

# DAM SAFETY NEWS

## Dams and Ice

The winter of 2013 -2014 has been a challenging one for dam owners and operators. The combination of extremely low temperatures and long duration of the cold has resulted in very thick ice on many water bodies and deep ground frost throughout the state. The amount of ice and snow and deep frost going into the spring melt can present challenges for dam owners and operators.

The increasing temperatures and longer days of spring can cause rapid melting of the snow cover more which then runs directly into water bodies due to the frozen ground. The concern increases should rain fall on snow covered frozen ground which can drastically increase runoff to the receiving water body. The snow cover tends to melt more rapidly than the ice. As water levels in water bodies rise, the ice cover may break into large chunks or floes which float downstream. The floes may then become jammed at a natural constriction point in a stream or at man-made constriction points such as bridges and dams. The pressure caused by the increasing pile of ice and associated flooding can lead to damage to infrastructure and buildings.

Ice and ice jams can cause extensive damage to various parts of dams and make it impossible to operate gates. The force of the ice pressing against the gates structures can damage the gate and operating equipment. If the gates become inoperable, the operator will be unable to release the water behind the dam as needed to maintain previously set water levels or to respond to rising pool levels risking safety of the structure. The ice can also damage concrete structures by tipping them over, causing them to slide on their foundations, or causing cracks. Large ice pushes have been known to cause damage to the upstream slopes of earthen embankments.

If you suspect the ice forming on the upstream side of you dam will prevent you from properly operating your dam there are some possible solutions. Contact your engineering consultant and/or your local DNR dam safety engineer for ideas on how to deal with ice on at your dam. Bubblers, water circulation, heat application and mechanical removal are just some examples of possible solutions to freeing up frozen or ice blocked gates.



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## Email Notification of Updates

After the Spring 2014 newsletter, the Wisconsin *Dam Safety News* will become an electronic-only newsletter sent via email using the WDNR's GovDelivery system. To be added to the electronic mailing list, please go to <http://dnr.wi.gov/topic/dams/newsletters.html> to subscribe. Click on "Subscribe to DNR Updates" and then choose "Dam Information". Copies of this newsletter in PDF format can be found at: <http://dnr.wi.gov/topic/dams/newsletters.html>.

**If you wish to continue to receive a paper copy of the *Dam Safety News*, please contact either Miriam Anderson at 608-266-5228 or LuVenus Mayas at 608-266-9273 or send a request to WDNR at [DNR DAMSAFETY@wisconsin.gov](mailto:DNR DAMSAFETY@wisconsin.gov).**

The National Weather Service has issued warnings from ice jams throughout the Midwest. Several ice jams have already occurred in Ohio, Indiana and Illinois. Concerns have been raised regarding potential ice jams along the Wisconsin River and the Milwaukee River. Wisconsin Emergency Management and the Wisconsin DNR Dam Safety staff are monitoring the situation. If an ice jam develops near or on your dam contact the Water Management Engineer for your area. A list of Water Management Engineers by county can be found at <http://dnr.wi.gov/topic/dams/regionalcontacts.html>.

## Spring Flooding Outlook

Since 2012, Wisconsin has ricocheted from drought conditions to flooding conditions back again to drought in the summer/fall of 2013. The long cold winter of 2013 has brought a new concern for the spring of 2014: ice jams.

The 90-day outlook for March - May is for below normal temperatures with an equal chance of precipitation rates being above or below normal. A cold spring with limited rainfall should allow the existing snow cover to gradually melt and result in typical small scale spring flooding. However, the deep frost levels caused the colder than normal winter combined with a large rain event could cause higher than normal localized flooding as the precipitation simply runs off the frozen ground with little to no infiltration. Rapid warming and/or a large rain event when combined with the thicker than normal ice could result in rapidly developing ice jams. Ice jams can cause flooding in areas not normally at risk and cause damage to infrastructure such as bridges and dams.

Dam owners may want to inspect their dams more frequently over the next few weeks and ensure that any gates are in good operating condition. Owners should also be tracking current weather conditions and upstream ice conditions.



