



ST. FRANCIS PLANNING COMMISSION

**ISD #15 DISTRICT OFFICE BUILDING
4115 AMBASSADOR BLVD.
SEPTEMBER 16, 2015**

7:00 PM

AGENDA

1. Call to Order/Pledge of Allegiance
2. Roll Call
3. Adopt Agenda September 16, 2015
4. Approve Minutes August 19, 2015
5. Public Comment
6. Public Hearing: 23525 Variolite St – Variance to exceed number and size of buildings
7. Public Hearing: Floodplain Ordinance
8. Planning Commission Discussion
9. Adjournment

There may be a quorum of St. Francis Council Members present at this meeting.

**CITY OF ST. FRANCIS
ST. FRANCIS, MN
PLANNING COMMISSION MINUTES
August 19, 2015**

1. **Call to Order:** The Planning Commission meeting was called to order at 7:00 pm by Chairman Steinke.
2. **Roll Call:** Present were Ray Steinke, Brittney Berndt, Todd Gardner, Joel Olson, Greg Zutz, and William Murray.
3. **Adopt Agenda:** Motion by Zutz, second by Gardner to approve the agenda. Motion carried 6-0.
4. **Approve Minutes:** Motion by Gardner, second by Zutz to approve the July 15, 2015 minutes. Motion carried 6-0.
5. **Public Comment:** None
6. **Public Hearing – Business District Ordinance Amendments**

Sparks reviewed the draft ordinance. It would refine the purpose statements of the B2 and B3 Districts to delineate the uses more dependent upon being in primary retail commercial areas in the B2 and uses not dependent upon such locations in the B3. It would also allow for institutional uses, clubs, theaters, brewery taprooms, micro-distillery cocktail rooms, adult uses, and hospitality businesses in to the B3 District. The breweries and distilleries without retail components would be allowed in the Industrial Districts.

Steinke opened the public hearing at 7:29. Steinke closed the public hearing at 7:30.

Murray asked if there was enough space for adult uses within the district. Sparks said both the B2 and B3 had similar limitations and the condition should be monitored.

Steinke asked about including wineries. Sparks said the ordinance was matching state licensing provisions and farm wineries were allowed in agricultural areas which was outside the scope of this ordinance. Steinke said the Commission should further review this at a later date to find a way to include wineries.

Motion by Olson, second by Zutz to recommend approval of the ordinance. Motion carried 6-0.
7. **Adjournment:** Motion by Berndt, second by Gardner to adjourn. Motion carried 6-0. Meeting adjourned at 7:33 pm.

Nate Sparks, City Planner

Date



PLANNING MEMO

TO: St. Francis Planning Commission

FROM: Nate Sparks

DATE: September 11, 2015

RE: Greg & Cheryl Kilpela – 23525 Variolite St NW
Variance: Building size and number

BACKGROUND

Greg & Cheryl Kilpela have made an application for a variance to allow them to exceed the maximum size and number of detached accessory structures. The property is located at 23525 Variolite St NW and is zoned A2, Rural Estate Agriculture. Their property is a platted lot 9.6 acres in size. The applicants recently received a Conditional Use Permit to operate a home based commercial horse stable business.

VARIANCE REQUEST

In the Rural Service Area of the City, properties that are between 5 and 10 acres in size are limited to having two detached accessory structures that may total up to 4000 square feet in area. The applicant is seeking permission via a variance to have three detached accessory buildings that total 5,718 square feet in area. For comparison, parcels larger than 10 acres in the City are limited to 2 buildings that may total up to 5000 square feet in area.

In 2001, the applicants received a building permit to build a 70' x 30' detached accessory building (2100 square feet). In 2004 a permit was issued to build a 42' x 40' addition (1680 square feet) on to this structure. This permit was issued because the total square footage was represented as being 3780 square feet. However, from the applicants' variance application and confirmed by the County GIS data, it appears that this building was actually constructed at 42' x 49' (2058 square feet). At this point the structure exceeded the 4000 square foot allowance for a property of this size, at 4158 square feet.

Sometime after 2004 the applicants then built two additions on to the building of 12' x 30' (360 square feet) and 12' x 40' (480 square feet). They also brought two additional structures on to the property each 12' x 20' (240 square feet). Then in 2014, a building inspector observed the applicants constructing another addition (10' x 24' – 240 square feet) without a permit. At this point, the property is at 5718 square feet of detached accessory buildings. This is 1718 square feet over the allowance for a property of this size. All buildings and construction count as structures by definition in the Zoning Ordinance and are required to meet these standards.

The applicants were instructed by the Building Department to bring the property into conformance in December 2014. The applicants hired an attorney who discussed this matter with City Staff and through these discussions it was discovered that the applicants were boarding horses on the property without a permit. This led to the application for the CUP recently reviewed by the Planning Commission.

At this point, the applicants have decided to apply for a variance from the building size and number limitations. The applicants' state as their reason for the variance that they have sufficient real estate for seven horses and the limitations on building size make it too difficult to accommodate this number of horses. They also state that there are allergy concerns and health concerns related to hay storage in the same building as horses.

When considering a variance, the following criteria are required by ordinance to be met:

- A. A variance shall only be granted when it is in harmony with the general purposes and intent of the ordinance.
- B. A variance shall only be granted when it is consistent with the comprehensive plan.
- C. A variance may be granted when the applicant for the variance establishes that there are practical difficulties in complying with the zoning ordinance. Economic considerations alone do not constitute a practical difficulty. In order for a practical difficulty to be established, all of the following criteria shall be met:
 - 1. The property owner proposes to use the property in a reasonable manner. In determining if the property owner proposes to use the property in a reasonable manner, the board shall consider, among other factors, whether the variance requested is the minimum variance which would alleviate the practical difficulty and whether the variance confers upon the applicant any special privileges that are denied to the owners of other lands, structures, or buildings in the same district.
 - 2. The plight of the landowner is due to circumstances unique to the property not created by the landowner.
 - 3. That the granting of the variance will not alter the essential character of the neighborhood in which the parcel of land is located.
- D. The variance does not involve a use that is not allowed within the respective zoning district.

APPLICATION REVIEW

Variances may be granted when there are unique conditions to a site preventing utilization of the site in a conforming manner that are not applicable to all situations that may be remedied by the granting of a variance. For example, if there were a large wetland on a property that took up all the buildable area, a variance may be granted to allow construction within a setback. If the condition being remedied were universal, the proper channel for addressing the situation would be to seek an ordinance amendment not a variance.

The applicants are seeking a variance to exceed the maximum building size and number of building allowances. These are difficult variances to justify because there are never unique circumstances to one property that cannot be applied to other properties in regards to having larger or more than allowed buildings. A variance is not intended to be a fee that one resident can pay in order to have a separate set of rules.

Any person can come up with some convenience that may be accommodated by having their own special privileges. One person may wish to have a large classic car collection. There is not an ordinance limiting the number of cars you can have stored within a building. However, that would not be justification for a variance to be used when your cars don't fit within the maximum building size allowed.

The City is obligated to treat all citizens equitably. All other property owners with or without horses are able to comply with the building size requirements. It appears that the City has never granted such a variance. Having allergies or horses in a greater number than can be accommodated in the preferred manner are not legitimate justifications for a variance found within the ordinance. This would result in unlimited arguments for exceeding the building size and create an unequitable situation that those who can afford a variance get special privileges and larger buildings. Furthermore, this property owner is not being denied reasonable use of their property by meeting the building size requirements.

Finally, the property owner built several additions on to their structure illegally which lead to this condition. Therefore, the plight of the landowner was created by the landowner.

RECOMMENDED ACTION

It is recommended that the Planning Commission forward a recommendation of denial of this request. While having allergies is not ideal it is not a justification for a variance and other horse owners in the City are able to accommodate the number of horses allowed in a conforming manner. The primary reason for this recommendation, though, is that the plight of the landowner was created by the landowner and that the applicants are seeking special privileges that are denied to other owners of lands, structures, or buildings within the same district. It would be recommended that the applicants work with the Building Official in resolving the matter.

Attached:

Applicant's Submission

Applicant's Site Plan

DESCRIPTION OF REQUEST: (attach additional information if needed)			
Project Name: <u>Mare-e Green Pastures</u>			
Nature of Proposed Use: <u>Housing horses and hay for the horses</u>			
Reason(s) to Approve Request: <u>Allow Mare-e Green Pastures to provide sufficient run in shelter space for 7 horses, and hay storage separate from indoor barn spaces.</u>			
PREVIOUS APPLICATIONS PERTAINING TO THE SUBJECT SITE: (attach additional information if needed)			
Project Name:		Date of Application:	
Nature of Request:			
PROPERTY INFORMATION:			
Street Address: <u>23525 Variolite St NW</u>		Property Identification Number (PIN#):	
<u>Elk River MN 55330</u>			
Legal Description (Attach if necessary):	Lot(s): <u>4</u>	Block: <u>1</u>	Subdivision: <u>Teds Farm</u>
OWNER INFORMATION:			
Name: <u>Gregg + Cheryl Kilpela</u>		Business Name: <u>Mare-e Green Pastures</u>	
Address: <u>23525 Variolite St NW</u>			
City: <u>Elk River</u>	State: <u>MN</u>	Zip Code: <u>55330</u>	
Telephone: <u>612 889-2291</u>	Fax:	E-mail: <u>Cheryl.Kilpela@gmail.com</u>	
Contact: <u>Cheryl Kilpela</u>		Title: <u>Owner</u>	
APPLICANT INFORMATION: (if different from owner)			
Name:		Business Name:	
Address:			
City:	State:	Zip Code:	
Telephone:	Fax:	E-mail:	
Contact:		Title:	

NOTE: Applications must be signed by all property owners. Applications only accepted with ALL required support documents and fees. Please request and follow appropriate Development Checklist(s) for desired application.

APPLICATION FEES AND EXPENSES: By signing this application form, I agree that all fees and expenses incurred by the City for the processing of this application, including costs for professional services, are the responsibility of the property owner to be paid immediately upon receipt or the City may approve a special assessment for which the property owner specifically agrees to be assessed for 100 percent per annum and waives any and all appeals under Minnesota Statutes 429.81 as amended. All fees and expenses are due whether the application is approved or denied or withdrawn. Escrow fees may not cover actual expenses; any additional fees will be billed.

I, the undersigned, hereby apply for the considerations described above and declare that the information and materials submitted in support of this application are in compliance with adopted City policy and ordinance requirements are complete to the best of my knowledge. I further understand that this application will be processed in accordance with established City review procedures and Minnesota Statutes 15.99 as amended, at such time as it is determined to be complete. Pursuant to Minnesota Statutes 15.99, the City will notify the applicant within fifteen (15) business days from the filing date of any incomplete or other information necessary to complete the application. Failure on my part to supply all necessary information as requested by the City may be cause for denying this application.

Applicant(s): same as below Maree Green Pastars Date: 8-20-15

Owner(s): Cheryl Kilpela Cheryl Kilpela Date: 8-20-15
Gregg Kilpela Gregg Kilpela 8-20-15

Required Copies

Minor Subdivisions	Please provide (15) Certificates of Survey at 22" by 34", (1) reproducible reduction at 11" by 17", and (1) electronic PDF. File of all information and submit an electronic (Word for Windows) version of the complete legal description of the property(s). ***See below for other required information.
Concept Plans	Please provide (15) large scale copies at 22" by 34", (1) reproducible reduction at 11" by 17", and (1) electronic PDF. File of all information and submit an electronic (Word for Windows) version of the complete legal description of the property(s). ***See below for other required information.*
Preliminary Plat	Please provide (15) large scale copies at 22" by 34", (1) reproducible reduction at 11" by 17", and (1) electronic PDF. File of all information and submit an electronic (Word for Windows) version of the complete legal description of the property(s). ***See below for other required information.
Final Plats	Please provide (15) large scale copies at 22" by 34", (1) reproducible reduction at 11" by 17", and (1) electronic PDF. File of all information and submit an electronic (Word for Windows) version of the complete legal description of the property(s). ***See below for other required information.
***	- If applicable, an additional large scale copy at 22" by 34" shall be provided for each of the following: - If project lies within a DNR Shoreland District or Floodplain - If project is adjacent to a neighboring City or Township - If applicable, an additional small scale copy at 11" by 17" shall be provided for each of the following: - If project increases the number of dwelling units for the Met Council - If project is adjacent to a County Road or County State Aid Highway - If project is adjacent to a MN/Dot state highway

My wife and I have kept our horses on the above property since moving in 2001. We are currently working with St. Francis city staff regarding the buildings/structure on our property. I am writing this letter to give you some background regarding the issues we are working on and to ask for your assistance in resolving them.

