

# Volume IX – Summer 2012



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### Staff

FRANK DUNMIRE Executive Director dunmire@ilrwa.org • 217-820-4626

DON CRAIG Deputy Director craig@ilrwa.org • 217-561-1061

HEATHER McLEOD Membership Services Assistant ilrwahm@ilrwa.org

**D**ENISE **B**URKE Administrative/Program Assistant ilrwadb@ilrwa.org

WAYNE NELSON EPA Training Specialist ilrwawn@ilrwa.org • 217-820-1561

GALE MOORE Circuit Rider moore@ilrwa.org • 217-820-4754

PAT GAMMILL Circuit Rider gam@ilrwa.org • 217-820-1564

CHUCK WOODWORTH Circuit Rider ilrwacw@ilrwa.org • 217-820-1569

JOHN BELL Wastewater Technician ilrwajb@ilrwa.org • 217-820-1568

BILL DOWELL Wastewater Technician dowell@ilrwa.org • 217-820-1562

MARK MITCHELL USDA Source Water Specialist Mitchell@ilrwa.org • 217-820-1565

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#### MISSION STATEMENT

"Protecting and preserving the water and wastewater resources of Rural Illinois through education, representation and on-site technical assistance".

#### On the Cover: Pictured is the bridge on Route 161 between Centralia and West Salem, taken by Pat Gammil, IRWA Circuit Rider.

Water Ways is the official publication of the Illinois Rural Water Association, P.O. Box 49, Taylorville, Illinois 62568, and is published quarterly for distribution to members as well as other industry associations and friends. Our website is www.ilrwa.org. Articles and photographs are encouraged. Advertising and submissions should be mailed to the above address or e-mail us at ilrwadb@ilrwa.org.



Volume IX-Summer 2012

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### **Growing Pains**

For this edition of the Water Ways magazine I thought I would share with you the growing pains that rural water systems throughout Illinois, as well as the nation, experience at some point in time. As most of you know I manage the operations for Jersey County Rural Water Company, a not-for-profit water supplier, out of our office located in Jerseyville,

DOGS

Illinois. Our original water system was constructed back in the early to mid 70's and consisted of six underground pumping stations along with six water standpipes and a maze of 3 and 4 inch PVC watermains. Then along came the 1980's and 1990's and their rapid growth. It did not take long for this growth to tax our water system and it was quickly



determined that some of our smaller diameter mains would need to be upgraded to a larger size – especially those that fed water to the storage tanks. Our system had finally grown to the point where it was time for the Board of Directors

### by Greg Bates, IRWA Board President



to make some tough decisions on how to best handle the growth and where to find funding for the improvements needed to supply our customers with a safe and reliable source of water.

A multifaceted plan was agreed upon and first on the list was to raise tap-on fees for new meter installations to *continued on page 5* 

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### continued from page 4

### **Growing Pains**

help raise the needed capital to finance two new elevated water towers. One 200,000 gallon and one 400,000 gallon water tower was erected to handle our water storage short-fall. Ten-year bonds were sold to cover the cost of these two new water towers and the 8-inch PVC mains required to feed them. With the addition of these two elevated tanks two of the old standpipes were taken out of service. Unlike the standpipes, these new towers were much larger with almost all of the water approximately 100 feet in the air allowing us to provide our distribution system with a larger capacity of water as well as a more consistent water pressure. In subsequent years we have also been able to replace two more of the standpipes with larger 100,000 gallon and 300,000 gallon elevated bowl

tanks in an effort to supply peak demands during the summer months. These replacements were part of two expansion projects the company had undertaken and leaves us with two of the old standpipes remaining.

There is an old

saying that some people live and learn while others just live. We at Jersey County Rural Water like to follow the first part of the saying and learn from our past. Although thought to be a good idea at the time, we have found that having six pumping stations located underground



may not have been the best long-range solution and had many unintentional operational issues. Potential flooding; confined space entry requirements; electrical set back clearances; motors overheating; sensitive control equipment prematurely failing; and just getting equipment in and out for repair and/ *continued on page 6* 



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### **Growing Pains**

### continued from page 5



or maintenance are just a few of the issues that come to mind. In 1995 our first above ground booster station was installed and most of the operational issues mentioned above were totally eliminated and it is so much easier to monitor and maintain the equipment. This above ground pump station was so well received that it was decided to phase out all of the underground stations. Stations where chemical feed equipment is present are designed to be constructed as concrete block structures with concrete floors so

they can provide many years of service life and easy cleanup in the event of a spill. Currently only two of the original six underground booster pump stations remain and are slated to be replaced in the next 5 years. We have found that the cost is well worth the advantages and it also allows for modernization of our equipment with variable speed drives for energy savings and SCADA systems to offer us more control and security measures for these remote pumping stations.

