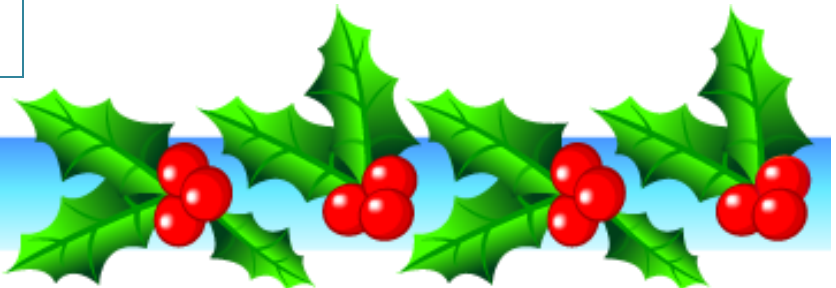
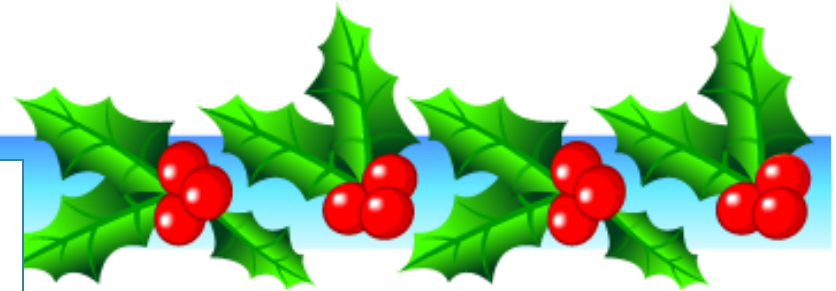




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*We would like  
to wish all of  
our members a  
Happy and  
Safe Holiday  
Season!*





## **FROM THE CHAIR**



*Happy Holidays to all!*

*I would like to thank everyone who attended the fall workshop on October 16th at the Carencro Community Center. A special thanks to David Hiegel and Roberto Ramirez for the presentation of the new Digital Flood Insurance Rate Map/Geographic Information System (DFIRM/GIS) software. The workshop was attended by more than 50 members.*

*On October 15, 2009 a board meeting was held in Carencro, and during that meeting several items were discussed. Our annual conference will be held on April 28 thru 30, 2010 in Shreveport at the Holiday Inn Downtown. It was voted on to raise the conference fee from \$90 to \$120 due to the rising cost of operating a conference. This fee will include a free shirt with early registration. More information on the annual conference will be posted on our website [www.lfma.org](http://www.lfma.org) as it is available. Also, the 2010 mobile workshops were voted on and they will be in the Vidalia area in July and the New Orleans area in October. Darla Duet, our workshop coordinator will be getting with those floodplain managers soon to schedule locations and dates. To date, LFMA has over 355 members.*

*I would personally like to wish each of you a very Merry Christmas and Happy New Year. I look forward to seeing you in April and let's continue to keep Louisiana safe through floodplain management,*

*Bonnie Anderson, CFM  
Chairman*

## *What's happening in your Region..?*



### **Region 1** *(St. Tammany, Orleans, St Bernard, Plaquemines, Jefferson)*

As of November 30, 2009, the floodplain managers of St. Tammany, Orleans, Jefferson, St. Bernard and Plaquemines Parish have all been working hard to keep their flood prevention programs moving forward in a positive direction. The City of New Orleans has announced that Pat Trainor, CFM will be their new floodplain manager. All of the other parish's floodplain managers for Region 1 are certified as well, St. Tammany's Alan Pelegrin, CFM, St. Bernard's Jerry Graves, CFM, Plaquemine's Mike Metcalf, CFM and Jefferson's Tom Rodrigue, CFM. There are presently 134 CFM's in the state, our region has 55.

All eyes will be on St. Tammany Parish in 2010. The parish and communities should be getting their Letters of Final Determinations (LFD) in 2010. That will allow this parish and communities time to look at their present flood prevention ordinances and make changes such as better definitions, higher regulatory standards, ex. freeboard and penalty verbiage for violations. Their new ordinances have to be adopted by the community before the effective date on the map. You will have to send a copy of your proposed ordinance to FEMA Region VI for review. Cindy O'Neal, our State NFIP Coordinator and her staff will be happy to assist in reviewing your proposed flood prevention ordinance as well. Since FEMA has a transitional regional office in New Orleans, Mike Hunnicutt and his staff will be willing to assist all parish and community ordinance reviews.

The network chain in Louisiana, because of LFMA, is strong. If you have a question that arises in your community that you need help in answering, call a friend, call a neighboring floodplain manager. Call Wayne.....

*Submitted by: Wayne Berggren, CFM*

### **Region 2** *(West Feliciana, East Feliciana, St. Helena, East Baton Rouge, West Baton Rouge, Pointe Coupee, Iberville, Ascension, Livingston, Tangipahoa)*

Tangipahoa Parish is waiting on our Letter of Final Determination (LFD) for their DFIRMs, which should be out in January, 2010. The HMGP extended the Road Home Option for up to \$100,000 for elevation or pilot reconstruction for up to 110% of original sq ft. We had a Community Assessment Visit (CAV) June 4<sup>th</sup>. 40 sites were identified, along with 15 substantial damage sites. We expect to resolve all items in January, 2010.