My wife is passionate about horses, and in 2001 we bought the property in St. Francis to keep our horses. We built a house and a pole barn first then later we built another barn. Two years later we built two portable hay shelters separate from the barn for fire safety and better control of keeping hay dry and clean for the horses' health. This was after researching portable shelters and being told by the manufactures of these permits were not required.

Last year we put on an addition to an open bay lean shelter. We did not believe we needed a building permit. We are meticulous in the care of horses; everything we have done has been focused on their health and safety. Enclosed are photographs.

In May 2013 we decided to board horses so my wife formed an LLC called Mare-e Green Pastures. She was not aware that she needed a conditional use permit and has since applied for one.

Section 8-3-2(A) of the St. Francis code states in part "It's unlawful for any person to keep, stable, board or harbor horses... unless the person has sufficient contiguous real estate to house and enclose said animals or fowl."

In section 8-3-2-(D) of code allows for us to keep (7) horses on our property, currently we have (4) horses. My wife and I believe that the buildings/structures on our property are necessary to properly care for the horses. Kevin Voller, our veterinarian, believes every structure on our farm is necessary to properly care for the horses. See enclosed letter.

In November 2014, we met with Andy Schreider, St. Francis building inspector. Enclosed is a letter dated December 16, 2014 which summarizes his position. It seems to me that the position Andy is taking is in direct conflict with the city code 8-3-2(A), and we are caught in the middle. Proper care and safety of the horses based on professionals in the field dictate that we should not remove any of the structures on our property. While it seems to me that his representation of our phone conversation is inaccurate regarding the reference referring to the structures as "temporary", and the "4,000 sq. ft." As we already received a permit for the 2nd agricultural building which was allowed under the 5,000 sq. ft. We are looking for your assistance in resolving the impasse.

Please grant a variance for the hay shelters and the extension of the horse run in shelter.

Accommodating this request will allow Mare-e Green Pastures to:

- 1) Provide enough hay storage space outside the barn, for an entire winters hay supply for 7 horses.**
 - a) Prevent possible injury of horses or people inside the barn due to fire caused by spontaneous hay combustion.
 - b) Insure Mare-e Green Pastures will not have to purchase hay during winter when supplies are unreliable and more costly.
 - c) Make it possible for people and horses to have enough space inside the barn (without hay dust in clean air) for exercise during poor weather, colic, or quarantine.
- 2) Provide enough outdoor run in shelter for 7 horses.**
 - a) Giving each horse a 10x12 shelter space preventing injury from fighting for space.
 - b) Allowing each horse to escape from mud, sun, freezing snow, rain and lightning; preventing thrush, sun stroke, hypothermia, rain rot, and possible death.
 - c) Allows continuous access to shelter from elements without regular stall confinement helping to prevent leg edema and colic.

In conclusion every space is the correct size and has a specific use for; storage, maintenance, containment, and care of the number of horses the city allows (7)

- 1) The garage attached to the house was built over size to accommodate the tractor, hay cutter, hay baler, commercial lawn mower, snow blower for tractor and work ATV for spraying, fertilizing and manure removal of hay fields and pastures.
- 2) The main barn has a work bench and cabinets for the tools necessary for maintenance of equipment and structures. It has enough space for the owner's vehicles allowing visitors to use all available parking. There is a tack room with cabinets, counters and saddle racks next to the rubber mats and ties for indoor grooming during inclement or hot weather. Then there are 3 stalls to accommodate special requests for stalling, quarantine, injury, and colic.
- 3) The indoor riding area is just large enough to lunge or ride one horse in a circle. This provides a safe space for exercise when ice prevents safe movement of horses. This keeps horses fit preventing spring tie up colic, winter impaction colic, and edema of the legs. Indoor lunging area also provides a space for exercising quarantined or colic horses (often times a sick horse needs to be walked in the middle of the night). Finally an indoor riding space is good for and inexperienced horse or rider, while shaded and cooler during hot weather.

Please see building diagrams, letters from Vet, doctor, Ferrier, and articles from professional sources that dictate our practices.

Anoka Equine Veterinary Services, Ltd.

16445 NE 70th St., Elk River, MN 55330
Tel. 763-441-3797 Fax 763-441-3683

March 16, 2015

To whom it may concern,

This letter is in support of Cheryl and Gregg Kilpela in their current discussion with St. Francis City officials.

I have known Cheryl and Gregg, and provided veterinary care for their horses, prior to their ownership of their farm, and have full understanding of their knowledge and ability to care for horses. We have a long standing veterinary/client relationship.

Every structure on the Kilpela's farm is geared too the best interests of the horses: The run in shed provide shelter from the elemenets, the hay shed seperate from the stalls minimized their risk of respiratory disease, and the small indoor riding area provides for exercise during any weather conditions. All of these things are important to the well being of their charges.

The Kilpelas are meticulous in the care of the horses on their property. The facility is always neat, clean and safe. The manure is managed in an efficient and timely manner.

If you have any questions or concerns regarding the Kilpela's facility, please do not hesitate to contact me.

Sincerely,

Kevin Voller DVM
Anoka Equine Veterinary Services, Ltd

August 14, 2015

To whom it may concern:

Cheryl Kilpela

Patient was seen at the Southdale Pediatric and Adult Allergy Clinic. She had recurrent cough this past spring and in early August. It is usually a nonproductive cough but it is associated with some shortness of breath.

She has long history of allergies. However, she has been treating herself for many years. She enjoys horses and works in the barn with hay. Her symptoms flare consistently after working in the barn and surrounded by hay.

She was confirmed to have reactive airway disease and mold allergy. She was negative for hypersensitivity pneumonitis.

If there are further questions, please contact my office.

Sincerely,



Mee Lee Nelson, MD

Pediatric and
Adolescent Medicine

T.V. Lefevere, M.D.

T.J. Anderson, M.D.

J.W. Oseid, M.D.

J.M. Williams, M.D.

B.J. Hansen, M.D.

M.P. Jones, M.D.

D.L. Magnuson, M.D.

V.M. Oster, M.D.

K.K. Williams, M.D.

S.G. Lutz, M.D.

D.C. Westlund, M.D.

D.E. Curran, M.D.

L.M. Skallerud, M.D.

T.J. Neis, M.D.

S.L. Williams, M.D.

A.L. Manolis, M.D.

L.W. Oie, M.D.

C.M. Carlson, M.D.

J.C. Morkeberg, M.D.

S.D. Brandt, M.D.

M. Kristupaitis, M.D.

J.J. Koch, M.D.

D.P. Miller, M.D.

S. Mitha, M.D.

M.J. Lawler, M.D.

T.P. Bodine, M.D.

S.W. Hinrichs, M.D.

D.L. Buchman, M.D.

M.A. Hersey, M.D.

K.R. Hagen, M.D.

K.E. Tamte, M.D.

A.D. Siwek, M.D.

M.C. Iliev, M.D.

M.L. Stalpes, M.D.

S.N. Nolan, M.D.

E.V. Fiebiger, D.O.

A.L. Wudel, M.D.

Lisa Kroening, CPNP, CLC

Pediatric and

Adult Allergy

D.C. Schroeckenstein, M.D.

M.C. Nelson, M.D.

3955 Parklawn Ave., Suite 120

Edina, MN 55435

(952) 831-4454

Business Office

(952) 831-1944

501 E. Nicollet Blvd., Suite 200

Burnsville, MN 55337

(952) 898-5900

18315 Cascade Dr., Suite 170

Eden Prairie, MN 55347

(952) 949-0399

**Patient Report**

Specimen ID: 217-881-4711-0
Control ID: B0026394942

Acct #: 22331190
Southdale Pediatrics/Edina
Attn: Laboratory
3955 Parklawn Ave, #200
Edina MN 55435

Phone: (952) 831-4454 Rte: 12



KILPELA, CHERYL A.
23525 VARIOLITE ST NW
ELK RIVER MN 55330
(612) 889-2291

Patient Details

DOB: 08/25/1964
Age(y/m/d): 050/11/11
Gender: F SSN: ***-**-9999
Patient ID: 82638

Specimen Details

Date collected: 08/05/2015 1233 Local
Date entered: 08/06/2015
Date reported: 08/10/2015 1005 ET

Physician Details

Ordering: M NELSON
Referring:
ID:
NPI: 1972510220

General Comments & Additional Information
Clinical Info: 3 Large SST tubes

Alternate Control Number: B0026394942

Alternate Patient ID: 82638

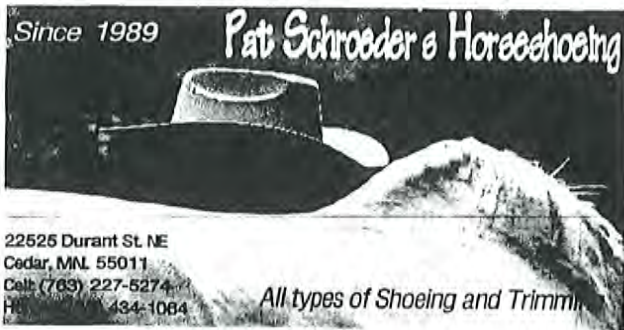
Ordered Items

Hypersensitivity Pneumonitis; Immunoglobulin E, Total; M006-IgE Alternaria alternata; M003-IgE Aspergillus fumigatus

TESTS	RESULT	FLAG	UNITS	REFERENCE	INTERVAL	LAB
Hypersensitivity Pneumonitis						
A.fumigatus #1 Abs	Negative			Negative		01
Micropoly. faeni Abs	Negative			Negative		01
Thermoa. vulgaris #1	Negative			Negative		01
A. pullulans Abs	Negative			Negative		01
Thermoact. saccharii	Negative			Negative		01
Pigeon Serum Abs	Negative			Negative		01
Immunoglobulin E, Total	124	High	IU/mL	0 - 100		02
M006-IgE Alternaria alternata						
M006-IgE Alternaria alternata	8.45	Abnormal	kU/L	Class IV		01
Class Description						01
Levels of Specific IgE		Class	Description of Class			
< 0.10		0	Negative			
0.10 - 0.31		0/I	Equivocal/Low			
0.32 - 0.55		I	Low			
0.56 - 1.40		II	Moderate			
1.41 - 3.90		III	High			
3.91 - 19.00		IV	Very High			
19.01 - 100.00		V	Very High			
>100.00		VI	Very High			
M003-IgE Aspergillus fumigatus						
<0.10			kU/L	Class 0		01

01	BN	LabCorp Burlington 1447 York Court, Burlington, NC 27215-3361	William F Hancock, MD
02	DV	LabCorp Denver 8490 Upland Drive, Englewood, CO 80112-7115	Brian Poirier, MD

For inquiries, the physician may contact Branch: 800-457-1177 Lab: 800-795-3699



April 27, 2015

Dear City of St Francis,

I'm the Farrier that takes care of the horses' hooves at Gregg and Cheryl Kilpela's barn. I see horses and barns everyday but I always enjoy going to their place. The horses are well behaved and healthy. The barn, paddocks, and pastures are clean and convenient. They are responsible about setting up appointments for regular hoof care and always pay their bill. It is a pleasure to do business with them and I have always been impressed with the time, energy, and thought they put into doing things right to care for horses.

Sincerely,

Pat Schroeder



23340 Cree Street NW
St. Francis, Minnesota 55070
763-753-2630
FAX 763-753-9881

December 16, 2014

Gregg & Cheryl Kilpela
23525 Variolite St NW
St Francis MN 55070

Mr. & Mrs. Kilpela:

This letter is intended to summarize our discussion from November 26th, 2014 regarding the accessory buildings at your property located at 23525 Variolite St in the City of St Francis.

Earlier this month you were notified that a Building Permit is required for the work which was started on the east side of your detached accessory building. Thank you for submitting the required information as requested. Unfortunately, the building addition that was started is not allowed by City Code.