- Wind blown ice along  
Lake Winnebago, Neenah  
Township WI March 2009

- Ice jam along Rock River,  
Beloit WI January 2008



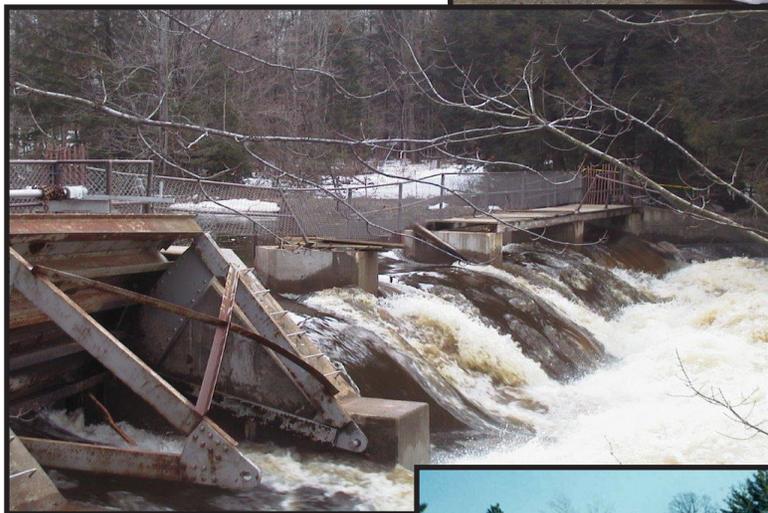
For a graphic display of the Three Month Outlook for temperature and precipitation go to:  
[http://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/seasonal.php?lead=2](http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2)

For a technical discussion of the 30-day outlook go to:  
[http://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/fxus07.html](http://www.cpc.ncep.noaa.gov/products/predictions/long_range/fxus07.html)

For the Long-Lead Forecast Release Schedule for 2014 go to:  
<http://www.cpc.ncep.noaa.gov/products/predictions/schedule.html>.  
The next 30-day outlook will be issued on March 20, 2014 for April. The Long-Lead Forecast Release Schedule for 2015 will be released in early December.

While long range forecasts are helpful, it is very important for dam owners to be aware of what is expected for the next few days. Your local NWS office can give you the most current detailed information for your area. Current weather conditions and short term forecasts on a site specific, community or county basis can be found at:  
[http://weather.noaa.gov/weather/WI\\_cc\\_us.html](http://weather.noaa.gov/weather/WI_cc_us.html).

*-Vogl Dells Dam, Marathon County March 2004*



*-Vogl Dells Dam, Marathon County March 2004*

*Note broken gate and destroyed operator's bridge.*

*-Black River, Clark County March 2004*



## Including Dam Failure Analyses in Local Floodplain Ordinances

Wisconsin's Dam Safety and Floodplain Management programs work together to maintain a dam's hazard rating by regulating land downstream of the dam through the adoption of the dam failure analysis (DFA) into the local floodplain ordinance.

Dam owners are notified of the requirement to complete a DFA as part of the inspection process, as a result of reconstruction, application for a grant or in an administrative order. It is the dam owner's responsibility to work with WDNR and the community to ensure the DFA is included in the local floodplain ordinance. If a DFA exists, then under Sections NR 116.08 and 116.09, Wisconsin Administrative Code, in most cases the community must include the area inundated by the failure analysis as an overlay to the local zoning map. The affected area must then be zoned and regulated as Floodway unless the area is specifically mapped otherwise.

The process for adopting DFAs into a local ordinance is the same as for any ordinance amendment. The community must hold a public hearing on the proposed adoption of the DFA noticed using the Class II notice process outlined in Chapter 985, Stats. Once the DFA is adopted, the community must send a certified copy of the amended ordinance along with the two notices of public hearing and proof of publication or posting to the WDNR for review and approval.

Amending an ordinance to include a DFA is a state standard. FEMA does not need a copy of the ordinance. A more detailed discussion on adopting or amending local ordinances can be found in the document *Ordinance Adoption Procedures on the Floodplain Management Resources* page: <http://dnr.wi.gov/topic/floodplains/Communities.html#Ordinances>.

## Dam Emergency – Who Do You Call?

If despite your best efforts at maintaining your dam, an emergency arises, the first thing to do is to open your Emergency Action Plan (EAP) and follow the steps outlined. If for some reason, you do not yet have an EAP for your dam and failure is imminent, then call 911 and be prepared to provide the following information to the 911 operator:

- name and title of the person reporting the incident;
- callback number of the person reporting the incident
- name/location of the dam including county, waterbody and nearest road; and
- present condition of the dam such as perceived problem, gate status or level of pond in relation to low point in the embankment.

