

FIRE SPRINKLER TIMES

The Wisconsin Chapter of the NFSA

Summer 2002 Edition



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The developer can reduce his land-development costs; the builder can reduce his construction costs; and the buyer has increased life and property protection at a lower cost.

Fire Sprinkler Trade-Ups Offer Advantages to Developers, Homeowners and Communities

Excerpts from the NFSA Fire Sprinkler Guide 2000 Edition

Fire sprinkler advantages are, in reality, construction design options permitted when fire sprinklers are provided in the building. These advantages have been referred to as trade-ups, design options and other miscellaneous terms, which sometimes create an illusion of giving up the requirement for something less effective. In all cases, sprinkler advantages provide increased fire safety over the protection that was provided originally in the code.

By implementing trade-ups and design options with automatic fire sprinkler protection, fire safety can be increased and municipal operating costs can be controlled while providing economic and design incentives to developers to lower construction costs.

The best time to promote the trade-up concept for subdivision development savings is prior to submitting subdivision plans. Local authorities should review and modify all overly restrictive development and construction requirements to make sprinkler protection economically feasible. When proper subdivision and development options are provided, development cost can be reduced. The possibility of lower-cost lots can encourage fire sprinkler installations. Sprinklered developments give an excellent opportunity to provide increased fire safety without burdening the municipality with ever-increasing expenses in fire department staffing.

Fire sprinkler advantages provided by the building code should be applied in the original design. Trying

to apply the advantages following final plan preparation usually results in increased architectural fees and may not provide the overall design advantages and savings in construction costs.



Automatic fire sprinklers help lower development costs, resulting in lower selling prices per unit.

The cost of developing raw land into an approved building site presents a number of options for developments protected by automatic fire sprinklers. These options are only applicable if all the buildings in the development will have built-in automatic fire protection. These options include:

Street Width Reduction: Street widths may be reduced. Quick access to the building by larger pieces of fire equipment is unnecessary so traffic lanes may be reduced from eleven feet to nine feet, a savings of at least four sq. ft. of pavement of every linear foot of street in the development.

Longer Dead-End Streets: Dead-end streets may increase in length from 200 to 500 ft. Additional building lots may be accessed.

Tee Turnarounds Permitted: 80 to 100-foot diameter cul-de-sacs are normally required to permit rapid turnarounds of

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How Fire Sprinklers Impact Your Entire Community

By Tom Lia, Executive Director, Northern Illinois Fire Sprinkler Advisory Board (NIFSAB)

As a Trustee, Alderman, Village Manager or City Mayor/Village President, when did you last look, in depth, at your town's fire safety? When was the last time you upgraded or changed your fire and building code? As a committee or as per the full Board, have you taken a close look at the need to upgrade the code? If not, maybe your next stop should be a visit with your Fire Chief.

While it may not be your legal responsibility to do so, it is a moral responsibility to verify if your Fire and Building Codes are taking advantage of the latest technology allowed in the National Standards. After you meet with your Fire Chief, stop in and visit your Building Department Director.

Fire sprinklers have received national recognition from various governmental agencies and Fire and Health Standards Associations. Last year the U.S. Fire Administration (USFA) and Federal Emergency Management Association (FEMA) distributed the "America Burning Revisited" Report. The Report called for fire sprinklers to be installed wherever and whenever possible as part of a community approach to fire safety. This was the #2 finding out of 83 findings. The #1 finding stated that, since the original 1967 report under President Nixon, the United States still has the most fires per capita of all industrialized nations.

The American Public Health Association (APHA) urged the International Code Council (ICC) and National Fire Protection Agency (NFPA) to "develop codes and standards requiring fire sprinkler protection that is cost-effective for new homes and other buildings."

This is a remarkable benefit to a community! Since a fire is extinguished or controlled in the incipient stage, there is recognition from the National Code experts that massive fire walls, ceilings and fire doors can be reduced from 4 hour ratings to half that amount. (A complete listing is available upon request.) In order to take advantage of these fire sprinkler trade-ups, over 102 communities in the Chicagoland area alone have reduced their minimum square footage below the BOCA Standard, or eliminated it

completely, so that all new construction requires fire sprinklers.