According to section 10-18-6 of the St Francis Zoning Code, parcels of your size are allowed to incorporate up to 4,000 square feet of detached accessory space. This addition will put you over that allowance and therefore is not allowed.

During our phone conversation you indicated the 2 structures on the North side of the property were temporary and that is why you did not think a permit was required for them. City and State Codes identify a temporary use as a timeframe not to exceed 180 days, you indicated during our conversation that these have been in place for at least a year and you did not have plans for when to remove them.

In summary, the 2 structures on the North side of the property need to be removed as they were constructed without permits and are over the number and size allowed. Additionally, the lean-to on the east side needs to be removed in its entirety.

Please respond prior to January 15th with an anticipated timeframe. This letter also serves as an Administrative Notice in accordance with St. Francis City Code Chapter 2-11

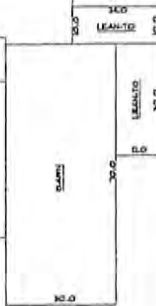
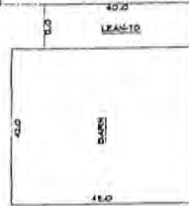
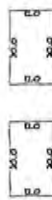
A handwritten signature in cursive script, reading 'Andy Schreder'.

Andy Schreder | Building Official | City of St. Francis
23340 Cree St NW | St. Francis, MN 55070 | www.stfrancismn.org
Ph.: 763.235.2317 | Fax: 763.753.9881 | aschreder@stfrancismn.org

PROPERTY ADDRESS:
23525 Varfolite Street Northwest
Elk River, MN 55330



PROPOSED
IMPROVEMENT



30'

30' SIDE
DATE

16 x 16
proposed
bunker

10.0 RETRACK

University of Minnesota Extension

www.extension.umn.edu

612-624-1222

Horse Extension

Barn fire safety

B. Gilkerson Wieland and J. Shutske, PhD, University of Minnesota

Recently, a large horse barn in Wright County, Minnesota burned, leading to several questions regarding fire safety in horse barns. Fire is caused when any type of "fuel" meets an "ignition" source. Hay and bedding material are common examples of fuel. Smoking, faulty electrical wiring, and improperly cured hay are common sources of ignition. The key is to minimize the potential for fuel and ignition sources to come together. Often, this is a matter of basic housekeeping. Here are some tips to help reduce your chance of a barn fire.

Identify ALL potential ignition sources, and take steps to eliminate them. For example, smoking should never be allowed on a property with horses. Electrical wiring must be done by a qualified electrician and inspected by a local building inspector or insurance expert. Lightning protection systems must be installed to code and maintained. Do not use extension cords except for short-term uses such as powering a tool. Make sure heating systems are properly installed and maintained. Store/buy hay only at the correct moisture (<17% moisture) and check its condition frequently. Hay over 25% moisture poses the threat of combustion. Commercially available hay temperature probes can be used to check the internal temperature of hay bales (the internal temperatures should be below 130° F) and stack hay to encourage air circulation (for more information see Preventing hay fires).

Take a close look at all potential ignition and fuel sources and how they might come together to start a fire. Take specific actions to separate these hazards. An example is a heat lamp located over bedding materials or any type of flammable surface. Liquid fuels should be stored in protected locations.

Look for immediate steps you can take. Things like "No Smoking" signs posted in barns and hay storage areas are not expensive and are effective if enforced.

Check wiring for obvious problems. Make sure no bare wires are exposed. Look for marks on the wire that indicate heating or arcing. DO NOT overload circuits. If you blow breakers or fuses, investigate and correct the problem. Do not use extension cords to replace fixed electrical wiring. Extension cords are a major fire hazard and can lead to an electrocuted animal or person. Make sure electrical motors on ventilation fans, heaters, and other equipment are well-maintained.

Separate hay and bedding from the livestock. Most insurance companies will only allow a small amount of hay to be stored in the same building as animals or require the installation of a firewall between where horses are housed and storage areas. Make sure that the areas around barns and other outbuildings are kept clear of brush, shrubs, woodpiles, and other materials that could feed a fire.

Install and frequently inspect fire extinguishers. Your insurer can advise you on the best type of portable

fire extinguishers or fire sprinkling systems to install. Fires in hay or in wood structures will require large amounts of water.

Develop an emergency plan and post it in the barn. Everyone must know how and when to evacuate the barn, how the animals will be removed, and who does what. Go over this plan with everyone including family members, employees, and boarders. All buildings must have multiple unblocked exits that people and animals can get out of quickly.

Check local building codes and fire safety regulations. For more information contact your local city hall and visit with a city/township building inspector who can provide additional resources.

Consider installing emergency lighting and lit exit signs. This will help if the power is out or if there is a lot of smoke. Such lighting may be more important for commercial facilities

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Horse Extension

Preventing hay fires

Krishona Martinson, PhD, University of Minnesota

Hay fires that damage or destroy hay, buildings, and livestock cost farmers millions of dollars in building and feed replacement costs, lost revenue, and increased insurance rates. Since 2000, there have been over 900 livestock and poultry barn fires in Minnesota, resulting in over 26 million dollars in damages (Minnesota Fire Incident Reporting System).

Although not specifically tracked by MFIRS, some of these fires have been caused by spontaneous combustion of hay that was baled too wet. Proper moisture at baling is the key to preventing hay fires. Managing the curing process and storage is vital to reducing the risk of hay fires. **MOISTURE IS THE KEY.** Moisture content of the hay at time of baling is the single biggest hay fire risk factor. Hay baled at less than 15% moisture has a minimal risk of fire (Table 1). As moisture content increases, the risk of dry matter losses and fire increase. Baled hay becomes a potential fire hazard when the interior bale temperature does not decrease. This occurs when heat is created by bacteria respiration. Table 2 lists the effects of internal bale temperature and fire potential.

Maximum temperature is not the only concern with potential hay fire. Rate of temperature increase should also be monitored and considered when addressing a fire risk. If the internal bale temperature is gradually rising, there is usually a minimal risk of fire. However, if a rapid rise in temperature occurs, the risk of fire is high.

Table 1. Moisture guidelines at time of baling.

Moisture Ranges (%)	Comments
<10	Too dry. Hay may be brittle and dusty.
10 - 15	Recommended moisture range. Minimal risk of fire.
16- 20	Could mold unless propionic acid is used, slight risk of fire hazard.
21 - 25	Will likely mold unless propionic acid is used, moderate risk of fire hazard.
>25	Severe heat damage is likely, high risk of fire hazard.

Table 2. The effects of internal bale temperature and fire potential.

Temperature Ranges (F)	Comments
< 130	Minimal fire risks.
130 to 140	Minimal fire risk. Continue checking.
150	Moderate fire risk. Check frequently.

Fire is not the only potential threat of wet hay. Hay that is baled too wet can have a significant amount of dry matter loss. Moldy hay is especially dangerous to horses. Ingestion and exposure to mold spores can cause colic, heaves, and other respiratory health issues. Moldy hay is also a health risk for horse owners. Farmer's lung is an allergic reaction associated with inhalation of dust containing spores and dried fungi that are commonly found in moldy hay. Farmers lung can be disabling for people and repeated exposures can cause scarring and fibrosis.

175 to 190	Fire is imminent. Call the fire department.
> 190	Use extreme caution. Bales may combust when moved.

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Cold Weather Colic in Horses

Cold winds and changing winter weather may not seem like contributing factors for equine colic. However, these conditions can foster changes in routine and eating habits that may affect the well being of your horse.

"A common winter time equine health concern is colic," notes Dr. Glennon Mays, clinical associate professor at the Texas A&M College of Veterinary Medicine & Biomedical Sciences. "Colic is a symptom of abdominal pain and can take the form of digestive problems, intestinal blockage, or a twisted intestine among other possibilities."

"There are several reasons why horses tend to colic more as the winter months linger," explains Mays. "Lack of quality grazing, too cold water and reduced exercise time can contribute to equine colic."

Spring's lush green pastures provide grass that contains moisture which is absorbed in the gut and adds wet fiber to more readily move food along your horse's digestive tract. When there is no green grass to graze, the possibility for impaction increases, explains Mays. Keep quality hay in front of your horse to provide roughage. The horse digestive tract is designed for high volume food such as grass and hay and these should be fed before grain.

"When temperatures drop, the tendency is to increase your horse's grain rations to meet the increased energy demands to stay warm. However, increased carbohydrates can upset your horse's digestive tract. When temperatures drop, feed extra hay, not grain, since hay provides more efficient 'heating fuel' for your horse," says Mays.

"Roughage quality and availability may negatively affect a horse's intake and digestion. Coarse, dry grazing or baled roughage can result in soft tissue abrasions inside the horse's mouth during the chewing process. This seemingly minor trauma can result in a horse's compromised ability to grind feed stuff due to soreness in the mouth," notes Mays.

Adequate water consumption is essential for your horse's well being. Horses tend to consume less water in colder weather since lower temperatures decrease their desire for water. However, they still need 10-12 gallons of water daily depending on work load. Also, if the temperature of their water source is below 45 degrees, horses tend to consume less water.

Insufficient water intake can result in dehydration and decreased blood volume (resulting in fewer nutrients to cells and decreased efficiency of waste removal). When water intake is decreased, your horse has an increased chance that its intestines may become impacted and colic can then occur, explains Mays.

"Frozen water sources obviously compromise water availability. Even best intentions like utilizing water warmers, insulating pipes and warming coils can fail, so check your horse's water source to be sure that all is functioning. Also, inspect plumbing for leaks when temperatures rise above freezing."

Historically, horses were foragers who moved and ate most of the day. They were mobile and not confined to a stall or fed restricted feedings," notes Mays. "Regular exercise and movement helps to keep a horse's digestive system functioning properly. Even if you can only turn your horse out for a short time or just walk around the barn, it is better than no exercise at all. The ideal situation is for your horse to spend the majority of its time on pasture."

During the winter months, you can minimize colic attacks if you monitor your horse's water intake to be sure that it is being well hydrated, feed quality hay that is free of impurities such as mold and exercise your horse or, provide pasture for roaming, says Mays.

While colic is not always avoidable, careful feeding, sufficient water intake and plenty of exercise can reduce the chances of your horse being affected by cold weather colic.

ABOUT PET TALK

Pet Talk is a service of the College of Veterinary Medicine & Biomedical Sciences, Texas A&M University. Stories can be viewed on the Web at vetmed.tamu.edu/news/pet-talk. Suggestions for future topics may be directed to editor@cvm.tamu.edu.

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Horse Extension

Equine winter care

Marcia Hathaway, PhD and Krishona Martinson, PhD, University of Minnesota

Horses, given the opportunity to acclimate to cold temperature, often prefer and are better off outdoors. The Minnesota Pet and Companion Animal Welfare Act outlines several minimal care standards for food, water, shelter, space, cleanliness, exercise, and hoof care. Some of these standards become even more important in the winter. For example, the act states that snow or ice is not an adequate water source for horses and all horses must be provided free choice protection from adverse weather conditions, including extreme cold, wind, and precipitation. Shelters are not required in outside exercise paddocks, as long as horses are not kept in those paddocks during adverse weather conditions.

Keep in mind that a horse requiring special care (i.e. trimming, medications, or special diet) during summer months will need that care continued throughout the winter months too. To ease the transition into winter, horses should be properly dewormed (i.e. based on fecal analysis) and in good body condition. This fact sheet outlines horse winter feeding and watering, shelter, blanketing, hoof care, and facilities management recommendations.

Water requirements

When horses consume winter feeds, water requirements may increase. Hay and grain typically contain less than 15% moisture, while in contrast, pastures possess 60 to 80% moisture. There are two common complications resulting from inadequate water consumption during cold weather: decreased feed intake and impaction colic. Even if quality feed is offered, horses will consume less if not drinking enough water. If less feed is consumed, horses might not have enough energy to tolerate the cold. Fecal contents must maintain adequate moisture levels. If fecal material becomes too dry, intestinal blockage or impaction may occur. A horse will not develop an impaction in one day, but can over several days to several weeks of inadequate water consumption.