***Under any circumstance, if failure is imminent, call 911 first!  
And then call .....***

**Wisconsin Emergency Hotline  
1-800-943-0003 (24 hour)  
Press "1"  
Ask for "DNR Duty Officer"**

## DNR Staff Changes

Change has come once again to the DNR Dam Safety/Floodplain Management staff with the recent retirement of Terry Cummings, Water Management Engineer in our Rhineland office. Terry retired February 28, 2014 after 15 years as a Water Management Engineer for the Dam Safety and Floodplain Management section. He most recently provided dam safety, floodplain management, and engineering assistance to Florence, Forest, Iron, Langlade, Lincoln, Oneida, Price and Vilas Counties and communities. Until Terry's position is filled, please contact:

Florence/Forest County	Miles Winkler - Green Bay 920-662-5195 <i>miles.winkler@wisconsin.gov</i>
Iron/Vilas County	Frank Dallam - Spooner 715-635-4064 <i>frank.dallam@wisconsin.gov</i>
Langlade County	Joe Behlen - Wisconsin Rapids 715-421-9940 <i>joseph.behlen@wisconsin.gov</i>
Lincoln County	Mark Stephenson - Black River Falls 715-284-1418 <i>mark.stephenson@wisconsin.gov</i>
Oneida County	Dustin deFelice - Eau Claire 715-836-7574 <i>dustin.defelice@wisconsin.gov</i>
Price County	Mike Rogne - Eau Claire 715-839-3735 <i>michael.rigney@wisconsin.gov</i>

The above county assignments are temporary. Please check the list of Water Management Engineers by county on the WDNR Dam Safety website at: <http://dnr.wi.gov/topic/dams/regionalcontacts.html> over the coming months to determine if any updates have been made.

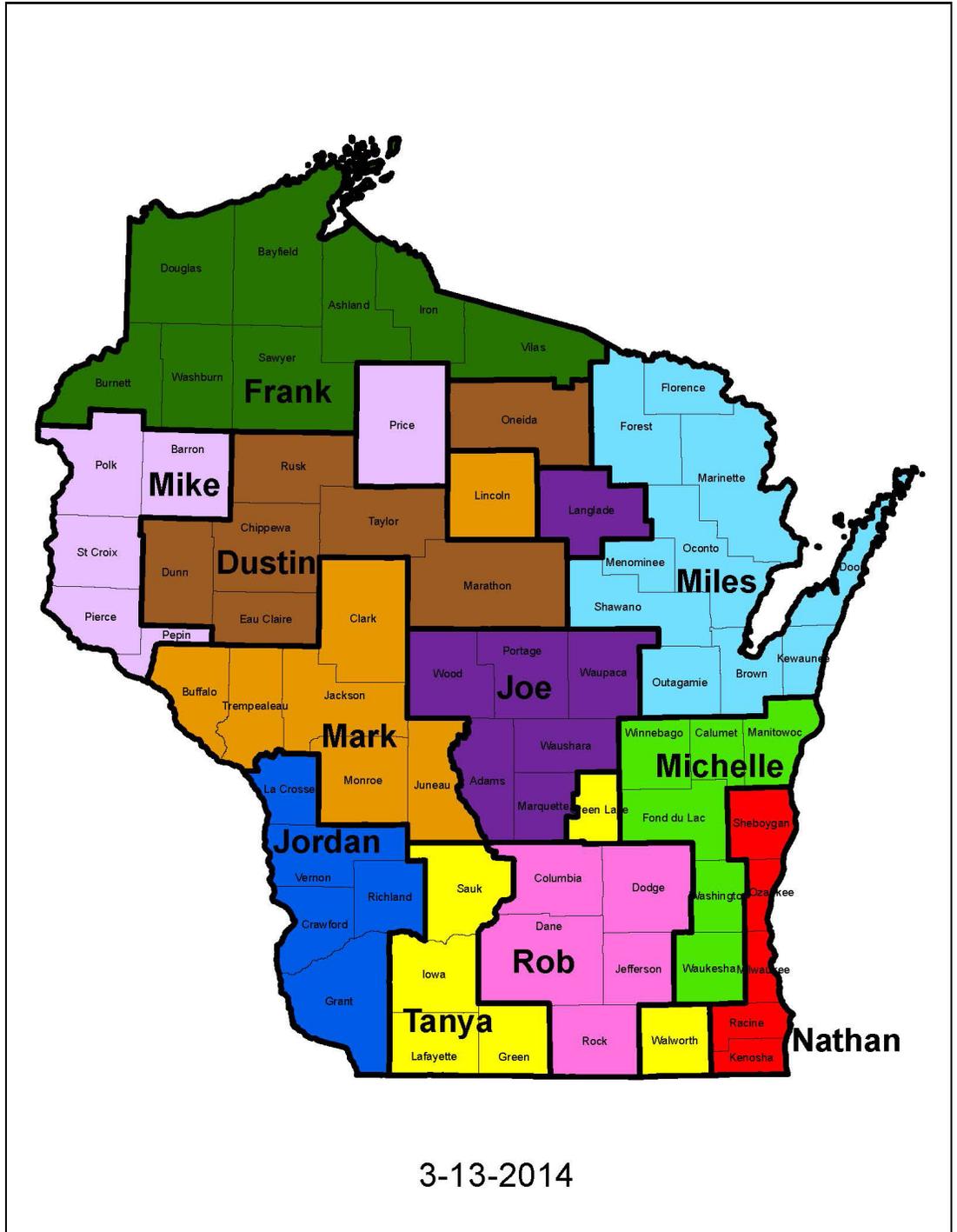
## Association of State Dam Safety Officials