Installing fire sprinkler systems in entire developments during the planning stage can result in reduced water main pipes. (If you have sprinklers, fires are put out or controlled before large-scale fire attachments are necessary.) Chief Ronnie Coleman from California developed a detailed study of these trade-ups in new developments. The Insurance Services Officers (ISO), who rate your town's overall fire defense, has fire sprinklers calculated into their formulas. Its basis is that, if a building is not sprinklered, it will need a certain amount of water to put the fire out. You will need this water to be capable of lasting 4 hours. Every building is evaluated and every building has this water flow requirement added to each other. This is the demand that the water department must supply or be capable of storing and supplying. You are given credit points if you can meet their capacity.

Insurance companies, such as State Farm, All State, Prudential and Kemper, offer discounts between 5 and 20 percent to homeowners who have fire sprinkler systems. In a commercial building the savings are so great that you can pay for the cost of the installation itself in 9-10 years!

The savings to business owners, citizens and firefighters should be considered as you research this code upgrade effort. A business without sprinklers may be closed for a long

The Building Officials and Code Administrator (BOCA) 1999 Code and the International Building Code 2000 feature over 100 fire sprinkler code trade-ups to builders and developers when they install fire sprinklers in buildings.

time or never reopen after a fire. A fire in a sprinklered building results in a minor cleanup and sprinkler-head replacement and you are back in business or in your home. In the Pleasantview (IL) Fire Protection District, where they have a 2,000-square-foot threshold, they have documented over 33 fire-sprinkler saves over the last 10 years! ■

September 15, 2001

Department of Defense News Briefing on Pentagon Renovation

Fire Sprinklers Limit Loss at Pentagon Following Terrorist Attack

"There was a fire that raged through wedge two, the unrenovated area. If you look at wedge one, except in those areas where it was clearly fueled by jet fuel, the fire, when it tried to spread into other wedge one areas, was knocked down immediately by the fire sprinklers. There was virtually no spread whatsoever, so we saw a tremendous beneficial effect from that."

— Lee Evey, Pentagon Renovation Manager

Untested Systems Put Lives and Property at Risk

By Rich Ray, P.E., National Fire Sprinkler Association

The importance of a properly maintained fire sprinkler system cannot be overstated. Just scan the evening news or daily paper and you'll be reminded of the potential threat to life and property that fire represents. Simply installing a sprinkler system is not enough to overcome that threat; the system must be maintained on a regular schedule by a qualified contractor. That's the only way to ensure its dependability in the event of a fire. And it is one of the reasons sprinkler system maintenance has become a critical issue among Fire Marshals and insurance carriers across the country. Both are stepping up inspections and requiring building owners to adhere closely to recommended maintenance programs.

Different Systems, Different Maintenance Needs

There are a variety of fire sprinkler systems, including wet pipe, dry pipe, deluge, preaction, combined dry pipe-preaction, foam and foam-water. Maintenance is different with each type of system. Each system has its own unique components, so their inspection and testing schedules vary greatly, ranging from weekly, monthly, quarterly and yearly. Some of these tests can be completed by your own maintenance crew (see sidebar on page 6), but most require the services of a qualified sprinkler contractor so that they are performed in accordance with generally accepted industry practices and manufacturer's guidelines.

The following are just a few of those procedures:

- Verify deflector distances of sprinkler heads.
- Test system alarms.
- Confirm main drain flow tests.
- Check fire pumps.
- Test antifreeze systems and solutions.
- Trip test dry pipe valves/quick opening devices.
- Examine priming water levels.
- Conduct internal pipe inspection on dry systems.
- Conduct hydro-pneumatic flushing, if necessary.

Cold Weather Maintenance

Freezing weather conditions can wreak havoc on a fire sprinkler system. But a properly designed, installed, tested and maintained system should be a functioning system in any climate. Fire sprinkler systems freeze faster than plumbing pipe because the water does not flow unless there's a fire. Low points in a dry pipe sprinkler system, where condensation can collect, are susceptible to freezing, as are the smaller pipe diameters, such as one- to two-inch pipes, in a wet pipe sprinkler system.

The most important step in maintaining a sprinkler system during the winter months is also the simplest: keep the heat on. National building

"The responsibility for properly maintaining a water-based fire protection system shall be the obligation of the owners of the property. By means of periodic inspections, tests and maintenance, the equipment shall be shown to be in good operation condition or any defects or impairments shall be revealed."