Most adult horses weighing 1,000 pounds require a minimum of 10 to 12 gallons of water each day for their basic physiological needs. During winter months, water should be kept between 45 to 65°F to maximize consumption. Previous research indicated that ponies increased their water consumption by approximately 40% each day when the water was warmed above freezing during cold weather. Increasing salt intake will also stimulate a horse to drink more; adult horses should consume one to two ounces of salt per day. Waterers should be cleaned regularly, and clean, fresh water should always be available, regardless of temperature. If using a tank heater to warm water, inspect it carefully for worn wires or other damage, and check the water for electrical sensations or shocks.

Snow or ice is not an adequate water source for horses. There have been a few scientific studies that show some horses who are acclimated to winter weather conditions can meet their water requirements from snow. However, there are serious health risks associated with snow consumption, including the length of adjustment period as horses learn to ingest snow, the actual water content of the snow, and total water intake. Therefore, some wild horses can receive their water needs from snow, but the risk of gastrointestinal tract problems, colic, and reduced feed intake is significant for domestic horses.

Winter feeding

Cold temperatures will increase a horse's energy requirement as the need to maintain core body temperature increases. The temperature below which a horse needs additional energy to maintain body warmth is called the lower critical temperature. The lower critical temperature for a horse is estimated to be 41°F with a summer coat and 18°F with a winter coat (upper critical temperature is estimated at 86°F). However, the lower critical temperature can be affected by individual horse characteristics. A horse with short hair that is exposed to cold, wet weather will have a lower critical temperature higher than that of a horse with a thick hair coat and fat stores who is acclimated to cold weather. Another factor that can influence lower critical temperature is the size of the animal. Smaller animals have a greater surface area relative to body weight and can lose heat more rapidly than a larger animal. A weanling may reach their lower critical temperature before a mature horse. More importantly, cold weather can slow growth because calories are diverted from weight gain to temperature maintenance. To minimize a growth slump during cold weather, young horses should be fed additional calories.

Energy needs for a horse at maintenance increase about 1% for each degree below 18°F. For example, if the temperature is 0°F, a 1,000 pound idle, adult horse would need an approximately 2 additional pounds of forage daily. It is best to provide the extra energy as forage. Some believe that feeding more grain will help keep a horse warmer. However, not as much heat is produced as a by-product of digestion, absorption, and utilization of grain as is produced from the microbial fermentation of forage. Most data suggest that the need for other nutrients do not change during cold weather. However, consider feeding loose salt instead of block salt, as horses may not want to lick cold salt blocks during winter months.

During winter months, heavy hair coats can often hide weight loss. Regular body condition scoring is recommended to gauge weight and assess horse health. If a horse starts to lose body condition, increases in feed are recommended. Conversely, if a horse starts gaining excessive body condition, reducing the feed is necessary. Sorting horses by age, body condition, and nutrient requirements makes it easier to feed groups of horses appropriately.

Shelter

Horses should have access to shelter from wind, sleet, and storms (Figure 1). Free access to a stable or an open-sided shed works well, as do trees if a building is not available. In the absence of wind and moisture, horses tolerate temperatures at or slightly below 0°F. If horses have access to a shelter, they can tolerate temperatures as low as -40°F. However, horses are most comfortable at temperatures between 18 and 59°F, depending on their hair coat. A general rule of thumb for run-in or open-front shed size is 240 square feet for 2



Dr. Krishona Martinson, University of

horses (i.e. 12 x 20 feet) and 60 square feet (i.e. an additional 10 x 6 feet) for each additional horse. These recommendations assume horses housed together get along well.

Researchers recently examined daytime shelter-seeking behavior in domestic horses housed outdoors and studied the relationship of temperature, precipitation, and wind speed with shelter-seeking behavior. Shelter usage ranged from a low of less than 10% in mild weather conditions, to a high of 62% when snowing and wind speed were greater than 11 mph. More horses used shelters in breezy conditions during snow or rain. Shelter access is very important in certain weather conditions.

Figure 1. Horses need access to shelter and should be fed additional hay during adverse winter weather. *Tip: feed hay in a container or feeder to reduce waste*

Blanketing

The hair coat acts as insulation by trapping air. If the hair is wet or full of mud, air is excluded, reducing its insulating value and increasing heat loss. As little as 0.1 inch of rain can cause cold stress by matting the hair and reducing its insulating value. It is important to keep the horse dry and sheltered from moisture. As expected, a horse with a thicker hair coat can retain more heat. Research has been conducted on the benefits of blanketing a horse to reduce the effects of cold weather (Figure 2). Most horses are blanketed because of personal beliefs of the owner. However, blanketing a horse is necessary to reduce the effects of cold or inclement weather when:



Dr. Carey Williams, Rutgers

Figure 2. Blanketing a horse during the winter is necessary if the horse is clipped or lacking shelter.

- There is no shelter available during turnout periods and the temperatures drop below 5°F, or the wind chill is below 5°F
- There is a chance the horse will become wet (not usually a problem with snow, but much more of a problem with rain, ice, and/or freezing rain)
- The horse has had its winter coat clipped
- The horse is very young or very old
- The horse has not been acclimated to the cold (i.e. recently relocated from a southern climate)
- The horse has a body condition score of 3 or less

It is equally important that the blanket fits the horse. Horses can develop rub marks or sores where the straps secure the blanket if it fits improperly. If the horse is blanketed continuously, the blanket should be removed daily, inspected for damages, and repositioned. Make sure blankets are kept dry and do not put a blanket on a wet horse; wait until the horse is dry before blanketing. Keep in mind a horse will continue to develop a natural winter coat until December 22, while days are becoming shorter. Horses begin to lose their winter coat, and start forming their summer coat, as the days begin to get longer on December 23. Blanketing before December 22 will decrease a horse's natural winter coat.

Exercise

Exercise should not stop during the winter months. During extreme winter weather, many horses are often confined. Confinement and limited exercise can lead to lower leg edema (stocking up). Efforts should be

made to provide turn out or exercise as often as possible. **Caution** needs to be taken when riding in deep, heavy or wet snow as this could cause tendon injuries and is extremely hard work for an unfit horse. Avoid icy areas for both horse and rider safety.

One of the greatest challenges with winter riding involves cooling down a horse with a thick winter coat. Leaving a hot, wet horse standing in a cold barn can lead to illness. If horses are exercised regularly to the extent of generating sweat through the winter months, a 'trace clip' can be used (Figure 3). With a trace clip, the hair is shaved to about 1/8 inch in length from the underside of the neck and abdomen to the sides of the horse and from the elbows to about a quarter of the way up the body. Other types of clipping patterns are often used as well. Clipped horses have higher energy needs and should be fed accordingly. Clipped hair will not grow back rapidly in the winter. Once horses are clipped, appropriate shelter and blankets must be used throughout the winter and into the early spring months.



Dr. Carey Williams, Rutgers

Figure 3. Trace clipping can reduce the time necessary to cool down a horse during winter riding.

Hoof care

Horse hooves generally grow more slowly in the winter. However, horses should still be trimmed every six to twelve weeks. The trimming or shoeing interval depends on each horse and the amount of hoof they grow. Horse hooves are very susceptible to developing "ice or snow balls" in their hooves during the winter (Figure 4). These balls are compacted ice or snow that make it difficult for the horse to walk, increase the chance of slipping and falls, and may put increased pressure on tendons and joints. Hooves should be picked clean daily, especially after a heavy snow.



Dr. Krishona Martinson, University of Minnesota

Figure 4. Regular hoof picking is necessary to remove snow that becomes packed into the hoof.

Horses have better traction on snow and ice when left bare foot compared to being shod. If the horse must be shod, care should be taken to avoid slipping and compaction of snow and ice in the hoof. Snow pads and studs that are attached to shoes can be used to help offset the effects of slipping and snow compaction in the hoof. Sole bruising can also be a problem in the winter, especially when working on uneven or frozen ground.

Winter paddock and facilities management

Ice is a problem in horse paddocks as falls and slips can lead to serious injury. The best solution is to remove the horse from the paddock until the ice melts, but few horse owners have that option.

Sand can be used to increase traction. However, horses should not be fed in the area where the sand is spread to minimize the risk of ingestion. Straight salt can speed the melting of the ice if temperatures are not too cold. There is no research documenting the effect of salt on horse hooves, but as a precaution, pure salt should be used in moderation. If using pure salt to melt ice, make sure the horses have an alternative

source of salt to reduce ingestion off the ground. A mixture of sand and salt should not be used in horse paddocks due to the chance that horses may accidentally ingest sand via their interest in the salt. Spreading a thin layer of wood ash or fresh manure are additional options. Other options like shavings, hay, and straw tend to slide over ice and do not provide additional traction. Small rocks can provide traction, but can be accidentally ingested or become lodged in hooves. To reduce water/ice in the future, improve the grade, install gutters on the barn, and reduce the amount of manure in the paddock.

During heavy snowfalls, horse owners are encourage to remove snow from paddocks to ensure horses have easy access to feed, water, and shelter. When piling the removed snow, avoid low areas, drainage ways, septic tank areas, wellheads, and other drinking sources. Snow removed from paddocks contains manure, bedding, and soil, and could contaminate streams and wetlands. Moving snow is fairly expensive, so keep distances and travel time to a minimum. Removing snow also helps drainage during the spring snow melt and exposes the paddock surface, especially in non-shaded areas, which increases the warming and drying of the paddock in the spring.

To maintain support under snow loads, barns and shelters should have truss certificates of at least 30 pounds per square foot of snow load. Most buildings fail at the joints; if concerns arise about a barn structure under a snow load, examine the trusses and joints to see if there is movement, cracking, or dry rot. Wood will generally give warning sounds before complete failure. In enclosed barns, snow blowing into attics and wall spaces can melt and cause wet conditions suitable for mold development and rotting. Ventilation is important to help control temperature and humidity levels and remove or decrease contaminants. Poor ventilation can affect a horse's respiratory health. Ceiling fans and can help facilitate adequate air exchange and wet bedding and manure should be removed daily.

Conclusions

During winter months, horses should be given warmed water (45 to 65°F), fed additional hay during extreme cold, given access to shelter, receive regular hoof care, and have their body condition assessed regularly. Facility stability and ventilation should also be evaluated frequently. Horses, given the opportunity to acclimate to cold temperature, often prefer and are better off outdoors.

Contributing authors: Chuck Clanton, PhD, University of Minnesota and Carey Williams, PhD, Rutgers University.

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Understanding Rain Rot

By Chad Mendell | Jan 29, 2014 |  Basic | Topics: Hair Loss, Other Skin Problems



Practicing good hygiene (such as daily grooming with clean brushes) and reducing environmental risk factors (constant wet and/or humid environments and biting insects) are the best ways to prevent your horse from getting rain rot.

Photo: The Horse Staff

While spending as much time as possible at pasture can be good mentally for your horse, if you live in an area with wet or very humid conditions, your horse might be at risk of contracting a bacterial skin disease commonly known as "rain rot."

Ann Swinker, PhD, an extension horse specialist at Penn State University, explains what the infection looks like, how to treat infected horses, and ways to

prevent horses from getting or spreading the infection.

Cause

"Rain rot or rain scald (also known as dermatophilosis) is caused by bacterial infection, and it often is mistaken for a fungal disease," Swinker says. "The bacteria live in the outer

layer of skin and cause from pinpoint to large, crusty scabs."

Dermatophilus congolensis, the bacterium found to cause this infection, lives in dormant within the skin until the skin is compromised in some way, which can happen when there's prolonged wetness, high humidity, high temperature, or attacks by biting insects, according to *The Merck Veterinary Manual*. Warm temperatures and high humidity can also cause an increase in the number of biting insects (particularly flies and ticks) present that can spread the infection from horse to horse.

Rain rot occurs when the infective zoospores (created by *D. congolensis* bacteria to propagate themselves) reach a compromised skin site. Swinker says, "The zoospores germinate and produce hyphae (threadlike tentacles), which penetrate into the living epidermis and spread in all directions, resulting in an acute inflammatory skin condition."

Diagnosis

It's easy to diagnose rain rot, generally on visual confirmation of the skin lesions alone, but a more definite diagnosis can be made by examining a skin scraping for Gram-positive bacteria under a microscope or by culturing the bacteria.

