may be costly but can be very effective
- alternatively, if placing a roof over the yard area, assess how much of the existing yard is really needed depending on your livestock management practices.

## **OPTION #2 – ACTION**

**Collect all yard runoff and store in an acceptable manner similar to liquid manure:**

- storage capacity should be checked to ensure it has the capacity required to contain runoff volume from yard
- clean surface water should be diverted away from storage to reduce capacity required
- reduce size of yard if possible
- typically, this option is not practical for unpaved yards as area per head is typically much larger than for paved yards.

### **OPTION #3 – ACTION**

#### **Construct a vegetative filter strip to handle runoff from yard or OCA:**

- will require an engineered design to account for peak flows
- will require approval from MOE for system operation and maintenance.

### **OPTION #6 – ACTION**

#### **Establish a physical barrier between surface water and livestock yard:**

- a permanent vegetated flow path of 300m in length is an option that is more appropriate for smaller, low density yards.

### **FOR MORE INFORMATION:**

*Nutrient Management Act*, Ontario Regulation 267/03, as amended, Section VIII

Contact your local OMAF Agricultural Engineer or Nutrient Management Specialist

---

## **9-6 Groundwater Protection**

### **OPTION #1 – ACTION**

#### **Pave the entire yard area with an impermeable material (e.g. concrete):**

- this option will be feasible only if the area to be paved is not too large and runoff that will result can be properly managed
- assess how much of the yard is really needed
- consider site conditions when selecting an area to be paved; paving on areas where there is at least 5 ft. of base material containing at least 15% clay provides added groundwater protection
- accumulated solids must be scraped regularly, properly stored and spread.

### **OPTION #2 – ACTION**

#### **Unpaved or partially paved livestock yard with adequate soil clay content and depth:**

- this option will be feasible only if the yard has low livestock densities and the site chosen for the yard already possesses the required soil base characteristics
- areas of high use (e.g. feeding apron) should be paved and manure and runoff managed
- frequent moving of the feeder between unpaved areas may be sufficient in low animal density situations – the remainder of the yard should have vegetative cover
- select a low maintenance vegetation that stands up to traffic and utilizes nitrogen
- vegetative cover may be maintained by restricting the livestock numbers and removing them in wet weather.

### **OPTION #3 – ACTION**

**Convert to a total barn confinement system or a barn/pasture system where livestock are housed in barns during the non-growing season with restricted yard area access during that time and on pasture during growing season:**

- often cost-prohibitive but may be only option if site conditions dictate
- alternatively, assess how much of the existing yard is really needed depending on your livestock management practices.

### **FOR MORE INFORMATION:**

*Nutrient Management Act*, Ontario Regulation. 267/03, as amended, and associated protocols

---

## **9-7 Management of Yard Snow**

**(Note: for farms with a regulated OCA, refer to Section 61 of O. Reg. 267/03, as amended, for more detailed information.)**

### **OPTION #1 – ACTION**

**Convert to a total barn confinement system or a barn/pasture system, where livestock are housed in barns during the non-growing season with restricted yard area access during that time and on pasture during growing season:**

- may be costly but eliminates need to have to deal with yard snow
- alternatively, assess how much of the existing yard is really needed depending on your livestock management

### **OPTION #2 – ACTION**

**Lay out yards and windbreaks in a manner that minimizes yard snow accumulation:**

- may prevent the need to handle yard snow, saving time
- if meltwater is collected and properly stored and handled as a liquid manure, volumes to be handled can be reduced.

### **OPTION #3 – ACTION**

**Handle snow in the yard's runoff containment or treatment system:**

- additional liquid amounts beyond normal annual precipitation can be included when designing runoff storages using OMAF's manure storage sizing software (MSTOR)
- lay out the facilities to minimize snow drift accumulation in yard areas
- will require liquid handling equipment or hiring of a custom operator
- experimentation has been done with using a 5 ft. to 7 ft. thick layer of bark and shavings over the soil base of livestock wintering yards to absorb and treat snowmelt and runoff

from these yards. The top foot of shavings are removed and spread annually. Runoff, however, still needs to be managed.

**FOR MORE INFORMATION:**

Siting and Management of OCAs

*Snow and Wind Control in Agriculture*, OMAF Factsheet Order No. 74-082

Wintering Yards for Livestock

(see [www.gov.on.ca/OMAFRA/english/livestock/beef/news/vbn1103a8.htm](http://www.gov.on.ca/OMAFRA/english/livestock/beef/news/vbn1103a8.htm))

---

*At the request of the **Ontario Farm Environmental Coalition**, consisting of Ontario Federation of Agriculture, Christian Farmers Federation of Ontario, AGCare, and the Ontario Farm Animal Council, the following people contributed to the development of Infosheet #9:*

*Don Hilborn, OMAFRA (Chair)*

*John Forsyth, OMAFRA*

*Murray Blackie, MOEE*

*Jack Rodenburg, OMAFRA*

*Peter Doris, Ontario Cattlemen's Association*

*Tracy Ryan, G.R.C.A.*

*Technical Editing Committee;*

*Brent Kennedy, OMAFRA*

*Jim Myslik, OMAFRA*

*Bob Stone, OMAFRA*

*The following people contributed to the revision (2004) of Infosheet #9;*

*Kevin McKague, OMAF (Co-chair)*

*Don Hilborn, OMAF (Co-chair)*

*Christoph Wand, OMAF*

*Scott Abernethy, MOE*

*Anne Loeffler, GRCA.*

*Rita Vogel, OSCIA*

*Technical Editing Committee;*

*H.J. Smith, OMAF*

*Jim Myslik, OMAF*

*Bob Stone, OMAF*