— NFPA 25 Standard for Inspection, Testing and Maintenance

codes recommend that a sprinklered room be maintained at 40 degrees Fahrenheit or warmer to avoid freeze-ups. Go below that and you're flirting with disaster.

Without heat, any sprinkler system can freeze. A cold snap comes through and the water in the piping network will freeze. This expands the pipe and places pressure on the fittings until they break. The damage only becomes apparent after the building's heat is turned back on. As the ice in the pipes begins to thaw, water from the broken fittings can leak. Office furniture, computers, carpeting, storage and anything else in the water's path gets soaked.

It's not unusual for a company to rack up tens of thousands of dollars in damages from a sprinkler freeze. Moreover, as long as a sprinkler system is damaged, its ability to fight fire is greatly compromised, so the building itself is left open to catastrophe.

Most sprinkler systems employ steel pipe with cast iron fittings. Freezing can shatter the cast iron fittings and even "pop" the sprinkler head itself. Plastic pipe turns brittle in cold weather, so entire lengths can shatter if the water inside freezes.

Cold Weather Protection Tips

Protective measures for sprinkler system piping exposed to brief periods of freezing are not the same steps recommended for all standard water pipes. Fire sprinkler pipes cannot be insulated or heat taped. If you have concerns about the possibility of your sprinkler system failing, call your contractor and get professional advice.

For extended exposure to cold, it's better to specify a sprinkler system that can withstand the elements. Here your design options include dry pipe valves and preaction systems which may prevent accidental water discharge into the pipes. Antifreeze loops are a simple solution for small unheated areas.

Building Changes Impact Sprinkler Performance

Be aware that changes to your building may alter the performance of an existing fire protection system, again threatening the system's operation. These may include:

Changes in occupancy, such as revising office or production space to warehousing; or changing a process or material, such as going from metal stamping to molded plastics.

Building revisions, such as relocated walls, added mezzanines and ceilings dropped below sprinklers, or the removal of heating systems in spaces with sprinkler piping, can impact the sprinkler system's ability to control or suppress a fire.

Any of these may adversely affect the original operating design of the fire sprinkler system, possibly rendering it inoperable in the event of a fire. To avoid these problems, plus an assortment of costly code violations, have a sprinkler contractor do a walk-through of your building at the blueprint stage of the revisions, thus allowing you time to incorporate the suggestions before the work is begun. ■



Residential Fire Sprinkler Ordinances Off to a Slow Start in Wisconsin

The State of California has more than 200 communities that have legislated residential fire sprinkler ordinances. Forty Florida communities have also adopted ordinances. Scottsdale, Arizona has a fifteen-year ordinance that has documented 199 fires where sprinklers activated with impressive success. Prince George County, Maryland has had an ordinance for twenty-plus years and recently created a tax incentive for homeowners. The ordinance states that in the first year of occupancy, a deduction on real estate taxes can be made to reach as much as fifty percent of the real estate tax liability but not to exceed the cost of the installed fire sprinkler system. Many other communities across the country have adopted ordinances. The State of Wisconsin has none.

The National Fire Sprinkler Association is presently working with several Wisconsin communities to enhance their fire sprinkler requirements. Yet just a few are actively considering residential fire sprinkler legislation. With more than eighty percent of the fire fatalities occurring in the home, it is strange that the residential concept hasn't gotten underway. SAFE USA, an organization made up of safety advocates primarily from organizations representing those at highest risk of dying in fire such as children, older adults and people with disabilities, has stated in a recent report that all new housing starts by the year 2020 should have fire sprinkler protection.

The Wisconsin Chapter of NFSA has resources to help educate municipal leaders and elected officials. For more information use the form on the back of this newsletter or contact Dan Gengler (262) 245-5255 or DanNFSA@aol.com.

Newspapers in Education

The fifth edition of the *Wisconsin Alliance for Fire Safety Newspapers in Education Fire Safety Program* is scheduled to be distributed October 8, 2002. Each year the project has been enhanced. The Alliance has worked side-by-side with the *Milwaukee Journal Sentinel* to create a fire safety program that is read and taken home by more than 200,000 fourth, fifth and some six graders in Wisconsin's parochial, private and public schools. The nationally recognized program has become a benchmark for fire safety outreach education. The strategy is to augment fire safety education provided by local fire departments, another resource to help.