Horses with long winter coats will develop paintbrush lesions (raised, matted tufts of hair) along their dorsal surfaces, which include the neck, withers, back, and croup, as well as on the lower limbs. Light-skinned areas are usually more severely affected. As the lesions get larger and join together, they will progress to a crust or scab formation that when removed will expose yellow-green pus between the necrotic and living skin layers.

Swinker says, "If rubbed, the 'bumps' might rub off in the form of scabs with a small, hairless spot of skin showing."

Treatment

Most acute cases of rain rot can heal on their own; however, Swinker recommends treating even minor cases because the lesions can spread and worsen. The lesions also interfere with use (especially if they are located along the horse's back or withers) and they can be painful for the horse.

She says, "In early or less severe cases, simply removing the scabs (by bathing the horse) with antimicrobial shampoos and currying will take care of the problem." However, more severe cases in which the infection has affected deeper skin layers might require your veterinarian to give antibiotic injections (such as procaine penicillin and streptomycin). Unlike most skin conditions, rain rot is not itchy, but it can be painful to the touch. Be cautious when bathing or removing the scabs.

Prevention

Practicing good hygiene, such as daily grooming with clean brushes, along with reducing environmental risk factors (constant wet and/or humid environments and biting insects), are the best ways to prevent your horse from getting rain rot. Because this infection can spread to other horses, it's important to isolate the infected horse to reduce the risk of spreading the infection to pasturemates. Also, be sure to use a separate set of grooming tools and tack (if the infection is light enough to continue working the horse without causing harm), and disinfect these items between each use.

ABOUT THE AUTHOR

Chad Mendell

Chad Mendell is the former Managing Editor for TheHorse.com .

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MEMORANDUM

TO: St. Francis Planning Commission

FROM: Nate Sparks

DATE: September 11, 2015

RE: Floodplain Ordinance

BACKGROUND

The DNR has created a new model floodplain ordinance that is intended to correspond with the new flood maps that go into effect this December for the City. The ordinance is intended to replace the City's existing floodplain ordinance. The City is required to adopt this ordinance to continue participating in the flood insurance program.

RECOMMENDED ACTION

The Planning Commission should review the ordinance and forward a recommendation to the City Council.



Minnesota Sample Floodplain Ordinance

Three District Ordinance

This sample ordinance includes the three primary types of floodplain districts: Floodway, Flood Fringe, and General Floodplain. It can be used in a variety of situations, where all three districts or only some of them are present.

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SECTION 1.0 STATUTORY AUTHORIZATION, FINDINGS OF FACT AND PURPOSE

1.1 Statutory Authorization: The legislature of the State of Minnesota has, in Minnesota Statutes Chapter 103F and Chapter 462 delegated the responsibility to local government units to adopt regulations designed to minimize flood losses. Therefore, the City Council of St. Francis, Minnesota, does ordain as follows.

1.2 Purpose:

- 1.21 This ordinance regulates development in the flood hazard areas of St. Francis, Minnesota. These flood hazard areas are subject to periodic inundation, which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base. It is the purpose of this ordinance to promote the public health, safety, and general welfare by minimizing these losses and disruptions.
- 1.22 National Flood Insurance Program Compliance. This ordinance is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations Parts 59 -78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.
- 1.23 This ordinance is also intended to preserve the natural characteristics and functions of watercourses and floodplains in order to moderate flood and stormwater impacts, improve water quality, reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits and enhance community and economic development.

SECTION 2.0 GENERAL PROVISIONS

2.1 How to Use This Ordinance: This ordinance adopts the floodplain maps applicable to St. Francis and includes three floodplain districts: Floodway, Flood Fringe, and General Floodplain.

- 2.11 Where Floodway and Flood Fringe districts are delineated on the floodplain maps, the standards in Sections 4 or 5 will apply, depending on the location of a property.
- 2.12 Locations where Floodway and Flood Fringe districts are not delineated on the floodplain maps are considered to fall within the General Floodplain district. Within the General Floodplain district, the Floodway District standards in Section 4 apply unless the floodway boundary is determined, according to the process outlined in Section 6. Once the floodway boundary is determined, the Flood Fringe District standards in Section 5 may apply outside the floodway.

2.2 Lands to Which Ordinance Applies: This ordinance applies to all lands within the jurisdiction of the City of St. Francis shown on the Official Zoning Map and/or the attachments to the map as being located within the boundaries of the Floodway, Flood Fringe, or General Floodplain Districts.

- 2.21 The Floodway, Flood Fringe and General Floodplain Districts are overlay districts that are superimposed on all existing zoning districts. The standards imposed in the overlay districts are in addition to any other requirements in this ordinance. In case of a conflict, the more restrictive standards will apply.

2.3 Incorporation of Maps by Reference: The following maps together with all attached material are hereby adopted by reference and declared to be a part of the Official Zoning Map and this ordinance. The attached material includes the Flood Insurance Study for Anoka County, Minnesota, and Incorporated Areas and the Flood Insurance Rate Map panels enumerated below, all dated

December 16, 2015 and all prepared by the Federal Emergency Management Agency. These materials are on file in the [Office of the City Administrator?].

- 27003C0020E
- 27003C0040E
- 27003C0045E
- 27003C0065E
- 27003C0070E

2.4 Regulatory Flood Protection Elevation: The regulatory flood protection elevation (RFPE) is an elevation no lower than one foot above the elevation of the regional flood plus any increases in flood elevation caused by encroachments on the floodplain that result from designation of a floodway.

2.5 Interpretation: The boundaries of the zoning districts are determined by scaling distances on the Flood Insurance Rate Map.

2.51 Where a conflict exists between the floodplain limits illustrated on the official zoning map and actual field conditions, the flood elevations shall be the governing factor. The Zoning Administrator must interpret the boundary location based on the ground elevations that existed on the site on the date of the first National Flood Insurance Program map showing the area within the regulatory floodplain, and other available technical data.

2.52 Persons contesting the location of the district boundaries will be given a reasonable opportunity to present their case to the Board of Adjustment and to submit technical evidence.

2.6 Abrogation and Greater Restrictions: It is not intended by this ordinance to repeal, abrogate, or impair any existing easements, covenants, or other private agreements. However, where this ordinance imposes greater restrictions, the provisions of this ordinance prevail. All other ordinances inconsistent with this ordinance are hereby repealed to the extent of the inconsistency only.

2.7 Warning and Disclaimer of Liability: This ordinance does not imply that areas outside the floodplain districts or land uses permitted within such districts will be free from flooding or flood damages. This ordinance does not create liability on the part of the City of St. Francis or its officers or employees for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

2.8 Severability: If any section, clause, provision, or portion of this ordinance is adjudged unconstitutional or invalid by a court of law, the remainder of this ordinance shall not be affected and shall remain in full force.

2.9 Definitions: Unless specifically defined below, words or phrases used in this ordinance must be interpreted according to common usage and so as to give this ordinance its most reasonable application.

2.911 Accessory Use or Structure – a use or structure on the same lot with, and of a nature customarily incidental and subordinate to, the principal use or structure.

2.912 Base Flood Elevation – The elevation of the “regional flood.” The term “base flood elevation” is used in the flood insurance survey.

2.913 Basement – any area of a structure, including crawl spaces, having its floor or base subgrade (below ground level) on all four sides, regardless of the depth of excavation below ground level.

- 2.914 Conditional Use – a specific type of structure or land use listed in the official control that may be allowed but only after an in-depth review procedure and with appropriate conditions or restrictions as provided in the official zoning controls or building codes and upon a finding that:
- (a) Certain conditions as detailed in the zoning ordinance exist.
 - (b) The structure and/or land use conform to the comprehensive land use plan if one exists and are compatible with the existing neighborhood.
- 2.915 Critical Facilities – facilities necessary to a community’s public health and safety, those that store or produce highly volatile, toxic or water-reactive materials, and those that house occupants that may be insufficiently mobile to avoid loss of life or injury. Examples of critical facilities include hospitals, correctional facilities, schools, daycare facilities, nursing homes, fire and police stations, wastewater treatment facilities, public electric utilities, water plants, fuel storage facilities, and waste handling and storage facilities.
- 2.916 Development – any manmade change to improved or unimproved real estate, including buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.
- 2.917 Equal Degree of Encroachment – a method of determining the location of floodway boundaries so that floodplain lands on both sides of a stream are capable of conveying a proportionate share of flood flows.
- 2.918 Farm Fence – A fence as defined by Minn. Statutes Section 344.02, Subd. 1(a)-(d). An open type fence of posts and wire is not considered to be a structure under this ordinance. Fences that have the potential to obstruct flood flows, such as chain link fences and rigid walls, are regulated as structures under this ordinance.
- 2.919 Flood – a temporary increase in the flow or stage of a stream or in the stage of a wetland or lake that results in the inundation of normally dry areas.
- 2.920 Flood Frequency – the frequency for which it is expected that a specific flood stage or discharge may be equaled or exceeded.
- 2.921 Flood Fringe – that portion of the floodplain outside of the floodway. Flood fringe is synonymous with the term “floodway fringe” used in the Flood Insurance Study for Anoka County, Minnesota.
- 2.922 Flood Prone Area – any land susceptible to being inundated by water from any source (see “Flood”).
- 2.923 Floodplain – the beds proper and the areas adjoining a wetland, lake or watercourse which have been or hereafter may be covered by the regional flood.
- 2.924 Floodproofing – a combination of structural provisions, changes, or adjustments to properties and structures subject to flooding, primarily for the reduction or elimination of flood damages.
- 2.925 Floodway – the bed of a wetland or lake and the channel of a watercourse and those portions of the adjoining floodplain which are reasonably required to carry or store the regional flood discharge.
- 2.926 Lowest Floor – the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, used solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a building’s lowest floor.

- 2.927 Manufactured Home – a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured home” does not include the term “recreational vehicle.”
- 2.928 Obstruction – any dam, wall, wharf, embankment, levee, dike, pile, abutment, projection, excavation, channel modification, culvert, building, wire, fence, stockpile, refuse, fill, structure, or matter in, along, across, or projecting into any channel, watercourse, or regulatory floodplain which may impede, retard, or change the direction of the flow of water, either in itself or by catching or collecting debris carried by such water.
- 2.929 One Hundred Year Floodplain – lands inundated by the “Regional Flood” (see definition).
- 2.930 Principal Use or Structure – all uses or structures that are not accessory uses or structures.
- 2.931 Reach – a hydraulic engineering term to describe a longitudinal segment of a stream or river influenced by a natural or man-made obstruction. In an urban area, the segment of a stream or river between two consecutive bridge crossings would most typically constitute a reach.
- 2.932 Recreational Vehicle – a vehicle that is built on a single chassis, is 400 square feet or less when measured at the largest horizontal projection, is designed to be self-propelled or permanently towable by a light duty truck, and is designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use. For the purposes of this ordinance, the term recreational vehicle is synonymous with the term “travel trailer/travel vehicle.”
- 2.933 Regional Flood – a flood which is representative of large floods known to have occurred generally in Minnesota and reasonably characteristic of what can be expected to occur on an average frequency in the magnitude of the 1% chance or 100-year recurrence interval. Regional flood is synonymous with the term “base flood” used in a flood insurance study.
- 2.934 Regulatory Flood Protection Elevation (RFPE) - an elevation not less than one foot above the elevation of the regional flood plus any increases in flood elevation caused by encroachments on the floodplain that result from designation of a floodway.
- 2.935 Repetitive Loss: Flood related damages sustained by a structure on two separate occasions during a ten year period for which the cost of repairs at the time of each such flood event on the average equals or exceeds 25% of the market value of the structure before the damage occurred.
- 2.936 Special Flood Hazard Area – a term used for flood insurance purposes synonymous with “One Hundred Year Floodplain.”
- 2.937 Structure - anything constructed or erected on the ground or attached to the ground or on-site utilities, including, but not limited to, buildings, factories, sheds, detached garages, cabins, manufactured homes, recreational vehicles not meeting the exemption criteria specified in Section 9.22 of this ordinance and other similar items.
- 2.938 Substantial Damage - means damage of any origin sustained by a structure where the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
- 2.939 Substantial Improvement - within any consecutive 365-day period, any reconstruction, rehabilitation (including normal maintenance and repair), repair after damage, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the “start of construction” of the improvement. This

term includes structures that have incurred “substantial damage,” regardless of the actual repair work performed. The term does not, however, include either:

- (a) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions.
- (b) Any alteration of a “historic structure,” provided that the alteration will not preclude the structure’s continued designation as a “historic structure.” For the purpose of this ordinance, “historic structure” is as defined in 44 Code of Federal Regulations, Part 59.1.