As most of you can appreciate, with the economic downturn and lack of new housing starts in the last two years, our growth and expansion plans have been slowed as well. We hope to get our upgrades back on track in the near future, but, in the meantime there is still plenty to do as we are relocating waterlines and other infrastructure for major highway realignments and expansions in and around the Metro East area.

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### IRWA Testifies Before Congressional Subcommittee

I was invited to testify before the United States House of Representatives Committee on Agriculture's Subcommittee on Rural Development, Research, Biotechnology, and Foreign Agriculture on April 25, 2012. The Chairman of this Subcommittee is Representative Tim Johnson who happens to represent the area where I live and will not be seeking re-election this November. I had met with him and his staff for a couple of hours late one evening last fall in Washington DC and had commented at that time that if they ever needed someone to testify on behalf of rural Illinois, I would be happy to do so. Little did I know they would take me up on the offer! Now, I have testified many times before committees in the State Legislature, but never before a Congressional Committee so I was somewhat nervous and subsequently quite relieved when I learned that NRWA's DC staff would "hold my hand" throughout the time needed to prepare,

practice, deliver, and follow-up on my testimony. I would like to share excerpts of that testimony with you in this Issue of *WaterWays*.

After my introduction I thanked Chairman Johnson, Ranking Member Costa and members of the subcommittee, for holding the hearing and "Before I get too far along in my testimony, I would like to thank Chairman Johnson for his service to Illinois. As many of you know the Chairman, while still in law school, began his career in public service by winning a seat on the Urbana City Council in 1971. In 1976 he was elected to the Illinois state legislature and served there until he was elected in 2000 to represent the 15th district here in Washington. He has been a champion of the farmers and rural communities in our state during his time in Congress and we wish him well as he leaves the House of Representatives and returns home to his family in Illinois."

### by Frank Dunmire, IRWA Executive Director



Illinois has a total of three members on the subcommittee – Tim Johnson, Bobby Schilling and Randy Hultgren who all know who we are and what we do but the rest of the members were not quite as well versed so I continued with, "The Illinois Rural Water Association is a member of the National Rural Water Association (NRWA), on whose behalf I am testifying this afternoon. NRWA represents over 28,000 small rural water systems in all 50 states through its 49 rural water association members. Of *continued on page 8* 



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### IRWA Testifies Before Congressional Subcommittee

those 28,000 member systems, 1,100 are located in Illinois. Every day state rural water associations are helping rural communities throughout the country learn how to properly operate, maintain, and manage their water and wastewater systems; how to best ensure compliance with the Safe Drinking Water Act; how to protect their ground and surface water sources; and when necessary, responding to natural disasters. Rural Water prides itself as being an organization that helps build capacity in rural America. When a community has a problem with its water and/or wastewater system, Rural Water assists the system operators in the identification and repair of the problem. We do not do the work for the community, but we help train their operators and teach them how to do it. Last year Rural Water provided over 155,000 hours (or the equivalent of over 17 years) of onsite assistance to rural water and wastewater systems. Rural Water also provided 3,500 hours of wastewater technician classroom training to nearly 15,000 individuals."

"The rural development title of the farm bill historically has not received as much focus as other policy matters such as: direct payments, crop insurance, conservation, or nutrition. However, the rural development programs authorized

by this subcommittee in the farm bill will meaningfully impact the lives of millions of people - take water for example. USDA's water infrastructure and technical assistance programs are authorized in the farm bill. Everyone realizes the importance of water, but it is very easy to take for granted. It is not until you turn on the tap and nothing comes out, or your community is under a boil order, that you begin to understand how complicated life becomes without easy access to water. But the importance of access to safe, affordable, and plentiful drinking water is not only important in rural homes but also to rural businesses. Water quality and affordability are important factors for businesses wanting to locate or remain in a rural community. Many of the businesses related to agriculture that are located in rural communities (think food processing, meat packing, biofuel production, farm services facilities) need high quality and affordable water supplies. Rural water is important to the rural economy. Many times job creation is directly tied to the availability of a good supply of potable water. An excellent example of this is located in Southwestern Illinois at the Prairie State Energy Campus. Chairman Johnson and possibly other committee members are aware that this project alone



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### continued from page 7

well. BUT, what most people don't know is that all of the potable water supply needs for this facility are being met by Washington County Water Company, a not-for-profit water co-operative funded through Rural Development.