The intent of the 16-page curriculum is to help children understand how to use the newspaper while learning about fire safety issues. Fire/burn prevention education highlights the agenda with specific topics getting linked to science, math and history. Children get acquainted with the chemistry of fire, electrical safety, smoke alarms, automatic fire sprinklers, carbon monoxide poisoning and burn safety, just to name a few. They are given several assignments to help them understand the importance of fire safety every day of the year. A walk-through of the home with the entire family is one exercise that will help identify potential fire hazards and get all included in planning exit drills for the home.

Fire officials are encouraged to work with their schools, specifically fourth and fifth grade teachers, to prepare for the delivery.

This year the program is being enhanced with TV exposure. WISN-TV Channel 12 will produce a half-hour fire safety program that will run prime time the week before the NIE delivery. The program will include 30-second commercials that are fire safety oriented. The same fire safety messages will be played, according to sponsorship support, more than forty times during the month of October.

The Wisconsin Chapter of the NFSA has been a sponsor and contributor to the program since its inception. Working on the global fire safety issues of the topic, fire sprinkler protection in the equation offers the best opportunity for life and property preservation. For information on the program, contact the WAFS at: (262) 245-5315 or email at: info@wafs.org.

Firsthand Challenge

Recently, my wife and I bought a town home in Williams Bay. We purchased it when the electric and gas were being installed, the right time to install a fire sprinkler system, before the walls were installed. We soon discovered that the builder intentionally didn't put a full basement in the unit to avoid having to install fire sprinklers.

After a few delays, our sprinkler installation became a retrofit job. In just a few days, using sidewall mounted sprinklers, our 1,400 square foot home was protected. Ironically, our installation turned out to be a positive experience for our builder. Witnessing the installation of our sprinkler system dispelled some of the myths. Installation has become simplified with the use of CPVC pipe. Automatic residential sprinklers are unobtrusive. Each sprinkler can cover an area of 12 x 12 feet, so most rooms are protected by a single sprinkler.

We may have been inconvenienced by having to retrofit our system versus installing the system before the walls went up. In the end, another builder has a new perspective and understanding of the values of fire sprinkler protection.

Fire Sprinklers at Work: SUCCESSFUL ACTIVATIONS

FEBRUARY 2002:

Warehouse and Manufacturing Plant

Portage

Thirty-nine sprinklers activated to control what could have been a potentially devastating fire in a high pile foam warehouse and manufacturing plant. Foam car seating and foam backing for carpeting are manufactured at the plant. A contractor using a torch failed to protect the entire work area and ignited the nearby foam. The fire was controlled prior to the arrival of the Portage Fire Department. The company was back to full operation in less than 48 hours. The building and contents would have burned for days if the building was not protected with a competently designed system.

APRIL 2002:

Holiday Inn

Downtown Milwaukee

A fire at the Holiday Inn in downtown Milwaukee could have dampened a festive wedding party but was quenched by three sprinklers. First arriving companies found smoke on the 6th, 7th & 8th floors of the hotel. While investigating, fire fighters found that a single sprinkler in the electrical service rooms, on each floor, had extinguished the electrical fires. Battalion Chief Donn Preston said that a major catastrophe was avoided by the activation. A wedding party of hundreds was slightly inconvenienced by the event and the hotel occupants were able to "rest assured" that sprinklers were in waiting for their safety.

MAY 2002:

Off-Campus Housing

Madison

At 12:30 a.m., a single sprinkler extinguished a fire that started in a bedroom of a 6-story off-campus housing complex. The occupant left the apartment with a candle burning on a wooden telephone stand.

According to Madison Fire Marshal Ed Ruckreige, the fire department responded after the sprinkler set off the alarm. "Without fire sprinkler protection, the fire would have spread. Especially considering the time of the fire, the life safety of the other occupants in the building would have been significantly jeopardized," Ruckreige said.

When the Media Fails

"Sprinklers failed in fire." That headline scathed the top of the *Wausau Daily Herald* after an old manufacturing firm and warehouse burned to the ground. Ironically, the fire occurred one week after the Portage manufacturing plant fire.

The story ran in the local section of the paper and was quite different in context. It appears that the system had been shut down nearly two years earlier and the dry system was partially dismantled. The building didn't have sprinkler protection.

Subsequent contacts by NFSA's Dan Gengler, the local Tech College and a local contractor resulted in three clarification pieces to educate the editor and the paper's readership. ■

Increase awareness about the life- and property-saving benefits of fire sprinklers in your community.


Report successful activations to your local media.

Send your "Successful Activation" stories to NFSA WI Chapter and we'll list them in our newsletter and website, www.NFSAWI.org.

Send your stories to:
Dan Gengler
NFSA WI Chapter
PO Box 280
Williams Bay, WI 53191

Fax: (262) 245-5258
Email: DanNFSA@aol.com

Journal RADIO NETWORKS

The Brewers Radio Network 

Fire Sprinklers a Hit with Brewer Baseball

To promote the life and property saving benefits of fire sprinklers, the NFSA Wisconsin Chapter is sponsoring a radio campaign during the Brewer Season on WTMJ Radio. Four 30-second messages are being aired during the pre-game show before every Brewer night game and every Cub game.

The four radio ads focus on different issues: the first dispels the myth that the entire sprinkler system is activated when there is a fire. The second spot address campus housing safety and reminds parents to ask the college about fire sprinkler protection. The third ad informs people living in high-rise buildings that they never know how safety conscious their neighbors are and fire sprinklers offer the best protection. The final ad informs people who plan to build new homes that fire sprinklers are a life-saving option.

Tune-in to the Brewer pre-game show on WTMJ 620AM to hear these important messages. ■

Galbraith New Chapter Director

Following a 42-year career with the sprinkler industry, Jim Galbraith has joined the NFSA Wisconsin Chapter as the new director.

"After spending my entire career with Grinnell, it only seemed natural to work with the NFSA," Galbraith said.

Galbraith began his career as a sprinkler fitter. During his apprenticeship, he represented Wisconsin at the International Apprenticeship Contest. His other positions included job installation foreman, six years in engineering and 29 years in sales, including nine years as regional sales manager. He retired five years as Wisconsin manager.

In his new role, Galbraith will act as a liaison between the sprinkler industry and fire service, be a resource for fire service questions both technical and mechanical, attend state code meetings and local ordinance meetings and help promote the life- and property-saving benefits of fire sprinklers through safety fairs, public relations and community events.

"I've already attended quite a few meetings with fire department inspection people and I'm hearing quite a few interesting questions from the group," Galbraith said. "I'm very excited about this opportunity." ■

NFSAWI.org and 2002 Directory Now Available

NFSA Wisconsin Chapter has developed a website to provide visitors with information and resources specifically for the local area. The website includes NFSA contact information, a list of contractors and vendors from the directory and links to important sites.



According to Dan Gengler, NFSA Regional Manager, the website will provide important information and updates specifically about the Milwaukee area and the state of Wisconsin. "Our goal is to provide members of the fire service, the public and members of the industry with important information," Gengler said.

NFSA Wisconsin Chapter has also updated its 2002 Directory. It includes a list of contractors, vendors and Chapter Officials. ■

Fire Sprinkler Trade-Ups

continued from page 1

larger fire vehicles in developments. The permitted use of tee turnarounds in sprinklered developments can create at least one additional lot per cul-de-sac.

Increased Street Grades and Building Setbacks Permitted: Street grades over 15 degrees and building locations more than 250 feet from paved fire vehicles access may be permitted. This can increase the flexibility in land use and be extremely beneficial in residential subdivisions constructed in hilly terrain.

Additional Units Permitted: Although the actual percentage may vary, increases of up to 20 percent are not uncommon. The additional units spread the development cost over more units and reduce the cost per unit. This can mean substantial savings to the developer in reducing both the up-front costs, as well as the interest charges. Lower development costs per unit should mean lower selling prices per unit.

Expansion of Existing Water Supply May Not Be Needed: Required fire flows for fully sprinklered developments can be reduced by as much as 75 percent compared to non-sprinklered developments. This reduction could determine whether expensive upgrading of the existing water supply system would be required. Reductions are based on the size of the buildings and the type of construction used.