2.10. Annexations: The Flood Insurance Rate Map panels adopted by reference into Section 2.3 above may include floodplain areas that lie outside of the corporate boundaries of the City of St. Francis at the time of adoption of this ordinance. If any of these floodplain land areas are annexed into the City after the date of adoption of this ordinance, the newly annexed floodplain lands will be subject to the provisions of this ordinance immediately upon the date of annexation.

SECTION 3.0 ESTABLISHMENT OF ZONING DISTRICTS

3.1 Districts:

- 3.11 Floodway District. The Floodway District includes those areas designated as floodway on the Flood Insurance Rate Map adopted in Section 2.3. For lakes, wetlands and other basins (that do not have a floodway designated), the Floodway District includes those areas designated as Zone A on the Flood Insurance Rate Map that are at or below the ordinary high water level as defined in Minnesota Statutes, Section 103G.005, subdivision 14.
- 3.12 Flood Fringe District. The Flood Fringe District includes those areas designated as floodway fringe on the Flood Insurance Rate Map adopted in Section 2.3, as being within Zone AE but being located outside of the floodway. For lakes, wetlands and other basins (that do not have a floodway designated), the Flood Fringe District includes those areas designated as Zone A on the Flood Insurance Rate Map panels adopted in Section 2.3 that are below the 1% annual chance (100-year) flood elevation but above the ordinary high water level as defined in Minnesota Statutes, Section 103G.005, subdivision 14.
- 3.13 General Floodplain District. The General Floodplain District includes those areas designated as Zone A on the Flood Insurance Rate Map adopted in Section 2.3, but not subject to the criteria in sections 3.11 and 3.12 above.

3.2 Compliance: Within the floodplain districts established in this ordinance, the use of any land, the use, size, type and location of structures on lots, the installation and maintenance of transportation, utility, water supply and waste treatment facilities, and the subdivision of land must comply with the terms of this ordinance and other applicable regulations. All uses not listed as permitted uses or conditional uses in Sections 4.0, 5.0 and 6.0, respectively, are prohibited.

In addition, a caution is provided here that:

- 3.21 New and replacement manufactured homes and certain recreational vehicles are subject to the general provisions of this ordinance and specifically Section 9.0.
- 3.22 Modifications, additions, structural alterations, normal maintenance and repair, or repair after damage to existing nonconforming structures and nonconforming uses of structures or land are regulated by the general provisions of this ordinance and specifically Section 11.0.

- 3.23 All structures must be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
- 3.24 As-built elevations for elevated or floodproofed structures must be certified by ground surveys and flood-proofing techniques must be designed and certified by a registered professional engineer or architect as specified in the general provisions of this ordinance and specifically as stated in Section 10.0 of this ordinance.
- 3.25 Critical facilities, as defined in Section 2.915, are prohibited in all floodplain districts.

SECTION 4.0 FLOODWAY DISTRICT (FW)

4.1 Permitted Uses: The following uses, subject to the standards set forth in Section 4.2, are permitted uses if otherwise allowed in the underlying zoning district or any applicable overlay district:

- 4.11 General farming, pasture, grazing, outdoor plant nurseries, horticulture, truck farming, forestry, sod farming, and wild crop harvesting.
- 4.12 Industrial-commercial loading areas, parking areas, and airport landing strips.
- 4.13 Open space uses, including but not limited to private and public golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, boat launching ramps, swimming areas, parks, wildlife and nature preserves, game farms, fish hatcheries, shooting preserves, hunting and fishing areas, and single or multiple purpose recreational trails.
- 4.14 Residential lawns, gardens, parking areas, and play areas.
- 4.15 Railroads, streets, bridges, utility transmission lines and pipelines, provided that the Department of Natural Resources' Area Hydrologist is notified at least ten days prior to issuance of any permit, and that the standards in Sections 4.41, 4.43(a) and 4.46 of this ordinance are met.

4.2 Standards for Floodway Permitted Uses:

- 4.21 The use must have a low flood damage potential.
- 4.22 With the exception of the uses listed in Section 4.15, the use must not obstruct flood flows or increase flood elevations and must not involve structures, fill, obstructions, excavations or storage of materials or equipment.
- 4.23 Any facility that will be used by employees or the general public must be designed with a flood warning system that provides adequate time for evacuation if the area is inundated to a depth and velocity such that the depth (in feet) multiplied by the velocity (in feet per second) would exceed a product of four upon occurrence of the regional (1% chance) flood.

4.3 Conditional Uses: The following uses may be allowed as conditional uses following the standards and procedures set forth in Section 10.4 of this ordinance and further subject to the standards set forth in Section 4.4, if otherwise allowed in the underlying zoning district or any applicable overlay district.

- 4.31 Structures accessory to the uses listed in 4.1 above and the uses listed in 4.32 - 4.37 below.
- 4.32 Extraction and storage of sand, gravel, and other materials.
- 4.33 Marinas, boat rentals, docks, piers, wharves, and water control structures.
- 4.34 Storage yards for equipment, machinery, or materials.

- 4.35 Placement of fill or construction of fences that obstruct flood flows. Farm fences, as defined in section 2.918, are permitted uses.
- 4.36 Travel-ready recreational vehicles meeting the exception standards in Section 9.3.
- 4.37 Levees or dikes intended to protect agricultural crops for a frequency flood event equal to or less than the 10-year frequency flood event.

4.4 Standards for Floodway Conditional Uses:

- 4.41 All Uses. A conditional use must not cause any increase in the stage of the 1% chance or regional flood or cause an increase in flood damages in the reach or reaches affected.
- 4.42 Fill; Storage of Materials and Equipment:
 - (a) The storage or processing of materials that are, in time of flooding, flammable, explosive, or potentially injurious to human, animal, or plant life is prohibited.
 - (b) Fill, dredge spoil, and other similar materials deposited or stored in the floodplain must be protected from erosion by vegetative cover, mulching, riprap or other acceptable method. Permanent sand and gravel operations and similar uses must be covered by a long-term site development plan.
 - (c) Temporary placement of fill, other materials, or equipment which would cause an increase to the stage of the 1% percent chance or regional flood may only be allowed if the City Council has approved a plan that assures removal of the materials from the floodway based upon the flood warning time available.
- 4.43 Accessory Structures:
 - (a) Accessory structures must not be designed for human habitation.
 - (b) Accessory structures, if permitted, must be constructed and placed on the building site so as to offer the minimum obstruction to the flow of flood waters:
 - (1) Whenever possible, structures must be constructed with the longitudinal axis parallel to the direction of flood flow; and
 - (2) So far as practicable, structures must be placed approximately on the same flood flow lines as those of adjoining structures.
 - (c) Accessory structures must be elevated on fill or structurally dry floodproofed in accordance with the FP-1 or FP-2 floodproofing classifications in the State Building Code. All floodproofed accessory structures must meet the following additional standards:
 - (1) The structure must be adequately anchored to prevent flotation, collapse or lateral movement and designed to equalize hydrostatic flood forces on exterior walls; and
 - (2) Any mechanical and utility equipment in the structure must be elevated to or above the regulatory flood protection elevation or properly floodproofed.
 - (d) As an alternative, an accessory structure may be internally/wet floodproofed to the FP-3 or FP-4 floodproofing classifications in the State Building Code, provided the accessory structure constitutes a minimal investment and does not exceed 576 square feet in size. A detached garage may only be used for parking of vehicles and limited storage. All structures must meet the following standards:
 - (1) To allow for the equalization of hydrostatic pressure, there must be a minimum of two "automatic" openings in the outside walls of the structure, with a total net area

of not less than one square inch for every square foot of enclosed area subject to flooding; and

- (2) There must be openings on at least two sides of the structure and the bottom of all openings must be no higher than one foot above the lowest adjacent grade to the structure. Using human intervention to open a garage door prior to flooding will not satisfy this requirement for automatic openings.
- 4.44 Structural works for flood control that will change the course, current or cross section of protected wetlands or public waters are subject to the provisions of Minnesota Statutes, Section 103G.245.
- 4.45 A levee, dike or floodwall constructed in the floodway must not cause an increase to the 1% chance or regional flood. The technical analysis must assume equal conveyance or storage loss on both sides of a stream.
- 4.46 Floodway developments must not adversely affect the hydraulic capacity of the channel and adjoining floodplain of any tributary watercourse or drainage system.

SECTION 5.0 FLOOD FRINGE DISTRICT (FF)

5.1 Permitted Uses: Permitted uses are those uses of land or structures allowed in the underlying zoning district(s) that comply with the standards in Sections 5.2. If no pre-existing, underlying zoning districts exist, then any residential or nonresidential structure or use of a structure or land is a permitted use provided it does not constitute a public nuisance.

5.2 Standards for Flood Fringe Permitted Uses:

- 5.21 All structures, including accessory structures, must be elevated on fill so that the lowest floor, as defined, is at or above the regulatory flood protection elevation. The finished fill elevation for structures must be no lower than one foot below the regulatory flood protection elevation and the fill must extend at the same elevation at least 15 feet beyond the outside limits of the structure.
 - (a) All service utilities, including ductwork, must be elevated or water-tight to prevent infiltration of floodwaters.
 - (b) As an alternative to elevation on fill, an accessory structure that constitutes a minimal investment and that does not exceed 576 square feet in size may be internally floodproofed in accordance with Section 4.43.
- 5.22 The cumulative placement of fill or similar material on a parcel must not exceed 1,000 cubic yards, unless the fill is specifically intended to elevate a structure in accordance with Section 5.21 of this ordinance, or if allowed as a conditional use under Section 5.33 below.
- 5.23 The storage of any materials or equipment must be elevated on fill to the regulatory flood protection elevation.
- 5.24 The storage or processing of materials that are, in time of flooding, flammable, explosive, or potentially injurious to human, animal, or plant life is prohibited.
- 5.25 Fill must be properly compacted and the slopes must be properly protected by the use of riprap, vegetative cover or other acceptable method.
- 5.26 All new principal structures must have vehicular access at or above an elevation not more than two feet below the regulatory flood protection elevation, or must have a flood warning /emergency evacuation plan acceptable to the City Council.

- 5.27 Accessory uses such as yards, railroad tracks, and parking lots may be at an elevation lower than the regulatory flood protection elevation. However, any facilities used by employees or the general public must be designed with a flood warning system that provides adequate time for evacuation if the area is inundated to a depth and velocity such that the depth (in feet) multiplied by the velocity (in feet per second) would exceed a product of four upon occurrence of the regional (1% chance) flood.
- 5.28 Interference with normal manufacturing/industrial plant operations must be minimized, especially along streams having protracted flood durations. In considering permit applications, due consideration must be given to the needs of industries with operations that require a floodplain location.
- 5.29 Flood fringe developments must not adversely affect the hydraulic capacity of the channel and adjoining floodplain of any tributary watercourse or drainage system.
- 5.30 Manufactured homes and recreational vehicles must meet the standards of Section 9 of this ordinance.

5.3 Conditional Uses: The following uses and activities may be allowed as conditional uses, if allowed in the underlying zoning district(s) or any applicable overlay district, following the procedures in Section 10.4 of this ordinance. Conditional uses must meet the standards in Sections 5.24 through 5.30 and Section 5.4.

- 5.31 Any structure that is not elevated on fill or floodproofed in accordance with Section 5.21 of this ordinance.
- 5.32 Storage of any material or equipment below the regulatory flood protection elevation.
- 5.33 The cumulative placement of more than 1,000 cubic yards of fill when the fill is not being used to elevate a structure in accordance with Section 5.21 of this ordinance.

