

Farm Building Fire Safety

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Celebrating 100 years of public safety in Ontario
Célébrons 100 ans de sécurité publique en Ontario



What the Heck is Happening?



Recent Farm Fires

- December 10, 2013, Township of Southwold, Ontario - 900 goats die in barn fire



Recent Farm Fires

- February 5, 2015, Milverton, Ontario – 1800 pigs die in barn fire



Recent Farm Fires

- January 5, 2016, Puslinch, Ontario - 43 of 220 horses housed at the property die in stable fire.



Recent Farm Fires

- January 15, 2016, Mount Forest, Ontario - at least 12 horses die in a barn fire



Recent Farm Fires

- January 19, 2016, Parkdale, Ontario - 2,000 pigs die in barn fire



Recent Farm Fires

- January 17, 2016, Delaware, Ontario - about 500 goats and 30 cattle die in barn fire.



Recent Farm Fires

- February 1, 2016, Elgin County, Ontario – 90 dairy cows die in barn fire



Recent Farm Fires

- April 17, 2016, Tecumseh, Ontario – 125 dairy cows out of 225 perish. Fire initiated in a straw shredding machine.



Recent Farm Fires

- April 30, 2016 - 20 to 30 milking cows out of 100 were killed in a blaze that destroyed a modernized dairy facility in Amaranth



Recent Farm Fires

- May 30, 2016 - 40 cows die after a barn fire in Mapleton Township. Barn fully engulfed by time FD arrives.