Increased Hydrant Spacing: Reduced fire flows also permit the use of smaller water supply mains and permit increased fire hydrant spacing. Supply mains may be reduced as much as two inches while hydrant spacing can increase from 250 feet to 1,000 feet. Smaller mains and fewer hydrants mean lower development costs.

Reductions in Water Connection Fees: Reductions through negotiation can result in lower tap fees or standby charges. Fire departments use far less water in developments with sprinklered buildings. Unrealistic tap fees and standby charges for fire sprinklered buildings must be eliminated wherever they occur. These charges

have been used as a means to raise revenue without raising rates. Building owners should not be charged additional fees for providing a fire sprinkler system when they are also paying for the main and fire hydrants at the street.

New Fire Stations: When entire developments have sprinkler protection, developer contributions for the construction of a new fire station may be reduced or eliminated.

Decreased Death Rates and Property Loss: Over time, communities with fully sprinklered developments should see a decrease in fire death rates and property loss.

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**“Most important,
not a single person
has died in homes
with fire sprinklers.”**
.....

Scottsdale, Arizona has had an ordinance requiring fire sprinkler installation in all new construction for over 15 years. Today, more than half the homes in Scottsdale are protected by sprinklers. In addition to the benefits described above, a detailed history of the effects of the automatic sprinkler code in Scottsdale shows a significant difference in fire loss and water damage following fires that occurred in homes with fire sprinklers compared to homes without sprinkler protection. Most important, not a single person has died in homes with fire sprinklers.

Requiring all new construction to have fire sprinkler systems is a win-win decision. The community has additional fire protection without either higher taxes or increased insurance rates. The developer can reduce his land development costs. The builder can reduce his construction costs. And the buyer will have increased life and property protection at a lower cost. ■

14th Annual Burn Center Golf Invitational Marks A Million

The 14th Annual Burn Center Golf Invitational will be held August 26, 2002, at the Grand Geneva Resort & Spa in Lake Geneva. With last year's event bringing the 13 year total to \$923,000, this year's event is expected to reach the million-dollar mark.

Once again, as in the past ten years, the invitational will be played on the beautiful and challenging Brute and Highland Courses of the Grand Geneva Resort & Spa in Lake Geneva. Sponsored by the Midwest Sprinkler Industries and the Milwaukee Fire Department and presented by the Wisconsin Alliance for Fire Safety (WAFS), the gathering also offers a gracious dinner with live and silent auctions to highlight the festivities.

Profits are forwarded to **St. Mary's Regional Burn Center** and the **WAFS Camp for Burn Injured Youths**. Some monies are dedicated for the annual WAFS Newspapers in Education Program and the St. Mary's Burn Prevention Educational Program. ■

For information contact:

Dan Gengler: (262) 245-5255 or
Co-Chair Kay Luedke, U.S. Fire
Protection: (414) 782-3311





The Wisconsin Chapter of
**THE NATIONAL
 FIRE SPRINKLER
 ASSOCIATION, INC.**

PO Box 280
 Williams Bay, WI 53191

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For more information about fire sprinklers, contact Dan Gengler, National Fire Sprinkler Association, (262) 245-5255
 You can also contact Dan via e-mail: DanNFSA@aol.com



NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____

E-MAIL _____

If you don't have access to a FAX, return form to:

**The Wisconsin Chapter of
 THE NATIONAL
 FIRE SPRINKLER
 ASSOCIATION, INC.**

Mr. Dan Gengler
 PO Box 280
 Williams Bay, WI 53191

(262) 245-5255
DanNFSA@aol.com



PLEASE SEND ME THE FOLLOWING INFORMATION:

- Subdivision Fire Sprinkler Tradeoffs
 (Ronnie Coleman California Report)
- Fire Sprinkler Guide 2000,
 BOCA Code 1999 Fire Code and
 IBC Building Code,
 2000 Sprinkler Tradeoff
- NFPA 1710 Sprinkler Exception
- America Burning Revisited Report 2001
- "Building For Life" Brochure

*Developed by the Home Fire Sprinkler Coalition, explains
 trade-up benefits builders can experience when including
 fire sprinklers in entire developments*

This form can be faxed to: **(262) 245-5258**