5.4 Standards for Flood Fringe Conditional Uses:

- 5.41 The standards listed in Sections 5.24 through 5.30 apply to all conditional uses.
- 5.42 Basements, as defined by Section 2.913 of this ordinance, are subject to the following:
 - (a) Residential basement construction is not allowed below the regulatory flood protection elevation.
 - (b) Non-residential basements may be allowed below the regulatory flood protection elevation provided the basement is structurally dry floodproofed in accordance with Section 5.44 of this ordinance.
- 5.43 All areas of nonresidential structures, including basements, to be placed below the regulatory flood protection elevation must be floodproofed in accordance with the structurally dry floodproofing classifications in the State Building Code. Structurally dry floodproofing must meet the FP-1 or FP-2 floodproofing classification in the State Building Code, which requires making the structure watertight with the walls substantially impermeable to the passage of water and with structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. Structures wet floodproofed to the FP-3 or FP-4 classification are not permitted.
- 5.44 The placement of more than 1,000 cubic yards of fill or other similar material on a parcel (other than for the purpose of elevating a structure to the regulatory flood protection elevation) must comply with an approved erosion/sedimentation control plan.

- (a) The plan must clearly specify methods to be used to stabilize the fill on site for a flood event at a minimum of the regional (1% chance) flood event.
 - (b) The plan must be prepared and certified by a registered professional engineer or other qualified individual acceptable to the City Council.
 - (c) The plan may incorporate alternative procedures for removal of the material from the floodplain if adequate flood warning time exists.
- 5.45 Storage of materials and equipment below the regulatory flood protection elevation must comply with an approved emergency plan providing for removal of such materials within the time available after a flood warning.
- 5.46 Alternative elevation methods other than the use of fill may be utilized to elevate a structure's lowest floor above the regulatory flood protection elevation. These alternative methods may include the use of stilts, pilings, parallel walls, etc., or above-grade, enclosed areas such as crawl spaces or tuck under garages. The base or floor of an enclosed area shall be considered above-grade and not a structure's basement or lowest floor if: 1) the enclosed area is above-grade on at least one side of the structure; 2) it is designed to internally flood and is constructed with flood resistant materials; and 3) it is used solely for parking of vehicles, building access or storage. The above-noted alternative elevation methods are subject to the following additional standards:
- (a) Design and Certification - The structure's design and as-built condition must be certified by a registered professional engineer or architect as being in compliance with the general design standards of the State Building Code and, specifically, that all electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities must be at or above the regulatory flood protection elevation or be designed to prevent flood water from entering or accumulating within these components during times of flooding.
 - (b) Specific Standards for Above-grade, Enclosed Areas - Above-grade, fully enclosed areas such as crawl spaces or tuck under garages must be designed to internally flood and the design plans must stipulate:
 - (1) The minimum area of openings in the walls where internal flooding is to be used as a floodproofing technique. There shall be a minimum of two openings on at least two sides of the structure and the bottom of all openings shall be no higher than one foot above grade. The automatic openings shall have a minimum net area of not less than one square inch for every square foot of enclosed area subject to flooding unless a registered professional engineer or architect certifies that a smaller net area would suffice. The automatic openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of flood waters without any form of human intervention; and
 - (2) That the enclosed area will be designed of flood resistant materials in accordance with the FP-3 or FP-4 classifications in the State Building Code and shall be used solely for building access, parking of vehicles or storage.

SECTION 6.0 GENERAL FLOODPLAIN DISTRICT (GF)

6.1 Permitted Uses:

- 6.11 The uses listed in Section 4.1 of this ordinance, Floodway District Permitted Uses, are permitted uses.
- 6.12 All other uses are subject to the floodway/flood fringe evaluation criteria specified in Section 6.2 below. Section 4.0 applies if the proposed use is determined to be in the Floodway District. Section 5.0 applies if the proposed use is determined to be in the Flood Fringe District.

6.2 Procedures for Floodway and Flood Fringe Determinations:

- 6.21 Upon receipt of an application for a permit or other approval within the General Floodplain District, the Zoning Administrator must obtain, review and reasonably utilize any regional flood elevation and floodway data available from a federal, state, or other source.
- 6.22 If regional flood elevation and floodway data are not readily available, the applicant must furnish additional information, as needed, to determine the regulatory flood protection elevation and whether the proposed use would fall within the Floodway or Flood Fringe District. Information must be consistent with accepted hydrological and hydraulic engineering standards and the standards in 6.23 below.
- 6.23 The determination of floodway and flood fringe must include the following components, as applicable:
 - (a) Estimate the peak discharge of the regional (1% chance) flood.
 - (b) Calculate the water surface profile of the regional flood based upon a hydraulic analysis of the stream channel and overbank areas.
 - (c) Compute the floodway necessary to convey or store the regional flood without increasing flood stages more than one-half (0.5) foot. A lesser stage increase than 0.5 foot is required if, as a result of the stage increase, increased flood damages would result. An equal degree of encroachment on both sides of the stream within the reach must be assumed in computing floodway boundaries.
- 6.24 The Zoning Administrator will review the submitted information and assess the technical evaluation and the recommended Floodway and/or Flood Fringe District boundary. The assessment must include the cumulative effects of previous floodway encroachments. The Zoning Administrator may seek technical assistance from a designated engineer or other expert person or agency, including the Department of Natural Resources. Based on this assessment, the Zoning Administrator may approve or deny the application.
- 6.25 Once the Floodway and Flood Fringe District boundaries have been determined, the Zoning Administrator must process the permit application consistent with the applicable provisions of Section 4.0 and 5.0 of this ordinance.

SECTION 7.0 LAND DEVELOPMENT STANDARDS

- 7.1 **In General:** Recognizing that flood prone areas may exist outside of the designated floodplain districts, the requirements of this section apply to all land within the City of St. Francis.
- 7.2 **Subdivisions:** No land may be subdivided which is unsuitable for reasons of flooding or inadequate drainage, water supply or sewage treatment facilities. Manufactured home parks and recreational vehicle parks or campgrounds are considered subdivisions under this ordinance.

- 7.21 All lots within the floodplain districts must be able to contain a building site outside of the Floodway District at or above the regulatory flood protection elevation.
- 7.22 All subdivisions must have road access both to the subdivision and to the individual building sites no lower than two feet below the regulatory flood protection elevation, unless a flood warning emergency plan for the safe evacuation of all vehicles and people during the regional (1% chance) flood has been approved by the City Council. The plan must be prepared by a registered engineer or other qualified individual, and must demonstrate that adequate time and personnel exist to carry out the evacuation.
- 7.23 For all subdivisions in the floodplain, the Floodway and Flood Fringe District boundaries, the regulatory flood protection elevation and the required elevation of all access roads must be clearly labeled on all required subdivision drawings and platting documents.
- 7.24 In the General Floodplain District, applicants must provide the information required in Section 6.2 of this ordinance to determine the regional flood elevation, the Floodway and Flood Fringe District boundaries and the regulatory flood protection elevation for the subdivision site.
- 7.25 If a subdivision proposal or other proposed new development is in a flood prone area, any such proposal must be reviewed to assure that:
 - (a) All such proposals are consistent with the need to minimize flood damage within the flood prone area,
 - (b) All public utilities and facilities, such as sewer, gas, electrical, and water systems are located and constructed to minimize or eliminate flood damage, and
 - (c) Adequate drainage is provided to reduce exposure of flood hazard.

7.3 Building Sites: If a proposed building site is in a flood prone area, all new construction and substantial improvements (including the placement of manufactured homes) must be:

- (a) Designed (or modified) and adequately anchored to prevent floatation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
- (b) Constructed with materials and utility equipment resistant to flood damage;
- (c) Constructed by methods and practices that minimize flood damage; and
- (d) Constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

SECTION 8.0 PUBLIC UTILITIES, RAILROADS, ROADS, AND BRIDGES

8.1 Public Utilities: All public utilities and facilities such as gas, electrical, sewer, and water supply systems to be located in the floodplain must be floodproofed in accordance with the State Building Code or elevated to the regulatory flood protection elevation.

8.2 Public Transportation Facilities: Railroad tracks, roads, and bridges to be located within the floodplain must comply with Sections 4.0 and 5.0 of this ordinance. These transportation facilities must be elevated to the regulatory flood protection elevation where failure or interruption of these facilities would result in danger to the public health or safety or where such facilities are essential to

the orderly functioning of the area. Minor or auxiliary roads or railroads may be constructed at a lower elevation where failure or interruption of transportation services would not endanger the public health or safety.

- 8.3 On-site Water Supply and Sewage Treatment Systems:** Where public utilities are not provided: 1) On-site water supply systems must be designed to minimize or eliminate infiltration of flood waters into the systems; and 2) New or replacement on-site sewage treatment systems must be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters and they must not be subject to impairment or contamination during times of flooding. Any sewage treatment system designed in accordance with the state's current statewide standards for on-site sewage treatment systems is considered to be in compliance with this Section.

SECTION 9.0 MANUFACTURED HOMES, MANUFACTURED HOME PARKS, AND RECREATIONAL VEHICLES.

- 9.1 Manufactured Homes:** New manufactured home parks and expansions to existing manufactured home parks are prohibited in any floodplain district. For existing manufactured home parks or lots of record, the following requirements apply:
- 9.11 Placement or replacement of manufactured home units is prohibited in the Floodway District.
 - 9.12 If allowed in the Flood Fringe District, placement or replacement of manufactured home units is subject to the requirements of Section 5 of this ordinance and the following standards.
 - (a) New and replacement manufactured homes must be elevated in compliance with Section 5 of this ordinance and must be securely anchored to an adequately anchored foundation system that resists flotation, collapse and lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state or local anchoring requirements for resisting wind forces.
 - (b) New or replacement manufactured homes in existing manufactured home parks must meet the vehicular access requirements for subdivisions in Section 7.22.
- 9.2 Recreational Vehicles:** New recreational vehicle parks or campgrounds and expansions to existing recreational vehicle parks or campgrounds are prohibited in any floodplain district. Placement of recreational vehicles in existing recreational vehicle parks or campgrounds in the floodplain must meet the exemption criteria below or be treated as new structures meeting the requirements of this ordinance.
- 9.21 Recreational vehicles are exempt from the provisions of this ordinance if they are placed in any of the following areas and meet the criteria listed in Section 9.22:
 - (a) Individual lots or parcels of record.
 - (b) Existing commercial recreational vehicle parks or campgrounds.
 - (c) Existing condominium-type associations.
 - 9.22 Criteria for Exempt Recreational Vehicles:
 - (a) The vehicle must have a current license required for highway use.
 - (b) The vehicle must be highway ready, meaning on wheels or the internal jacking system, attached to the site only by quick disconnect type utilities commonly used in campgrounds and recreational vehicle parks.

- (c) No permanent structural type additions may be attached to the vehicle.
 - (d) The vehicle and associated use must be permissible in any pre-existing, underlying zoning district.
 - (e) Accessory structures are not permitted within the Floodway District. Any accessory structure in the Flood Fringe District must be constructed of flood-resistant materials and be securely anchored, meeting the requirements applicable to manufactured homes in Section 9.22.
 - (f) An accessory structure must constitute a minimal investment
- 9.23 Recreational vehicles that are exempt in Section 9.22 lose this exemption when development occurs on the site that exceeds a minimal investment for an accessory structure such as a garage or storage building. The recreational vehicle and all accessory structures will then be treated as new structures subject to the elevation and floodproofing requirements of Section 5.0 of this ordinance. No development or improvement on the parcel or attachment to the recreational vehicle is allowed that would hinder the removal of the vehicle should flooding occur.

SECTION 10.0 ADMINISTRATION

10.1 Zoning Administrator: A Zoning Administrator or other official designated by the City Council must administer and enforce this ordinance.