Perhaps as a representative of NRWA I am a little biased, but I believe that USDA's water program is one of the most important for rural communities that this subcommittee will address in the farm bill. As a lender of last resort, USDA provides critical financing for water systems that are unable to secure commercial credit. In FY2011 USDA obligated \$1.379 billion in loans and grants to 695 water and wastewater projects. Eighty-two percent of these funds were used for projects in communities with populations of 5,000 or fewer. And even though over the last 72 years USDA has made over \$30 billion in water infrastructure loans to communities that others would not, the lifetime default rate for this program is 1.02%. The metrics for this program are impressive, as are the demands for its funds. According to USDA at the end of FY2011 there were 415 completed applications for which no funding was then available. It would have required an additional \$1.5 billion dollars in loans and grants to fund these projects. There were also an additional \$3.3 billion in preliminary applications from rural communities. Many of the completed applications will be funded with FY2012 funding, but the fact remains that the backlog for loan and grant funds currently exceeds \$3 billion dollars.

In addition to infrastructure financing, the USDA's water program also provides funding for technical assistance to rural *continued on page 9* 

### IRWA Testifies Before Congressional Subcommittee

communities that meet the eligibility requirements to be a borrower from Rural Development. As I mentioned previously, as one of USDA's technical assistance providers Rural Water provided over 155,000 hours of onsite assistance to rural communities last year. This onsite assistance, provided by circuit riders and wastewater technicians (and authorized in Section 306(a)(22) and 306(a)(14)of the Consolidated Farm and Rural Development Act, respectively) is critical to ensuring that rural communities have safe, affordable, healthy drinking water and wastewater systems. The authority for the circuit rider program expires at the end of the fiscal year. We strongly encourage the reauthorization of the circuit rider program.

As the committee considers whether changes to the authorizations for the rural water programs are warranted, the NRWA would urge caution. We believe the farm bill should maintain the water program's current policies: funding should be limited to rural communities who are unable to find credit elsewhere; funding should be targeted to rural communities with the greatest economic need and environmental/ public health challenges; and grants should be awarded based in proportion to a community's economic need.

We are aware of discussions to expand USDA loan and grant eligibility to more populous communities. While there may be other issues within the Rural Development mission area, we believe the water program's current focus on communities with populations of 10,000 or less is working. Currently, 82% of USDA's water infrastructure funding goes to communities with populations of 5,000 or fewer, 64% goes to communities with populations of 2500 or fewer, 51% goes

to communities with populations of 1500 or fewer, and 42% goes to communities with populations of 1000 or fewer. Even though funding has been awarded to the smaller and poorer communities, as I mentioned earlier, there still is \$3 billion backlog. We do not believe anything is to be gained by increasing the pool of eligible communities for water infrastructure loans and grants. In fact, we are concerned this could result in fewer loans and grants for truly needy rural communities and that the increase in applications could place a substantial burden on a shrinking Rural Development field office staff, thereby delaying all loan and grant approvals.

We are also aware of proposals

that would expand water infrastructure grant eligibility for more affluent communities. Again, we support the policies underlying the water program and believe the current grant limitationsprojects in communities with household incomes that exceed 80% of the state nonmetropolitan median household income level are not grant eligible-are working.

### continued from page 8

Mr. Chairman, and Ranking Member Costa, this concludes my testimony. I appreciate the opportunity to appear before you this afternoon. I wish you luck in the days and weeks ahead as the committee develops a new farm bill. I would be happy to answer any questions you may have."

It was at that time I found out that the Members had five minutes each to ask questions of those who had just completed their testimony. I fielded several questions during the Q & A session and through subsequent e-mails. It was quite an honor to testify on behalf of Rural Water and an experience not soon forgotten. Thanks for allowing me the opportunity.



### Summer Time Word Search

Find the words in the grid. Words can go horizontally, vertically and diagonally in all 8 directions!

F	R	Ζ	Т	Ν	S	U	Ν	G	L	Α	S	S	Е	S	L	J	L	J	L
D	Q	R	Μ	F	В	Х	Ν	G	Ν	Ι	Н	S	I	F	Ν	Т	Μ	Е	W
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С	Х	Е	Т	Ι	Α	Ι	Ι	R	Μ	Т	Ν	Ι	V	Ν	S	Q	Q	Ρ	Т
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STH ANNUAL NORTHERN CONFERENCE

### Illinois Rural Water A s s o c i a t i o n

### SERVICE THAT SHINES? October 23 & 24, 2012

<u>Hotel Information</u> Clock Tower Resort and Conference Center 7801 E State St, Rockford, IL 61108 Phone: 815-398-6000 Room Rate \$95.00 (remember to tell them you are with IRWA's room block)



### CONFERENCE AT A GLANCE (\*\*PLEASE NOTE THIS IS A TENTATIVE SCHEDULE ONLY\*\*)

	WATER
9:30	Emor
11:00	Load Balancing Using VFD's
1:00	IEPA Update
2:30	Leak Audits & Unaccounted for Water
3:30	Source Water Protection Update

Tuesday, October 23rd WASTEWATER

Pumps EPA Update Certification Review Update Activated Sludge Operation Panel Basic Math

10.75 Credit Hours

### Wednesday, October 24th

9:00 Panel Discussion - Emergency Preparedness/Response (both water & ww)

- 11:00 Working with (not for) Your Engineer Lagoon & Sand Filter Operation Pan
- 1:00 GIS & GPS Mapping/Line Locating
- 2:00 OSHA

3:15 Filter Care & Troubleshooting

dness/Response (both water & ww) Lagoon & Sand Filter Operation Panel Solving Real Life WW Problems in Illinois Communities Manhole/Sewer Line Rehab Sludge Judging



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### That's Why It's Called Rural Illinois



### **Global Warming 12.0**

Due to the mild late-Winter and Summer-like Spring weather, we'll toss out some topics discussed way earlier than normal this year.

**Lagoons:** The great weather actually allowed most algae populations to cruise right through the winter. Algae blooms of varied colors got a good head-start in a lot of areas. Most of the time additional oxygen will help control excess growth. If aerators are set for specific run-times to conserve electricity, you may have had to extend the run periods. If no aeration exists, the pond water-level can be raised, and/or sodium nitrate added for additional oxygen. (Start the sodium nitrate dose at 8-10 pounds per acre.) Improvement should be seen within 2 weeks.

Should BOD and TSS increase along with the algae, and the additional oxygen level cannot be maintained, other treatment methods may need to be considered. Chemical-addition, barley straw, even the introduction of duckweed, are items to be investigated and analyzed for the most cost-effective solution.

Activated Sludge: The hot days, (even in March), started to point out some ammonia removal problems early. High temperatures and humidity really reduce blower output, and, if you are running close and conserving electricity with those blowers, aeration oxygen-levels can go away quickly, especially with a high mixed liquor suspended solids. Actual aeration oxidation drops off, then when the bugs start gasping for air, the small population of them that are nitrifiers will conk out first. (Removal of BOD will stall out also). When those upper 80s and higher temps are forecast, try to keep the aeration oxygen levels around 3 ppm just to be safe.

We should be past the spring period for filamentous/Nocardia problems, but the fall temperature change will be here soon. Dirty, greasy foam and poor sludge-settling are the main indicators. An "old" sludge seems to be close to setting these conditions in motion. And, sometimes high concentrations of cooking grease in the influent tend to aggravate the situation.

To help dissipate:

- Increase Return Sludge Flow 10 to 20 %
- Increase Waste 10 to 15%
- Keep D.O. above 2 ppm

Be patient and conditions should be can restore normal operations. (In improved within 2 – 3 weeks, and you extreme conditions, chlorination of the Return Sludge Flow can be attempted. This process must be done very carefully or the entire process population can be damaged.)

Sewers: The recent dry period, which has embrace almost all of Illinois and our neighbors, has provided an extended opportunity to check for unusual flows that might be entering any sewers. Unknown tile connections, even water system leaks, can be tracked better with lowered water tables.

#### Water & Sewer

**Rates:** If you haven't thought of adjusting your rate structure by some type of inflationary method, ponder this one:

- Change in Consumer Price Index from 2005 to 2011 = +15.8202%
- Average increase per

### by Bill Dowell, IRWA Wastewater Technician



year = 2.6367%

• If the charge for 1000 gallons of water in 2005 was \$16.000, the adjusted estimated charge for 2012 would be \$18.953.

Interest on savings accounts didn't work that way, did it?

Call 217-820-1562 if you have any questions on this information.



### Summer Time is Flushing Time

It's that time of the year when operators start exercising valves and flushing hydrants. I thought I would offer some quick tips to save lots of time; buy or make one of those speed wrenches for hydrants, locate hydrant, stomp down all the weeds around it, remove nozzle cap, turn the operating nut real fast until it stops, count to ten or fifteen, then turn the operating nut the other way even faster. If you feel the valve slam shut beneath your feet it's done, replace cap, toss speed wrench in the back of the truck and drive to the next hydrant. If you follow those steps I'm sure you will be contacting someone to help locate leaks all around town real soon. We all know that if all these steps are followed it will be a long summer repairing leaks and or replacing hydrants.

Most hydrant manufacturer's offer suggested steps as to proper hydrant flushing. I would suggest that you follow the manufacturer steps and not the quick steps in the previous paragraph. Although there are several brands of fire hydrants on the market and possibly in your system, they all work essentially the same way. The operation specifications for hydrants are quite different. If you have not collected the following information on each hydrant in your system, take along a note book and collect some information while waiting for the water to clear up. Don't forget to apply the proper lube to each manufacturer's suggesting.

- Size and type of operating nut, is it a pentagon, square, 1.5" etc.
- Direction of opening, left (counterclockwise) or right (clockwise)
- Size of hydrant valve opening: 4.5", 5.25" or 6.25"
- Number and size of hose nozzles, don't forget the type of tread
- Size of shoe connection: 4", 6" or 8"

- Brand and model number
- Flow rate, is hydrant color coded
- Year manufactured

The standard color coding of hydrants it is recommended that the top and the nozzle caps be painted according to the following.

- Class AA: Light Blue- usually has a flow of 1500 gpm or more.
- Class A: Green- usually has a flow of 1000 to 1500 gpm.
- Class B: Orange- usually has a flow of 500 to 1000 gpm.
- Class C: Red- usually has a flow of less than 500 gpm.

Now, on to exercising valves; typically there are two styles of gate valves used today. They are double disc and resilient seated. Double disc valves have two metal discs that when in the closed position, tighten against seats to shut off the flow. Double disc valves should be operated regularly, at a minimum annually, to remove buildup on the disc. Resilient seated valves have a coating on the single disc which aids in closing completely. When operating a valve you should count the turns. By doing so you can find out what size the valve is, also to know if it is closing all the way. Is it normally open or closed, left hand thread, right hand thread and is there really a valve where the map says it is. Common valve sizes along with the approximate number of turns for double disc valves. Sometimes the hardest part of exercising all the valves is finding them.

Valve Size	Number of turns
4"	14.5
6"	20.5
8"	27
10"	33.5
12"	38.5

### by Chuck Woodworth, IRWA Circuit Rider



If you can't find all the valves marked on your system map, call the office for assistance, a circuit rider would be happy to help you locate your valves. We also have valve exerciser machines, hydrant diffusers, hydrant flow testers and lots of other equipment to help make your job easier.

Be safe out there.

Word Search Answer Key TNOSUNGLASSES FBXN<u>GNIHSI</u>FN (B)√J C (W A T E R M E L O∕N D ESEDARAPWDR GVAFLOWERSU в Х CPDTH C/B XBNHS /n/n/c М Σ Κ L. N EXDXCXOX <u>~</u>R/W ∕B N P (SXC (SXM P FXEX)) т (H\ D Т K MXSXE LT) Q S Q G R F н К SPRINK G H (Y L U J) Z W W D J Z V T G N T M M LZZL MXHYCARNI VALS Word Search

is on Paqe 23

## Nark Your Calendars! IUNOS RIRAL WATER ASSOCIATION Gth Annual Golf Outing

WHEN: FRIDAY, August 24, 2012 10:00 a.m. Shot Gun Start

WHERE: Piper Glen Golf Club Springfield, Illinois



Last year was a sold out event. If you have not received an agenda and are interested in playing in this year's outing, you can pay by credit card online at www.ilrwa.org or please call the office at 217-287-2115 to have an agenda mailed to you. We look forward to seeing you there!!

### Smiles Will Constantly Brighten Your Day!

Grinning is one of the easiest and cheapest methods to enhance one's high quality of life and the advantages from grinning reach extra than just a single individual at a time. Smiling is contagious, alterations our mood, can make us look younger and additional interesting, creates us glimpse extra successful and relieves pressure.

Grinning is contagious. When you smile, it causes others smile. It is like when you see others grinning it creates you want to smile as well. It just can make you think excellent when you see an individual smiling at you ir even just in your direction and when you smile you are doing the same for other people. You are actively passing along a great feeling via your actions and you will draw people today towards you by presenting a appearance of happiness.

Like somewhat stated above, smiling can also transform your mood. Seeing other

individuals smile adjustments your mood simply because they are presenting a seem of happiness. If you are feeling low, you ought to try smiling even if your feelings on the inside do not reflect it. It has been proven that grinning can trick your body into tricking your mood and can reverse sad or depressed feelings.

Smiling draws individuals in also simply because a smile on ones face can make them appearance additional appealing. Smiling also causes people search younger mainly because when you smile it lifts the muscles in the face. In addition, nothing is much more appealing to a potential partner then an irresistible smile, so start grinning and spread the love.

Grinning can make you extra flourishing. Even though this may be tough to believe, it is true. When you walk into function, wearing a smile you will seem extra pleasant and outgoing. It has been proven that people today who smile a lot more though on the task are less likely to be passed up for promotions. Use this bit of facts to enhance the high quality of your existence and moving ahead in your career. Your next work advancement may possibly just be a smile away.

by Whinston Sparks

If you feel stressed at operate, home, or just in general try a smile on for size. Smiling initial gives you the appearance of not being stressed and second it helps by lowering your blood pressure, boosts your immune system, and releases endorphins that make you feel excellent and melts the pressure away.

It is awesome how such a little act can transform so several lives for the much better all at once.

#### About The Author

Brighten someone's day by sending <u>www.eligr.com</u>. It's a sure way to make someone smile!

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### Keeping It Cool In the Hot Weather

Getting too hot can make you sick. You can become ill from the heat if your body can't compensate for it and properly cool you off. Heat exposure can even kill you: it caused 8,015 deaths in the United States from 1979 to 2003.

These are the main things affecting your body's ability to cool itself during extremely hot weather:

- High humidity. When the humidity is high, sweat won't evaporate as quickly, which keeps your body from releasing heat as fast as it may need to.
- **Personal factors.** Age, obesity, fever, dehydration, heart disease, mental illness, poor circulation, sunburn, and prescription drug and alcohol use can play a role in whether a person can cool off enough in very hot weather.

Here are some facts about which people are at greatest risk for heat-related illness and what protective actions to take to prevent illness or death:

- People who are at highest risk are the elderly, the very young, and people with mental illness and chronic diseases
- But even young and healthy people can get sick from the heat if they participate in strenuous physical activities during hot weather.
- Air-conditioning is the number one protective factor against heat-related illness and death. If a home is not air-conditioned, people can reduce their risk for heat-related illness by spending time in public facilities that are airconditioned.

You can take these steps to prevent heat-related illnesses, injuries, and deaths

during hot weather:

- Stay in an air-conditioned indoor location
- Drink plenty of fluids.
- Wear loose, lightweight, lightcolored clothing and sunscreen.
- Schedule outdoor activities carefully.
- Pace yourself.

- Take cool showers or baths to cool down.
- Check on a friend or neighbor and have someone do the same for you.
- Do not leave children in cars.
- Check the local news for health and safety updates.
- And remember your pets, they are susceptible to overheating too!



Swimming is great fun and keeps you cool in excessive heat, just don't forget the sunscreen.



Wading pools are an easy cool down for your pets too.

### by the CDC



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