The Association of State Dam Safety Officials (ASDSO) is a national non-profit organization serving state dam safety programs and the broader dam safety community, which includes federal dam safety professionals, dam owners and operators, engineering consultants, emergency managers, manufacturers, suppliers, academia, contractors, and others interested in improving dam safety. ASDSO's mission is to advance and improve the safety of dams by supporting the dam safety community and state dam safety programs, raising awareness of dam safety issues, facilitating cooperation, providing a forum for the exchange of information, representing dam safety interests before governments, providing outreach programs, and creating a unified community of dam safety advocates.

ASDSO promotes dam owner education through webinars, workshops and conferences. A list of upcoming webinars and workshops can be found at <http://www.damsafety.org/>. Information on webinars including how to register and professional development hours can be found at <http://eo2.commpartners.com/users/asdso/index.php>.

# Water Management Engineers Map

The map below can be used as a quick and easy guide in determining who is your Water Management Engineer as of March 2014. WMEs are your local contact regarding questions floodplain management and dams. WMEs also provide technical assistance regarding engineering questions. A complete list of the Water Management Engineers by county including telephone numbers, email addresses and mailing addresses can be found on the WDNR Floodplain Management website at: [http://dnr.wi.gov/topic/floodplains/staff\\_flood.html](http://dnr.wi.gov/topic/floodplains/staff_flood.html). Please note that the current staff assignments are temporary and the website should be checked over the coming months to determine if any updates have been made.



# WDNR Dam Safety Program

## 2014 Dam Safety Workshops

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The purpose of the workshops is to educate dam owners, operators and engineering consultants about the dam inspection requirements and process. The dam permitting/approval process will also be covered along with basic dam terminology, design and information on how to hire an engineering consultant. The workshops will also provide an opportunity for dam owners/operators to meet one on one with WDNR Dam Safety staff, if desired.

The workshop cost is \$20.00 and includes lunch and breaks. Registered Professional Engineers can earn 6 Professional Development Hours by attending the entire workshop. Attendees will receive a CD with course materials and other materials related to dam safety, IOMs, EAPs, permitting and inspections.

### LOCATIONS and DATES

May 13, 2014	Lussier Heritage Center Main Level 3101 Lake Farm Road Madison, WI
May 14, 2014	Washington Town Hall 5750 Old Town Hall Eau Claire, WI
May 15, 2014	Northeast Wisconsin Technical College Student Center SC132 Lecture Hall 2740 West Mason Street Green Bay, WI

### AGENDA

- 8:00 – 8:30 Registration/Coffee  
Session 1 Course Introduction/Basic Dam Terminology and Design  
Session 2 Dam Permits and Approvals
- 11:45 – 12:30 Lunch provided
- 12:30 – 3:00 Session 3 Inspecting Your Dam  
Session 4 Owner Required Inspections
- 3:00 – 3:15 Wrap up
- 3:15 – 5:00 One on one discussions with WDNR staff

For questions regarding registration, please contact the Association of Dam Safety Officials at (859) 550-2788 or <http://www.damsafety.org/> and click on Register for Training. For questions concerning workshop materials, professional development hours for Wisconsin registered professional engineers, etc., please contact WDNR at [DNRDAMSAFETY@wisconsin.gov](mailto:DNRDAMSAFETY@wisconsin.gov).

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For further information regarding the WI Dam Safety Program, please visit our website at: <http://dnr.wi.gov/topic/dams/> or email: [dnrdamsafety@wisconsin.gov](mailto:dnrdamsafety@wisconsin.gov).

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