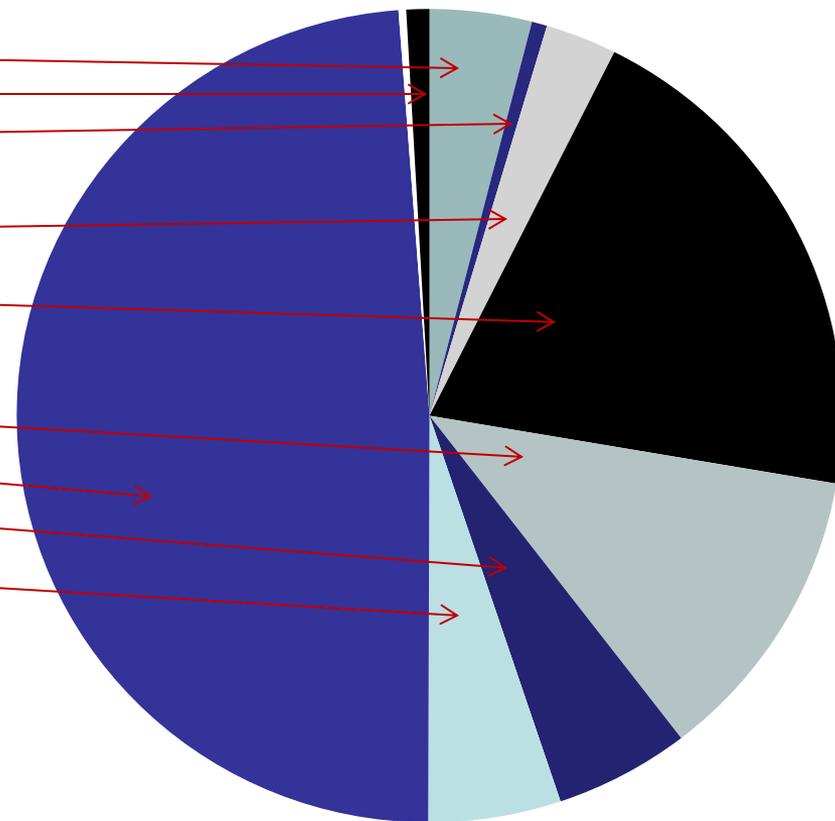


Barn Fire Statistics for Ontario

Fires by Property Type		2010	2011	2012	2013	2014	
Total Loss fires: (\$ loss, injury or fatality reported)	Loss Fires	164	186	136	157	150	
	INJURIES	8	6	11	6	9	
	FATALITIES	0	1	0	0	0	
	\$ LOSS	\$29.4 mil	\$35.9 mil	\$16.1 mil	\$31.8 mil	\$28.4 mil	
Farm structure	Barn - containing equipment or produce only	Loss fires	92	100	67	90	82
		Injuries	5	2	4	2	4
		Fatalities	0	0	0	0	0
		Est \$ loss	\$11.7 mil	\$13.3 mil	\$14.3 mil	\$17.4 mil	\$11.9 mil
	Barn - housing animals	Loss fires	72	86	56	67	68
		Injuries	3	4	5	4	5
		Fatalities	0	1	0	0	0
		Est \$ loss	\$17.6 mil	\$22.5 mil	\$8.5 mil	\$14.3 mil	\$16.5 mil
No loss fires: no \$ loss, injury or fatality		29	14	27	18	23	

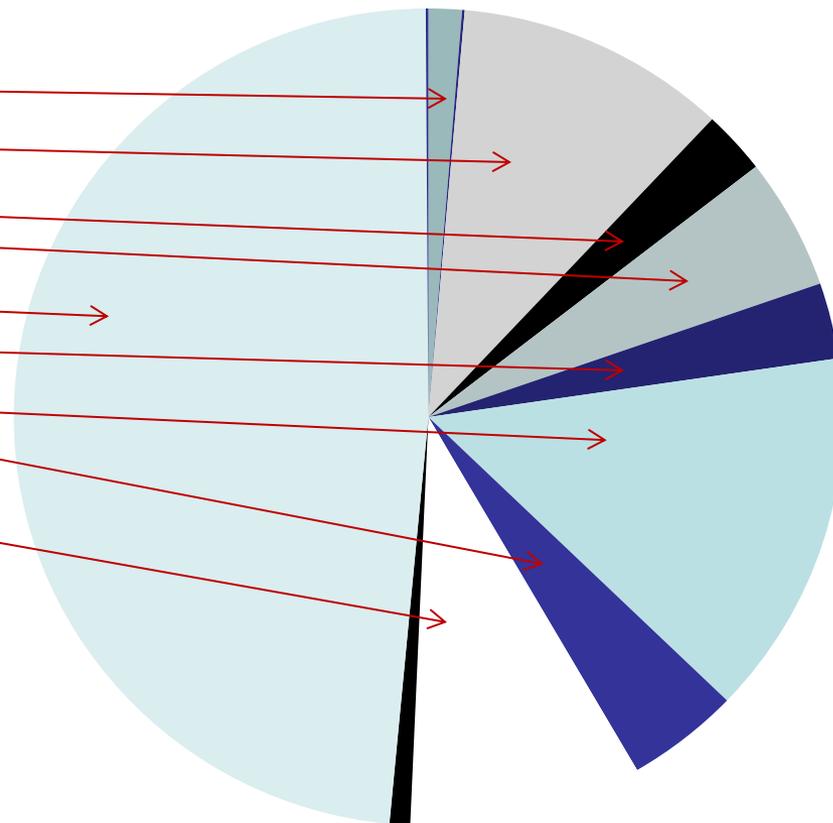
Loss Fires by Cause (2010-2014)

- Arson 4.0%
- Vandalism 0.9%
- Children playing 0.6%
- Design/Construction/Maintenance deficiency 2.8%
- Mechanical/Electrical Failure 20.3%
- Misuse of ignition source/material first ignited 11.9%
- Undetermined 48.8%
- Other Unintentional 5.2%
- Other 5.3%
- Unknown, not reported 0.3%



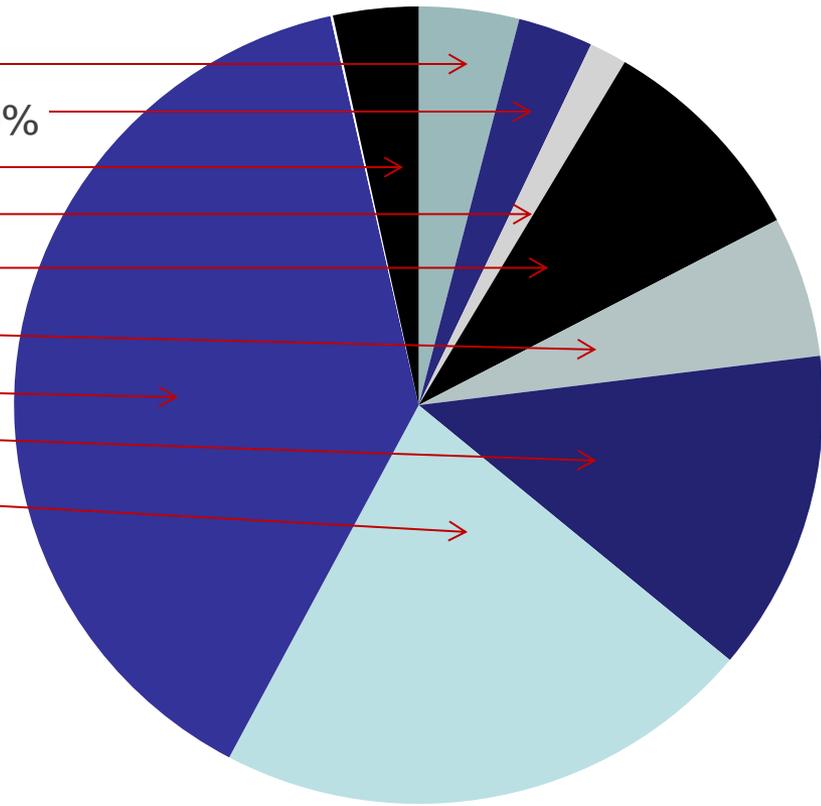
Loss Fires by Ignition Source (2010-2014)

- Appliances 1.3%
- Electrical distribution equipment 10.6%
- Exposure 2.5%
- Heating equipment, chimney etc. 5.2%
- Undetermined 48.4%
- Lighting equipment 3.0%
- Miscellaneous 14.5%
- Open flame tools, smokers' articles 4.4%
- Other electrical, mechanical 9.1%
- Processing equipment 0.8%
- Cooking equipment 0.1%
- Unknown, not reported 0.1%



Loss Fires by Area of Origin (2010-2014)

- Building Services/Support Facilities 4.0%
- Functional Area (cooking, sleeping, living, etc.) 3.0%
- Vehicle Areas 3.4%
- Means of Egress 1.5%
- Miscellaneous 8.8%
- Outside Area 5.7%
- Undetermined 38.7%
- Storage Area 13.0%
- Structural Area 21.7%
- Unknown, not reported 0.1%



Definition in OBC/OFC



Farm building:

- **building** or part thereof associated with and located on land devoted to the practice of farming,
- used primarily for
 - the housing of equipment or livestock, or
 - the production, storage or processing of agricultural and horticultural produce or feeds, and
- is not used for **residential occupancy**.

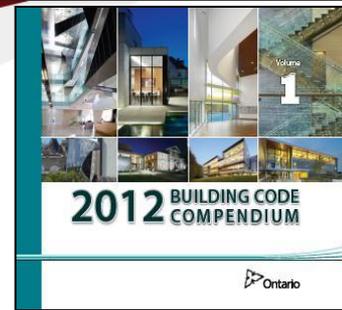




Ontario Life Safety Legislation/Regulations

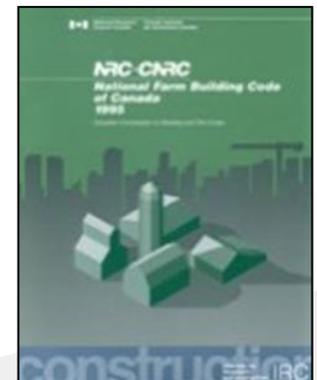
- Ontario Building Code
- Ontario Fire Code
- Fire Protection and Prevention Act

Ontario Building Code

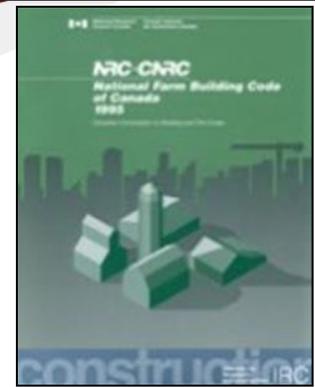


Div. A, 1.3.1.2. –

- specifies that farm buildings shall conform to “National Farm Building Code of Canada” (NFBCC), with exceptions
- clarifies that references in NFBCC to certain NBC Articles are deemed to be OBC references
- addresses how to deal with
 - structural design issues,
 - liquid manure storage tank design, and
 - permanent solid nutrient storage facilities

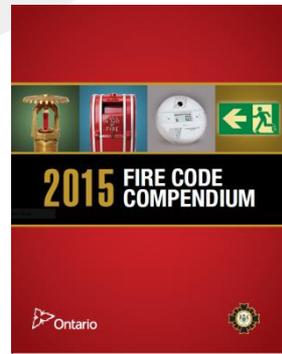


National Farm Building Code of Canada, 1995



- Part 1 Application and Definitions
- Part 2 Structural Design
- Part 3 Fire Safety –
 - Spatial separation
 - Fire stopping
 - Fire separations
 - Exposed foam plastic
 - Electrical installations
 - Exits
 - Ladders
- Part 4 Health –
 - Liquid manure storage
 - Manure hopper openings
 - Milk centre wastes
 - Gas protection at silos and attached feed rooms
 - Greenhouses
 - Controlled atmosphere fruit and vegetable storage
 - Liquid manure storage tanks
 - Access Covers
 - Electrical Installations

Ontario Fire Code

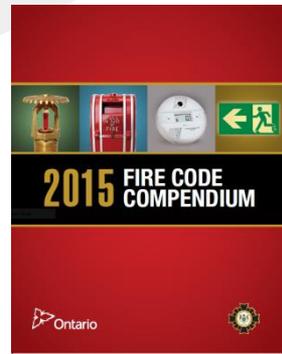


Div. A Subsection 1.3.1. Exemption for Farms

- A **farm building** with an **occupant load** of not more than one person per 40 m² of floor area during normal use, and other premises on a farm used for farming purposes are exempt from the requirements of this Code.



Fire Protection and Prevention Act

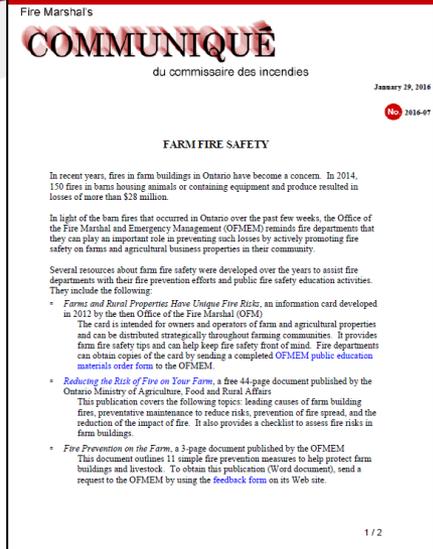


Section 21.(1) Inspection Orders

- May be used to order any measure necessary to ensure “life safety”
- “Life safety” includes safety from risk that fire would seriously endanger
 - the health and safety of any person, or
 - the quality of the natural environment
- Inspection Order, if used, would need to articulate what the “life safety” issue is

Communique 2016-07 – Farm Fire Safety

- Raises awareness of need for fire safety on farms
- Reminds fire service of their important role
- Highlights fire safety resources available to fire service, i.e.
 - ***Farm and Rural Properties Have Unique Fire Risks***, an information card
 - ***Farm Fire Safety Checklist***, a document published by the OFMEM
 - ***Fire Prevention on the Farm***, a document published by the OFMEM
 - ***Reducing the Risk of Fire on Your Farm***, a document published by Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
 - ***Guideline for Fire Safety in Facilities Housing Racehorses at Racetracks***, published by OFM in 1993.



Fire Safety & Public Education

Overview

Carbon Monoxide

Fire Prevention Week

Fire in Your Apartment Building

Plan Your Escape

Public Fire Safety Information

Safety Issues, Product Recalls and Warnings

Sleepover Fire Safety for Children

Resource Guide for Child Welfare Professionals

Smoke Alarm Information

Public Education Resources

Public Education Resources Materials Order Form

Subscribe to Public Education Matters e-Notice

Questions to Ask when

OFMEM Public Education Materials - Order Form

Documents de sensibilisation du public – Bon de commande

(PDF version available on request at [AskOFM](#))

Item / Article	Quantity / Quantité
<input type="checkbox"/> Farms and Rural Properties	X
<input type="checkbox"/> Les fermes et les propriétés rurales	X
<input type="checkbox"/> Install Smoke Alarms: It's the Law!	
<input type="checkbox"/> Installez des avertisseurs de fumée : C'est la Loi	
<input type="checkbox"/> Smoke Alarm Pointers	
<input type="checkbox"/> Les avertisseurs de fumée : l'essentiel	
<input type="checkbox"/> Make it Stop!	
<input type="checkbox"/> Arrêtez l'alarme !	
<input type="checkbox"/> Is Your Woodstove Safe?	
<input type="checkbox"/> Votre Poêle à bois est-il sécuritaire ?	
<input type="checkbox"/> Plan Your Escape!	
<input type="checkbox"/> Prévoyez comment échapper au feu !	
<input type="checkbox"/> Cooking Safety Note: two designs with same text. Orders will be filled with a mix of both cards.	
<input type="checkbox"/> Sécurité-incendie dans la cuisine Note : Il y a deux modèles de carte. Ils contiennent tous les deux les mêmes messages. Une quantité de chaque modèle sera envoyée.	
<input type="checkbox"/> Are Your Loved Ones Safe From Fire?	



Office of the Fire Marshal ▾

▶ OFM Home page

▶ About the Office of the Fire Marshal

▶ Ontario Fire College

▶ Education Testing & Certification

▶ Fire Safety & Public Education

▶ Media Relations & Resources

▶ Fire Service Programs

▶ Fire Service Resources

▶ Legislation, Directives & Technical Guidelines

▶ Care Occupancies, Care and Treatment Occupancies, and Retirement Homes

▶ Carbon Monoxide Alarms

▶ Library

▶ Multi-Agency Emergency Preparedness/Response

▶ Fire Investigations

▶ Make it Stop!

Ask the OFM

If your inquiry regards an immediate threat to public safety, please contact your local fire department.

We welcome your comments and inquiries. You may contact our [offices](#) or submit the form below.

Please specify the nature of your message:

Comment ▾

Please specify the subject of your message:

- Fire Code
- General Fire Safety
- Other

Please enter your comments below:

Would you like a reply? Yes No

If you would like a reply, please provide the following information or specify an alternate way we may contact you:

Your name:

Your e-mail address:

Fire Safety Resources

Farm Fire Safety Checklist

The following Farm Fire Safety Checklist was designed to assist farmers involved in agri-business to reduce the risk of fire occurring on their property. It will also ensure everyone knows what to do in case of fire.

Use this checklist by placing checkmarks in appropriate boxes. Only the most important steps have been taken to make your farms and homes safer. Every farm and agri-business is different. Additional space has been provided for other unique issues around your property that should be added to the checklist.



FARM SAFETY ASSOCIATION
growing safety



FIRE PREVENTION ON THE FARM

A barn fire is a farmer's worst nightmare and often, it brings significant emotional and economic damage to a farming community. Between 2007 and 2011, barn fires accounted for over \$175 million in property losses. In 2014, the total cost of barn fires, including equipment, produce, or housing animals, resulting in over \$10 million.

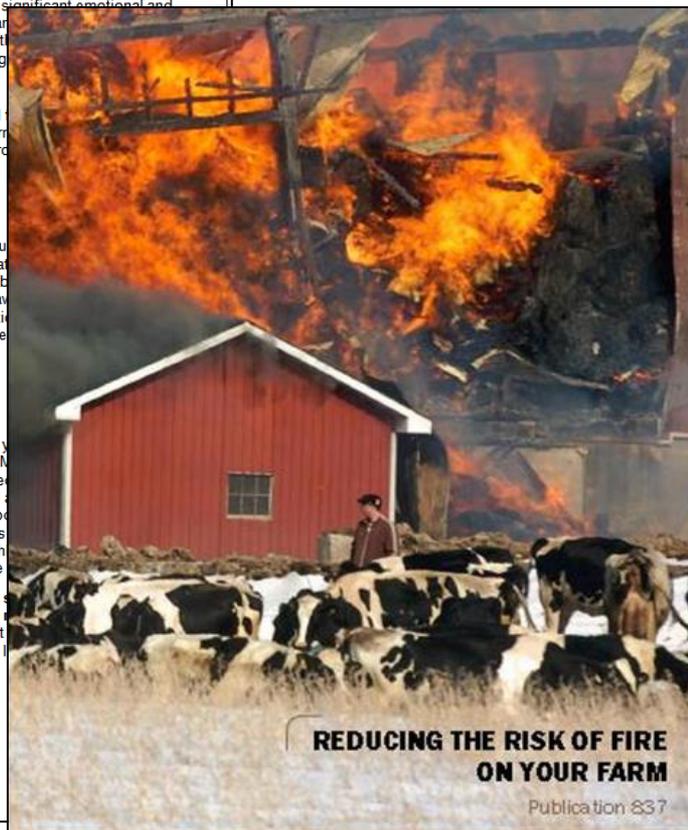
There are many steps that can be taken to establish a good fire safety plan to reduce the risk of fire on farm properties. The following information provides measures to ensure farm buildings and livestock are safer from fire. Many of these measures are largely preventable by following good fire safety practices.

HOW FIRES START

Fires require three elements: oxygen, fuel and heat. Farm buildings are highly susceptible to fast-moving fires because they are well ventilated and provide a plentiful fuel supply for fires to start and grow. The barn is constructed of wood and house solid fuels such as hay, straw, and other organic elements, the heat source, can take the form of sunlight, friction, an open flame, gas compression and/or chemical reactions. Measures to prevent farm fires are outlined below.

PREVENT FIRES ON YOUR FARM

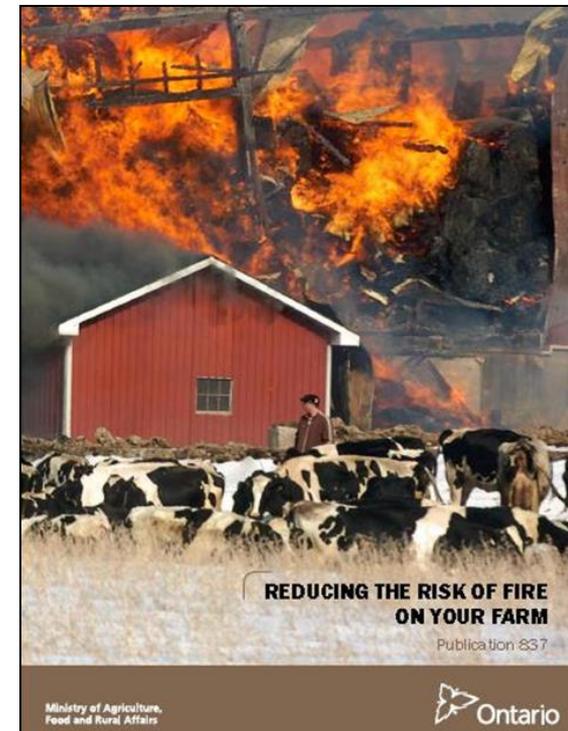
- 1. START WITH A PLAN:** It is a good idea to contact your local fire department to find out how to effectively prevent fire on your farm. Make a fire safety plan. Visit your farm and point out areas where you can do better. They will also provide advice on access routes to all buildings. Use this information to develop a plan for your farm. Introduce the plan to those who frequent your farm and ensure that procedures are followed. If possible, make arrangements with neighbours to provide shelter for your livestock if the event they need to be evacuated.
- 2. ABSOLUTELY NO SMOKING:** There should be no smoking in the barn or farm buildings at any time. Strictly enforce a no smoking policy by posting signs and informing people who work or visit your farm. Any cigarettes are extinguished thoroughly in a safe place, not in the barn or farm buildings.



Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)

OMAFRA initiated steps to:

- Form technical advisory committee to
 - reduce potential for life and property loss
 - identify regulatory requirements
 - Identify best management practices in the industry
- Develop a document “Reducing the Risk of Fire on Your Farm”



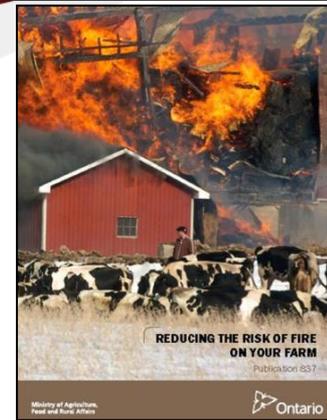
Technical Advisory Committee

- Members include:
 - Canadian Farm Builders Association
 - Farm building contractors and farm building design engineers
 - Ontario Ministry of Agriculture, Food and Rural Affairs
 - Ontario Ministry of Municipal Affairs and Housing
 - Ontario Office of the Fire Marshal
 - Ontario Association of Fire Chiefs
 - Building officials
 - Electrical Safety Authority
 - Insurance industry
 - Ontario Pork

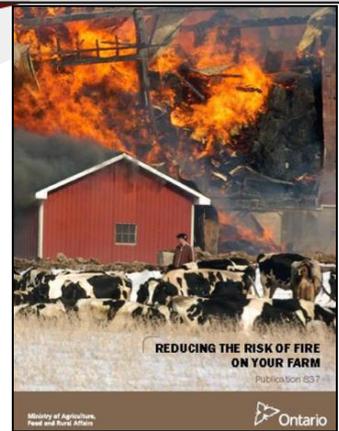


“Reducing the Risk of Fire on Your Farm”

- Examines major causes of farm building fires and how to reduce associated risks
- Explains principles and concepts of fire safety
 - as they relate to farm/farming practices
- Discusses strategies to reduce impact on property and business from fire
- Pertains to both existing and new construction
- Supplements applicable requirements of NFBCCC as referenced by OBC



“Reducing the Risk of Fire on Your Farm”



Clarifies that:

- The *Building Code Act, 1992* requires a building permit to be obtained for
 - new construction
 - renovation
 - change of use
- Other Codes and regulations to be respected when building, renovating or operating farm buildings, i.e.
 - Ontario Electrical Safety Code
 - TSSA regulations for the safe storage and handling of liquid or gaseous petroleum products



“Reducing the Risk of Fire on Your Farm”

Discusses:

- Leading causes of farm building fires -
 - mechanical/electrical failure
 - misuse of ignition source or igniting equipment
 - design, construction or maintenance deficiency
 - other factors that contribute to the impact of fires
- Preventative maintenance to reduce the risk of fire -
 - general operating practices
 - electrical systems
 - mechanical systems
 - heating appliance systems



“Reducing the Risk of Fire on Your Farm”

Discusses best practices for -

- Preventing fire spread, i.e.
 - fire separation/fire compartments/fire stopping
 - spatial separation
 - flame spread limits
 - electrical code considerations
 - heating system considerations
- Reducing the impact of fire, i.e.
 - detection and suppression systems
 - fire department access
 - water supply for fire fighting
 - evacuation



“Reducing the Risk of Fire on Your Farm”

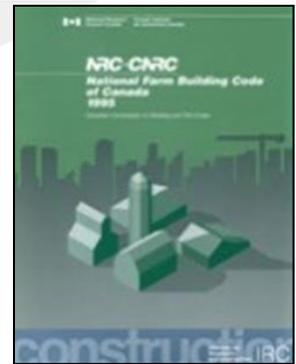
Self-assessment checklist provided:

- Includes structure, electrical/heating systems, stored products, laneway and water supply, safety/exit/lighting

Category		Yes	No
Structure			
1	The largest, separate fire compartment size is less than 4,800 m ² (51672 ft ²)?		
2	Buildings are located at least 30 m (100 ft) from each other or have properly constructed (1 hour) fire rated walls separating the individual fire compartments?		
3	Properly constructed fire stops exist in the attic at 30 m (100 ft) intervals?		
4	No unsealed gaps or passageways in attic fire stops?		
5	Interior sheathing materials have low Flame Spread Ratings and Smoke Developed Classifications as outlined in Table 3.4?		
Electrical System			
6	Electrical inspection completed within the past year?		
etc.	etc.		



Changes on the Horizon?



- 1995 National Farm Building Code of Canada currently under review at the national level
- Could possibly result in
 - larger farm buildings falling under the NBC
 - new classifications of farm building types, i.e. G-1, G-2, G-3, G-4
 - strengthened fire compartmentation requirements
 - requirements for FD access, water supply, etc.



THE END

Questions?