10.2 Permit Requirements:

- 10.21 Permit Required. A permit must be obtained from the Zoning Administrator prior to conducting the following activities:
- (a) The erection, addition, modification, rehabilitation, or alteration of any building, structure, or portion thereof. Normal maintenance and repair also requires a permit if such work, separately or in conjunction with other planned work, constitutes a substantial improvement as defined in this ordinance.
 - (b) The use or change of use of a building, structure, or land.
 - (c) The construction of a dam, fence, or on-site septic system, although a permit is not required for a farm fence as defined in this ordinance.
 - (d) The change or extension of a nonconforming use.
 - (e) The repair of a structure that has been damaged by flood, fire, tornado, or any other source.
 - (f) The placement of fill, excavation of materials, or the storage of materials or equipment within the floodplain.
 - (g) Relocation or alteration of a watercourse - including new or replacement culverts and bridges), unless a public waters work permit has been applied for.
 - (h) Any other type of "development" as defined in this ordinance.
- 10.22 Application for Permit. Permit applications must be submitted to the Zoning Administrator on forms provided by the Zoning Administrator. The permit application must include the following as applicable:

- (a) A site plan showing all pertinent dimensions, existing or proposed buildings, structures, and significant natural features having an influence on the permit.
 - (b) Location of fill or storage of materials in relation to the stream channel.
 - (c) Copies of any required municipal, county, state or federal permits or approvals.
 - (d) Other relevant information requested by the Zoning Administrator as necessary to properly evaluate the permit application.
- 10.23 Certificate of Zoning Compliance for a New, Altered, or Nonconforming Use. No building, land or structure may be occupied or used in any manner until a certificate of zoning compliance has been issued by the Zoning Administrator stating that the use of the building or land conforms to the requirements of this ordinance.
- 10.24 Certification. The applicant is required to submit certification by a registered professional engineer, registered architect, or registered land surveyor that the finished fill and building elevations were accomplished in compliance with the provisions of this ordinance. Floodproofing measures must be certified by a registered professional engineer or registered architect.
- 10.25 Record of First Floor Elevation. The Zoning Administrator must maintain a record of the elevation of the lowest floor (including basement) of all new structures and alterations or additions to existing structures in the floodplain. The Zoning Administrator must also maintain a record of the elevation to which structures and alterations or additions to structures are floodproofed.
- 10.26 Notifications for Watercourse Alterations. Before authorizing any alteration or relocation of a river or stream, the Zoning Administrator must notify adjacent communities. If the applicant has applied for a permit to work in public waters pursuant to Minnesota Statutes, Section 103G.245, this will suffice as adequate notice. A copy of the notification must also be submitted to the Chicago Regional Office of the Federal Emergency Management Agency (FEMA).
- 10.27 Notification to FEMA When Physical Changes Increase or Decrease Base Flood Elevations. As soon as is practicable, but not later than six months after the date such supporting information becomes available, the Zoning Administrator must notify the Chicago Regional Office of FEMA of the changes by submitting a copy of the relevant technical or scientific data.

10.3 Variances:

- 10.31 Variance Applications. An application for a variance to the provisions of this ordinance will be processed and reviewed in accordance with applicable state statutes and **Chapter 8** of the City Code.
- 10.32 Adherence to State Floodplain Management Standards. A variance must not allow a use that is not allowed in that district, permit a lower degree of flood protection than the regulatory flood protection elevation for the particular area, or permit standards lower than those required by state law.
- 10.33 Additional Variance Criteria. The following additional variance criteria of the Federal Emergency Management Agency must be satisfied:
- (a) Variances must not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result.

- (b) Variances may only be issued by a community upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
 - (c) Variances may only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- 10.34 Flood Insurance Notice. The Zoning Administrator must notify the applicant for a variance that: 1) The issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage; and 2) Such construction below the base or regional flood level increases risks to life and property. Such notification must be maintained with a record of all variance actions.
- 10.35 General Considerations. The community may consider the following factors in granting variances and imposing conditions on variances and conditional uses in floodplains:
- (a) The potential danger to life and property due to increased flood heights or velocities caused by encroachments;
 - (b) The danger that materials may be swept onto other lands or downstream to the injury of others;
 - (c) The proposed water supply and sanitation systems, if any, and the ability of these systems to minimize the potential for disease, contamination and unsanitary conditions;
 - (d) The susceptibility of any proposed use and its contents to flood damage and the effect of such damage on the individual owner;
 - (e) The importance of the services to be provided by the proposed use to the community;
 - (f) The requirements of the facility for a waterfront location;
 - (g) The availability of viable alternative locations for the proposed use that are not subject to flooding;
 - (h) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future;
 - (i) The relationship of the proposed use to the Comprehensive Land Use Plan and flood plain management program for the area;
 - (j) The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (k) The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters expected at the site.
- 10.36 Submittal of Hearing Notices to the Department of Natural Resources (DNR). The Zoning Administrator must submit hearing notices for proposed variances to the DNR sufficiently in advance to provide at least ten days' notice of the hearing. The notice may be sent by electronic mail or U.S. Mail to the respective DNR area hydrologist.

10.37 Submittal of Final Decisions to the DNR. A copy of all decisions granting variances must be forwarded to the DNR within ten days of such action. The notice may be sent by electronic mail or U.S. Mail to the respective DNR area hydrologist.

10.38 Record-Keeping. The Zoning Administrator must maintain a record of all variance actions, including justification for their issuance, and must report such variances in an annual or biennial report to the Administrator of the National Flood Insurance Program, when requested by the Federal Emergency Management Agency.

10.4 Conditional Uses:

10.41 Administrative Review. An application for a conditional use permit under the provisions of this ordinance will be processed and reviewed in accordance with **Chapter 6** of the City Code.

10.42 Factors Used in Decision-Making. In passing upon conditional use applications, the City Council must consider all relevant factors specified in other sections of this ordinance, and those factors identified in Section 10.35 of this ordinance.

10.43 Conditions Attached to Conditional Use Permits. The City Council may attach such conditions to the granting of conditional use permits as it deems necessary to fulfill the purposes of this ordinance. Such conditions may include, but are not limited to, the following:

- (a) Modification of waste treatment and water supply facilities.
- (b) Limitations on period of use, occupancy, and operation.
- (c) Imposition of operational controls, sureties, and deed restrictions.
- (d) Requirements for construction of channel modifications, compensatory storage, dikes, levees, and other protective measures.
- (e) Floodproofing measures, in accordance with the State Building Code and this ordinance. The applicant must submit a plan or document certified by a registered professional engineer or architect that the floodproofing measures are consistent with the regulatory flood protection elevation and associated flood factors for the particular area.

10.44 Submittal of Hearing Notices to the Department of Natural Resources (DNR). The Zoning Administrator must submit hearing notices for proposed conditional uses to the DNR sufficiently in advance to provide at least ten days' notice of the hearing. The notice may be sent by electronic mail or U.S. Mail to the respective DNR area hydrologist.

10.45 Submittal of Final Decisions to the DNR. A copy of all decisions granting conditional uses must be forwarded to the DNR within ten days of such action. The notice may be sent by electronic mail or U.S. Mail to the respective DNR area hydrologist.

SECTION 11.0 NONCONFORMITIES

11.1 Continuance of Nonconformities: A use, structure, or occupancy of land which was lawful before the passage or amendment of this ordinance but which is not in conformity with the provisions of this ordinance may be continued subject to the following conditions. Historic structures, as defined in Section 2.939(b) of this ordinance, are subject to the provisions of Sections 11.11 – 11.16 of this ordinance.

11.11 A nonconforming use, structure, or occupancy must not be expanded, changed, enlarged, or altered in a way that increases its flood damage potential or degree of obstruction to flood flows except as provided in 11.12 below. Expansion or enlargement of uses, structures or occupancies within the Floodway District is prohibited.

- 11.12 Any addition or structural alteration to a nonconforming structure or nonconforming use that would result in increasing its flood damage potential must be protected to the regulatory flood protection elevation in accordance with any of the elevation on fill or floodproofing techniques (i.e., FP-1 thru FP-4 floodproofing classifications) allowable in the State Building Code, except as further restricted in 11.13 and 11.17 below.
- 11.13 If the cost of all previous and proposed alterations and additions exceeds 50 percent of the market value of any nonconforming structure, then the entire structure must meet the standards of Section 4.0 or 5.0 of this ordinance for new structures depending upon whether the structure is in the Floodway or Flood Fringe District, respectively. The cost of all structural alterations and additions must include all costs such as construction materials and a reasonable cost placed on all manpower or labor.
- 11.14 If any nonconforming use, or any use of a nonconforming structure, is discontinued for more than one year, any future use of the premises must conform to this ordinance. The Assessor must notify the Zoning Administrator in writing of instances of nonconformities that have been discontinued for a period of more than one year.
- 11.15 If any nonconformity is substantially damaged, as defined in Section 2.938 of this ordinance, it may not be reconstructed except in conformity with the provisions of this ordinance. The applicable provisions for establishing new uses or new structures in Sections 4.0 or 5.0 will apply depending upon whether the use or structure is in the Floodway or Flood Fringe, respectively.
- 11.16 If any nonconforming use or structure experiences a repetitive loss, as defined in Section 2.935 of this ordinance, it must not be reconstructed except in conformity with the provisions of this ordinance.
- 11.17 Any substantial improvement, as defined in Section 2.939 of this ordinance, to a nonconforming structure requires that the existing structure and any additions must meet the requirements of Section 4.0 or 5.0 of this ordinance for new structures, depending upon whether the structure is in the Floodway or Flood Fringe District.

SECTION 12.0 PENALTIES AND ENFORCEMENT

- 12.1 **Violation Constitutes a Misdemeanor:** Violation of the provisions of this ordinance or failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with grants of variances or conditional uses) constitute a misdemeanor and will be punishable as defined by law.
- 12.2 **Other Lawful Action:** Nothing in this ordinance restricts the City from taking such other lawful action as is necessary to prevent or remedy any violation. If the responsible party does not appropriately respond to the Zoning Administrator within the specified period of time, each additional day that lapses will constitute an additional violation of this ordinance and will be prosecuted accordingly.
- 12.3 **Enforcement:** In responding to a suspected ordinance violation, the Zoning Administrator and City Council may utilize the full array of enforcement actions available to it including but not limited to prosecution and fines, injunctions, after-the-fact permits, orders for corrective measures or a request to the National Flood Insurance Program for denial of flood insurance availability to the guilty party. The City must act in good faith to enforce these official controls and to correct ordinance violations to the extent possible so as not to jeopardize its eligibility in the National Flood Insurance Program.

- 12.31 When a violation is either discovered by or brought to the attention of the Zoning Administrator, the Zoning Administrator shall immediately investigate the situation and document the nature and extent of the violation of the official control. As soon as it is reasonably possible, this information will be submitted to the appropriate State Department of Natural Resources and Federal Emergency Management Agency regional office along with the city's plan of action to correct the violation to the degree possible.
- 12.32 The Zoning Administrator shall notify the suspected party of the requirements of this chapter and all other official controls and the nature and extent of the suspected violation of these controls. If the structure and/or use is under construction or development, the Zoning Administrator may order the construction or development immediately halted until a proper permit or approval is granted by the city. If the construction or development is already completed, the Zoning Administrator may either: 1) issue an order identifying the corrective actions that must be made within a specified time period to bring the use or structure into compliance with the official controls; or 2) notify the responsible party to apply for an after the fact permit/development approval within a specified period of time not to exceed 30 days.

SECTION 13.0 AMENDMENTS

- 13.1 **Floodplain Designation – Restrictions on Removal:** The floodplain designation on the Official Zoning Map must not be removed from floodplain areas unless it can be shown that the designation is in error or that the area has been filled to or above the elevation of the regulatory flood protection elevation and is contiguous to lands outside the floodplain. Special exceptions to this rule may be permitted by the Commissioner of the Department of Natural Resources (DNR) if the Commissioner determines that, through other measures, lands are adequately protected for the intended use.
- 13.2 **Amendments Require DNR Approval:** All amendments to this ordinance must be submitted to and approved by the Commissioner of the Department of Natural Resources (DNR) prior to adoption. The Commissioner must approve the amendment prior to community approval.
- 13.3 **Map Revisions Require Ordinance Amendments.** The floodplain district regulations must be amended to incorporate any revisions by the Federal Emergency Management Agency to the floodplain maps adopted in Section 2.3 of this ordinance.

EFFECTIVE DATE: This ordinance shall be in full force and effect from and after its passage and approval and publication, as required by law and/or charter.

Adopted by the _____ City Council
(Community Name)

This _____ of _____, _____
(Day) (Month) (Year)

Attest: _____, Mayor
(Name of Elected Official)

Attest: _____, County Administrator/City Clerk
(Name of Community Official)

Stamp With Community Seal: