Every topographic map and all Light Detection And Ranging (LiDAR) elevation data are tied to physical benchmarks and referenced to a reference elevation datum. Existing topographic data and maps are out-of-date by many years, and have insufficient vertical accuracy for current flood and stormwater map needs. Updating topographic data requires replacement of benchmarks lost to construction and construction of new benchmarks, all carefully surveyed to a modern datum.

The National Geodetic Survey (NGS) Height Modernization program is a national effort to improve benchmarks and elevation data. The Illinois Height Modernization program (ILHMP) is being led by the Illinois State Geological Survey working in cooperation with the Illinois Department of Transportation. Illinois Height Modernization consists of several components:

- Replace lost benchmarks and add new high-stability marks throughout Illinois. Modern electronic leveling must be used to achieve the high accuracy needed to improve the elevation data.

- Acquire new airborne LiDAR imagery and generate digital elevation model (DEM) data for online distribution. Publicly available LiDAR and elevation data can be found at the Illinois Natural Resources Geospatial Data Clearinghouse at: www.isgs.uiuc.edu/ndsihome/webdocs/ilhmp/. An important use for the improved DEM data is hydrologic modeling for flood and stormwater management. Although the data products are an improvement over existing maps (see graphic at right) there are challenges in merging LiDAR data: multiple vendors, varying horizontal and vertical resolutions, and differences in acquisition and processing.
Adjust benchmarks to a common datum to ensure that LiDAR data from different counties represent natural hydrology and allow counties and municipalities to adjust local network to the national network so that flood and stormwater maps 'connect.'

Promote construction of Real Time Network (RTN) Continuously Operating Reference Stations (CORS) for improved statewide satellite positioning. New satellite surveying uses reference data from multiple base stations to improve accuracy. Precision agriculture also uses RTN CORS.

The cost of the project is estimated at $35 million over ten years. Illinois received an earmark of $352,500 in FY08 to begin the project, with additional funding in the summer of 2009. Support for the program was eliminated from the FY09 federal budget and ILHMP is dependent on earmarks from two Illinois congressional representatives, Tim Johnson (15th) and Aaron Schock (18th). Acquisition of statewide LiDAR imagery is progressing slowly. Cost sharing for new LiDAR would stretch the modest funding.

Cooperation between private, local, state, federal agencies is needed to obtain the cost-share funding needed for new benchmarks and acquiring LiDAR-derived elevation data used to update flood and stormwater maps. For more information, contact Beverly Herzog, Illinois State Geological Survey (Institute of Natural Resources Sustainability, University of Illinois at Urbana-Champaign) at 217-244-2788 or herzog@isgs.illinois.edu.

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**Vortex Valves: Flood Prevention Tools Catching on in UK Dam Projects**

~Robert Y.G. Andoh, Hydro International

Illinois has experienced its share of flooding with a number of declared disasters in recent years. As a result, affected communities continue to seek new alternatives to safeguard their property from destructive floodwaters.

Dams have traditionally played an important role in public safety. To protect against downstream flooding during heavy rains, engineers typically deploy two strategies: build up communities’ flood defenses or hold back the flood waters upstream. The challenge is to devise a scheme that balances the need to stop the damaging floods downstream of the dam and to limit the size of the resultant flood reservoir on the upstream side. Some dam projects in Europe have used vortex valves to help strike this balance.

Vortex valves act like natural hydraulic brakes; high flows initiate a vortex within the valve which in turn restricts the flow of water out of the device. When head pressure builds, water circulates in a vortex pattern, allowing an air core to form within the device preventing excess amounts of water from entering conveyance systems such as channels through urbanized areas or combined sewers and other collection systems. These valves are currently used in the U.S. for flow control purposes in urban drains and ponds, but they haven’t been applied to dam projects.

One example of their use in these types of projects can be found in the village of Weedon Bec, situated west of Northampton in the United Kingdom. Over the Easter holiday in 1998, the village suffered severe flooding from the River Nene due to the limited capacity of culverts under a railway embankment downstream of the village and at a road bridge within the village. To protect against the flooding, engineers considered several options. Increasing the capacity of the channel required the existing river channel to be doubled in size. This would have resulted in land takings and fundamentally would only have transferred the problem further downstream. Containment of floodwater within the river channel would have also required construction of flood walls through 30 private gardens, which
would have been costly and disruptive. It soon became evident that the most viable solution was the provision of upstream flood storage.

A site was identified less than a mile upstream of the village where the river flows through a well-defined valley with little habitation, forming a suitable location for a flood storage scheme. The project team decided the best solution was to install a vortex flow control to attenuate the peak flow. A conical vortex valve from Hydro International was chosen on the basis of its simplicity, low maintenance requirements and relatively low cost for this site. Other options for controlling flows through the culvert such as a fixed orifice, an actuated penstock or a float operated radial gate were considered but discounted due to lack of power supply, the unrealistic expectations of maintenance and the risk of operational failure of equipment with moving parts.

Instead, a vortex valve offered flexibility and ultimately attenuated the peak flow through Weedon Bec from 7,000 gallons per second to 2,600 gallons per second, which was the in-bank capacity of the river channel through the village during a 50-year event. Additionally, rather than send flows downstream to be dealt with later, vortex valves were able to regulate flows and allow drainage systems to distribute them in a more natural manner. Today, the unit at Weedon Dam has the ability to adjust the controlled outflow between 2,000 to 3,000 gallons per second via the use of removable stop logs on its intake.

To solve future water issues in the most economical, efficient manner possible, society will have to adopt integrated water management plans that prevent problems before they occur. The use of vortex valves is one alternative to ensuring those plans can work.

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**Leggo my Eggos!**

**Flooding Affects Waffles, Pumpkins**

~content from ChicagoTribune.com and CNNMoney.com

Did you enjoy Eggos with your holiday breakfast? Did you have pumpkin pie with your Thanksgiving dinner? Or was your grocery shelf bare? We all know that flooding can result in devastating damage to homes, businesses, and roadways, but we may not think about the other ways it can affect us.

Flooding at an Atlanta bakery during heavy rains in October forced Kellogg, which makes Eggo products, to shut down production temporarily, said company spokesman Kris Charles. Plus, equipment at Kellogg's largest waffle facility, based in Rossville, Tenn., needs extensive repairs. Remaining inventory will be rationed to stores across the country "based on historical percentage of business." Grocery stores will experience a shortage of waffles until mid-2010.
Heavy rains in Illinois this past October led to a nationwide pumpkin shortage. Nestle sells eighty to ninety percent of all the canned pumpkin in the U.S., and grows almost all its pumpkins on 5,000 acres near Morton, Illinois. If you turned all the pumpkins on its farm to pie, it would total 90 million pies, said Nestle spokeswoman Roz O’Hearn.

O’Hearn said company managers in Morton reported the worst pumpkin harvest in 35 years. "Trucks are buried in the fields up to their axles," she said. Heavy rains made it nearly impossible to pick its pumpkins during this year’s harvest. As a result, Nestle announced that it would not pack any more pumpkins in 2009. The company had a wet harvest in 2008, too, which meant it didn't have a surplus to carry over into 2009. Nestle expects the shortage to last until fall 2010.

January 12, 2010 Public Meeting for Green Infrastructure for Clean Water Act

-Bob Murdock, Michael Baker Jr., Inc.

The IEPA, through Public Act 96-0026 (Green Infrastructure for Clean Water Act), has commissioned a study to evaluate how to incorporate sustainable (green) management practices into urban stormwater management regulations in the State of Illinois. Martin Jaffe, Department Head of Urban Planning and Policy at UIC, is leading this effort for the Illinois EPA. He is joined on a task force by representatives of various state and local agencies including IDNR, CNT, CMAP, Indiana-Illinois Sea Grant, CDB, and IDOT, who together will produce a report by June 30, 2010 for IEPA and the Illinois Legislature. Among many things, this document will:

- evaluate the impacts of urban stormwater on watershed health in IL;
- document potential urban storm water management performance standards to address flooding, water pollution, stream erosion, habitat quality, and the effectiveness of green infrastructure practices to achieve such standards;
- include findings and recommendations for adopting an urban storm water management regulatory program in Illinois which includes performance standards and encourages the use of green infrastructure to achieve those standards.

The report will likely serve as the basis for future potential statewide and/or regional urban stormwater regulations aimed at improving water quality in streams and lakes. A public meeting has been scheduled at IEPA in Springfield on January 12, 2010, from 1:30pm – 3:30pm in the Sangamon Room. Mr. Jaffe and representatives from the IEPA will present early findings, and solicit input from those in attendance.

If you are a stormwater professional or are involved with such issues, I highly encourage your attendance at this upcoming event. I was able to attend a meeting this month and listen to the findings and plans of the task force. One impression I took away is that the study authors need more input from practitioners who face and manage these issues every day – those who administrate stormwater regulations, who deal with operation and maintenance challenges, and who design and construct green stormwater best management practices. This study is very important to the shaping of future stormwater management in Illinois. Don’t let it slip by without being heard!

Contacts for questions are Amy Walkenbach or Christine Davis at 217-782-3362. To RSVP, contact Amy at amy.walkenbach@illinois.gov.

A farmer inspects his flooded pumpkin field near Morton, Illinois last fall. Photo: Leslie Renken-AP

There are several new publications available online that may be of interest to IAFSM members:

The Illinois Local Floodplain Administrators Manual (Blue Book) and North Eastern IL Local Floodplain Administrators Manual (Green Book) have both been updated. The books are available for downloading from the IDNR’s website at http://dnr.state.il.us/owr/publications.htm and will soon be available at www.illinoisfloods.org/publications.html.

So, You Live Behind a Levee! What you should know to protect your home and loved ones from floods is an excellent new booklet published by ASCE in conjunction with other organizations including ASFPM. The 17-page booklet contains information to help answer property owner questions about levees and their associated risk, and helps property owners act now to better protect against future flood threats. The booklet can be downloaded from http://content.asce.org/ASCELeveeGuide.html and will soon be available at www.illinoisfloods.org/publications.html

From the Chair
-Jeff Wickenkamp, Hey & Associates

Happy New Year! I hope your holidays were enjoyable and that you shared some memorable time with your families while also finding some peaceful moments for rest and rejuvenation (and if you’re really lucky those two weren’t mutually exclusive).

I would like to take a moment to acknowledge the fine work done this past year by Mark Hoskins, our Youth Outreach Chair. Mark has accepted a position with Dewberry and Davis in Fairfax, Virginia and will soon be leaving our state. As you may recall, IAFSM presented Mark with an Outstanding Service Award in 2008 for his work on the 2008 Rain Day Tent at the Illinois State Fair. In 2009, he followed up by developing an IAFSM initiative to award research grants to several Illinois universities. Mark’s innovative and creative thinking will be missed by our board, but we know he’ll only be a phone call away in Virginia.

The 2009 IAFSM Youth Outreach Research Grants were awarded to teams at Northwestern University, Illinois Institute for Technology (IIT) and the University of Illinois Urbana-Champaign. Northwestern’s project is a design study aimed at improving quality in the North Shore Canal. IIT will be initiating work on a stormwater management best practices park at the IIT main campus in Chicago. The University of Illinois team will be using data from a field laboratory established at an on-campus green roof to develop guidance for stormwater managers to better quantify the stormwater benefits of green roofs. We’re looking forward to visiting with the grant recipients at the annual conference where they will be presenting their work in the exhibition hall.
IAFSM Awards Nominations Needed!

The IAFSM Awards committee is once again seeking nominations for awards to be presented at this year’s conference. The awards categories are:

**Floodplain Manager of the year**
This award recognizes outstanding individual efforts and contributions at the local level.

**Outstanding Service**
Awarded to an IAFSM officer, a Federal, State, or Local Official, or a consultant who has gone above and beyond normal expectations and duties to promote or encourage IAFSM goals.

**Stormwater Management**
Awarded to a floodplain manager, an individual, a group of individuals, a consultant, or an agency who improved stormwater management or reduced urban flood risks through creative engineering, regulatory measures, or other approaches.

**Mitigation**
This award is given to an individual or community that has encouraged flood hazard reduction through a buyout program, retrofitting, preparation of a mitigation plan, or other similar mitigation efforts.

**Journalism or Public Education Award**
This award is generally given to a media outlet that has produced floodplain or stormwater management special features during the year. The award can include individuals or agencies who have contributed to outreach and public awareness of floodplain or stormwater management issues.

**Legislation**
This award honors Illinois law makers or local officials for their efforts in floodplain issues. The award can also be given to an individual who makes extraordinary efforts to encourage the passage of legislation or to a community that has adopted unique local regulations that promote floodplain management or flood damage reduction.

**Lifetime Achievement**
This award is the IAFSM’s highest honor. It is reserved for outstanding longtime floodplain managers. These individuals’ long-term contributions have made a noticeable impact on floodplain and stormwater management efforts in the State of Illinois. This award is not always given on a yearly basis.

If you have any awards nominations please email a brief description of the person or program and the award category to Paul.Osman@illinois.gov. However...you must HURRY! **Deadline for the awards submittal is January 30, 2009.** The awards committee may request additional information to support any submittal. The awards committee will review and vote on each nominee. Awards will be presented during the Annual Conference awards luncheon on March 11.
IAFSM is Looking for a Few Good People!

Who should be on the Board?
The Board should include representation from a variety of sectors and disciplines (state, local, private, etc). Board members should have experience dealing with floodplain and stormwater issues and have shown, at a minimum, a commitment to IAFSM through membership and event attendance.

Who should get nominated?
The nominations committee is responsible for securing and evaluating nominations for the elected positions. Nominations may be made by any IAFSM member, the individual, or the nominations committee. Only those nominees that meet the minimum requirements will be listed on the ballot. The nominations committee is charged with securing nominations for the various elected officers positions that provide representation from the various sectors and disciplines.

When are elections??
Officers are elected at the IAFSM annual conference. Nominations must be submitted by the conference registration deadline for consideration, no write-in candidate will be considered. Only IAFSM members may vote and all ballots must be signed. Nominations should be sent to the Nominations Chair: paul.osman@illinois.gov no later than February 15, 2010.

Congratulations to the New Floodplain Managers Certified in 2009!

Todd Abrams, W-T Civil Engineering, LLC
Geoff Aggen, Burke Engineering Corp.
Brittany Albrecht, Lake County, IL
Michael Anderson, Stantec Consulting, Inc.
Emily Anderson, Christopher B. Burke Engineering, Ltd.
Joye Baker, Adams County, IL
James Bernahl, City of St. Charles, IL
Andrew Braun, Peoria County, IL
Steven Brown, Hanson Professional Svs., Inc.
John Brunke, TECH 3 Consulting Group, Inc.
Daniel Burau, Village of Lake Zurich, IL
Somendra Chakravorty, University of Illinois
Daniel Doerfler, Patrick Engineering, Inc.
Scott Doyle, Craig R. Knoche & Assoc.
Michelle Fuller, Illinois Dept. of Natural Resources
Jonathan Grabowy, Metropolitan Water Reclamation
District of Greater Chicago
Kevin Gray, Village of Wheeling, IL
Nathan Groff, V3 Companies of Illinois, Ltd.
Christopher Gutkowski, Clark-Dietz, Inc.
John Hamann, Woodford County, IL
Jeremy Hamer, Haeger Engineering, LLC
Christopher Hanchett, V3 Companies of Illinois, Ltd.
Bradley Hargett, James J. Benes & Assoc., Inc.
Simona Hawk, Engineering Resource Assoc., Inc.
Arun Heer, HDR Engineering, Inc.
Brian Herrmann, City of St. Charles, IL
Emily Hoffmann
Patricia Hubbartt, Illinois Dept. Natural Resources
Karl Jensen, Gewalt Hamilton Assoc., Inc.
Rodney Johnson, Hoelscher Engineering, P.C.
Jennifer Jungmann, URS Corporation
Sean Kelly, Robinson Engineering, Ltd.
Kevin Kenniff, Bolinger, Lach Assoc., Inc.
Terry Kestel, Village of Frankfort, IL
Robert Mack, Cook County, IL
Andrew Mayes, Village of Glenview, IL
Christopher McClure, Hampton, Lenzini & Renwick, Inc.
Michael McGovern, Teng & Assoc., Inc.
Andrew McKenna, H.W. Lochner, Inc.
James Meier, Merit Corp, PC
Sarah Milton, Illinois Dept. Natural Resources
Jonathan Moody, Bolinger, Lach Assoc., Inc.
Doug Mosleh, Madison County, MO
Scott Nielsen, Dupage County, IL
David Noble, City of Ottawa, IL
Timothy Oakley, City of Des Plaines, IL
Wildy Pantoja, DuPage County, IL
Kristi Root, Tetra Tech EM, Inc.
Kimberly Sarmento, Bonestroo, Devery & Assoc.
Joel Schmidt, USACE
Gregory Schneider, City of Batavia, IL
Robert Sperl, City of Wheaton, IL
Mathew Stafford, La Salle County, IL
Eric Steffen, Lake County, IL
Michael Sutfin, City of Ottawa, IL
Joseph Tebrugge, City of Wheaton, IL
Kelly Veronico, Illinois Dept. Natural Resources
Mark Wesolowski, Burke Engineering Corp.
Jill Wilbanks, Woodford County, IL
Abigail Wilgreen, City of Crystal Lake, IL
Matt Williams, INRS Illinois State Water Survey
Jeffrey Williams, Occam Consulting Engineers
Mark Zito, CDM
New Users Group for CRS Coordinators

The IAFSM CRS Committee is facilitating the formation of a users group for Community Rating System (CRS) coordinators. The purpose of the group is to allow CRS coordinators to get to know one another, and provide another source of support for those administering CRS programs in their jurisdictions.

The first meeting is set for Wednesday, February 10 at 11:00 a.m. at the Lisle Police Department Training Room, in Lisle. The group will discuss future goals for the group, format of future meetings, the possible use of an electronic bulletin board or web page postings to share information, share successful CRS activities being done in their community, and hear a brief update on the CRS program by Scott Cofoid from ISO.

For more information about this project, contact Mary Lou Kalsted, CRS Chair, at (630) 271-4107 or mkalsted@villageoflisle.org.

CEC / Training Opportunities

DCEO Environmental Workshops
The Illinois Department of Commerce and Economic Opportunity is sponsoring a series of environmental regulatory workshops in February 2010. Workshop Topics include: Lead Hazards; Asbestos; Incentives for Energy Efficiency; Endangered Species, Consultation & Development; Erosion Controls & Stormwater; Radon; Floodplain 101; Disposal of Hazardous/Non-Hazardous Wastes, and the EPA’s Indoor airPLUS program. The workshops will be held at four locations statewide:

- East Peoria, 1/28/10
- O’Fallon, 2/10/10
- Carterville, 2/9/10
- Palatine, 2/23/10

To register: www.ienconnect.com/enviro

GIS For Hydrology and Hydraulics
The ASCE EE&WR Technical Group will be hosting a GIS for Hydrology and Hydraulics Dinner Seminar on Thursday, January 28, 2010 from 5:30-8:30 at Marcellos in Chicago. The seminar will discuss GIS applications for H&H modeling including a case study based on the Calumet-Sag Watershed Detailed Watershed Plan. To register or for more info, contact Heather Henneman at 312-683-7832 or HennemanHE@bv.com. Registration deadline is January 21, 2010.

IAFSM Annual Conference
Don’t forget! Our annual conference will be held March 10-11, 2010 in Tinley Park. Registration information will be sent later this month via email.
2010 Certified Floodplain Manager (CFM) Exam Schedule

- Tinley Park: 3/9/10 (Holiday Inn)
- Bartlett: Summer 2010, date TBD (IDNR office)
- Champaign: 9/8/10 (ISWS office)
- Woodridge: 9/15/10 (V3 office)
- Rosemont: December 2010, date TBD (CBBEL office)

As a reminder, IAFSM will use the National Association of State Floodplain Managers (ASFPM) Exam effective January 1, 2010. The National Exam will include questions on coastal floodplain requirements that were not previously included on the Illinois exam, and will exclude Illinois-specific questions. For more information or to register, please visit www.illinoisfloods.org/certification.html

IAFSM Board Meetings

All members are welcome and encouraged to attend our Board Meetings. This is a great way to learn more about what the organization is doing and get involved at the Committee or Board Level!

Our next meeting will be January 14, 2010 at 9:30 a.m. at the U.S. Army Corps of Engineers’ Illinois Waterway Visitor Center at 950 North 27th Road, Route 1, in Ottawa.

We will also have an early morning Board Meeting on March 11, 2010, before the second day of our annual conference begins. We hope to see you there!

Jobmart

Visit our Jobmart at illinoisfloods.org/jobmart.html to view current job openings. Jobmart is a free service to members of IAFSM. If you would like to post a position, send complete information to IAFSM@sbcglobal.net.

Current openings include Disaster Assistance Employees for FEMA Region V.

Top Ten Floodplain Counties in Illinois
(as a percentage of land area):

- Alexander County 56%
- Gallatin County 45.9%
- Whiteside County 40.4%
- Lawrence County 35.5%
- Monroe County 33.6%
- Clinton County 32.4%
- Calhoun County 30.3%
- Scott County 29.8%
- Massac County 28.6%
- Saline County 28.3%
The IAFSM Newsletter is published quarterly for members of the Illinois Association for Floodplain and Stormwater Management. Information and opinions contained herein do not necessarily reflect the views of all members. Items for publication and other editorial matters should be directed to the editor at jmaercleink@v3co.com. To advertise in this newsletter ($100-$200 per year depending on ad size) contact the association at IAFSM@sbcglobal.net.

IAFSM Officers
Chair – Jeff Wickenkamp, Hey & Associates, Inc., jwickenkamp@heyassoc.com
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Past Chair – Stuart Richter, Whiteside County, srichter@whiteside.org
Executive Secretary – Sarah Harbaugh, IAFSM@sbcglobal.net

Special thanks to J&J Enterprises for our beaver, the mascot of surface water managers.

For current Job Postings and CEC Training Opportunities, visit our website at illinoisfloods.org.

Illinois Association for Floodplain and Stormwater Management
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Please notify us of address corrections or changes

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