Nic LeBlanc passed his CFM test in July at the Shreveport workshop. Congratulations Nic! We are finalizing our LSU Construction Code Council Grant that was started in 2007 when the state wide building codes went into effect. Our office now performs building inspections for the towns of Kentwood, Roseland, Independence, Amite, Ticfaw, and the Village of Tangipahoa. I will be attending the NFIP class in Alexandria in March and will take the CFM exam. Wish me luck!

*Submitted by: Toni Jo Simon*

**Region 3** *(Assumption, St James, St. John the Baptist, St. Charles, Lafourche, Terrebonne)*

Terrebonne Parish and the City of Houma obtained a Class 7 in the CRS program.

Lafourche Parish is elevating houses with Katrina/Rita HMGP funds. They have submitted grant applications for Gustav/Ike and they are currently being reviewed by GOHSEP. The DFIRM maps have been appealed and FEMA is going over the information we submitted on September 30<sup>th</sup>.

*Submitted by: Darla Duet, C.F.M.*

**Region 4** *(Evangeline, St. Landry, Acadia, Lafayette, St. Martin, Lafayette, Vermilion, Iberia, St. Martin, St. Mary)***REFLECTIONS 2009**

As the year 2009 teeters on the threshold of oblivion and its inevitable and irreversible fate of doom is shackled to eternity, we reflect on the activity generated in our immediate realm with a little apprehension and some appreciation for having survived and for involvement with our counterparts. The year 2009, for the most part, has been a good one when one considers the activity generated in the Hazard Mitigation Grant Program, LCBGD Disaster Recovery Program, and the CIAP Grants the Parish has been awarded and is actively seeking culmination thereto.

The Bayou Sale Ridge Protection Plan, a CWPPRA project, after long delays, may be resurfacing as a viable project. Originally seven miles of shoreline protection have dwindled to approximately three and one half miles because of time delays, a host of pipelines coming ashore and, cost of rock, and new engineering methods adopted. We now have a new project coordinator and a consensus of the landowners involved to get started. The project consists of placing rock intermittently along the shoreline of Cote Blanche Bay to halt shoreline erosion and ridge destruction.

The Community Assessment Visit by FEMA is slowly winding down whereby several non compliant structures will be issued 1316 Citations for failure to comply with the Parishes Flood Damage Prevention Ordinance. Noncompliant Million Dollar Structures at Cypremort Point, and extremely high flood insurance costs related thereto have owners rejecting flood insurance and resorting to self insured means and ways. This activity could be trend setting in Coastal V Flood Zone areas. The 1316 Citation issued on a nonconforming structure is for the life of the structure and /or until remediation of the subject structure is deemed completed.

The new Flood Insurance Rate Maps (DFIRMS) stamped PRELIMINARY, March 31, 2008 will bring relief to coastal land owners and contractors where by the proposed BFE in V Zones has been lowered from 19 feet to 14 feet above sea level and certainly makes sense when compared to our neighboring parishes. Adoption of the (DFIRM) maps has been delayed pending resolution of the City of Morgan City's appeal to FEMA of its DFIRMS

As the countdown continues to the Holiday Season and the rapidly approaching New Year, I say to you Happy Holidays.

*Submitted by: Carol J. Vinning*

**Region 5** *(Beauregard, Allen, Calcasieu, Jefferson Davis, Cameron)*

Recovering from the hurricanes has made our office aware of the multiple floodplain tools that are available. In Calcasieu Parish, we have established our own inter-office “flood library”. This library contains technical bulletins, old and new flood maps, brochures, FEMA publications, our flood study, substantial damage property folders, etc. This referencing library has helped us answer daily questions and resolve floodplain violations. So, we encourage others to establish their own designated space “flood library” so the entire office/agency can utilize it. You can customize it for your own office. Since we are a CRS community, this assists us with compiling documentation for our annual recertification.

*Submitted by: Pam Mattingly, CFM*

**Region 6** *(Winn, Grant, Rapides, LaSalle, Avoyelles, Catahoula, Concordia)*

Funding has been approved by FEMA for two grant applications under Hazard Mitigation Grant Program (HMGP) #1603 in our region. Concordia Parish was approved for \$555,635 to wind retrofit the Courthouse, Emergency Operations Center and Sheriff’s Office and Rapides Parish was approved for \$704,859 to wind retrofit and upgrade roof to the Rapides Parish Coliseum and Exhibition Hall. Rapides Parish has also submitted a grant application under (HMGP) #1786, for an acquisition project for 60 residential homes which is currently under review by GOHSEP. We are also in the process of revising the Parish’s FIRMS. FEMA recently conducted a Community Assessment Visit in Rapides Parish and the City of Alexandria. The City of Alexandria will be hosting the FEMA E273 Course “Managing Floodplain Management through the NFIP” in March, 2010. Registration is limited so register soon.

*Submitted by: Melissa Becker, CFM*

**Region 7** *(Caddo, Bossier, Webster, Claiborne, Lincoln, Bienville, Desoto, Red River, Natchitoches, Sabine)*

Stockwell Place, Brookhaven, Richmond Cove and Lafayette Park are subdivisions located in northeast Bossier City between Flat River and Red Chute Bayou. Red Chute Bayou and Flat River are about 2,000 feet apart. In September of 2008, the City Council for Bossier City adopted new FIRM’s. As with any map change, the SFHA changed to include some areas that previously were in flood zone C. When the resident’s began receiving letters from their mortgage company telling them of their requirement to purchase flood insurance, we received numerous phone calls to ask “what flood zone am I in?”

The month of October 2009 ended very wet for the Shreveport/ Bossier City area. Heavy rain and wind began in the evening hours and into the night on the 28th which added to the problem of already saturated ground. On the 29<sup>th</sup>, flash flooding was a major concern along with 22 tornado warnings in the Louisiana, Texas and Arkansas area. In the end, about 8” of rain fell in 2 days. Flat River and Red Chute Bayou became a major threat to these residents. It’s been reported that the Shreveport/ Bossier City area had the most extensive damage. As the water levels continued to rise it made a lot of people believers that they are in a SFHA and that there is a real possibility that their house might flood. Thanks to great coordination and countless hours of hard work between city officials and Barksdale Air Force Base personnel, not one single home flooded in this area. The bottom line is that it pays to elevate and carry a flood insurance policy even if you think “there is no way I will ever flood.”

*Submitted by: Don Crista*

## FLOOD MAP OPEN HOUSE HELD IN NATCHITOCHESES

The City & Parish of Natchitoches hosted a 4-hour flood map open house in October at the City Planning & Zoning Office in Natchitoches. Juanita Fowler, CFM for the City of Natchitoches stated that the open house was well attended with more than 50 individuals participating during the course of the afternoon event.

The Department of Transportation and Development sponsored the outreach event to help residents prepare for the map changes when they take effect. Residents were able to look at how the preliminary digital flood insurance rate maps will affect individual properties and learn about how the new maps may affect future flood insurance requirements, premiums and building plans. Attendees included city and parish elected officials, land surveyors, engineers, insurance specialists and local residents.

Staff from the University of New Orleans Center for Hazards Assessment, Response and Technology (UNO-CHART) and staff from the LSU Ag Center conducted the event which is available to any non-coastal parish in the state. Cindy O'Neal and staff from the Department of Transportation's Floodplain Mgt. Office in Baton Rouge were on hand to answer questions about the proposed new map changes and provided assistance to participants in identifying individual properties.

FEMA presented the preliminary parish-wide Flood Insurance Study and digital flood insurance rate maps for Natchitoches Parish in June of this year. The study revises and updates the previous flood insurance studies and flood insurance maps. Natchitoches Parish is currently in the 90-day regulatory appeals and protest phase of the remapping project.



*Submitted by: Juanita Fowler, CFM*

### **Region 8**

*(Union, Morehouse, West Carroll, East Carroll, Ouachita, Richland, Madison, Jackson, Caldwell, Franklin, Tensas)*

Ouachita River has finally fallen below flood level after the heavy rains from September and October fell. The river crested about 8 feet above flood stage on November 11<sup>th</sup>. Most flooded bodies of water throughout Region 8 have fallen below flood stage. Now that the water has receded, we can get on to better things. Ouachita Parish has received the new D-FIRM preliminary flood maps and should be entering the 90-day appeal/protest stage any day now.

*Submitted by: Lisa Richardson, CFM*

## **FALL WORKSHOP HIGHLIGHTS**

### **Carencro, LA**



View more pics at  
[www.lfma.org](http://www.lfma.org)

## EXAM OPPORTUNITY

**CFM Exam** will be offered following the E273 "Managing Floodplain Development through the NFIP" course in Alexandria, LA, at the Alexandria City Hall in Convention Hall, March 5, 2010. Please register at [www.floods.org](http://www.floods.org) click on Certification

**You must be pre-registered. Walk-ins NOT accepted.**

### The requirements to maintain your ASFPM CFM Certification are:

- You must earn at least 4 of your required CECs in your first year of the two year period.
- Over the two year period, acquire 16 Continuing Education Credits (CEC's), of which a maximum of 12 can be earned in any one year.
- On or before completion of the two years, submit the renewal form (ASFPM will send you) and the appropriate fee for recertification, furnishing a listing of the training and/or education courses you have completed.



## CFM CORNER

For a current list of ASFPM Certified Floodplain Managers visit:

[www.floods.org/Certification/certlist.asp](http://www.floods.org/Certification/certlist.asp)



### CFM Validation Survey

ASFPM & the Certification Board of Regents are conducting an assessment of the National CFM® Program and Exam to ensure continued quality, consistency, and credibility of our certification. Your assistance is critical to the National CFM® Program.

*Thanks to everyone at LFMA for your support during the loss of my brother-in-law. He was a wonderful person. I wish you all could have known him.*

*Thanks also to all of you who contributed to this and past issues of "Floodwatch". I couldn't do it without you.*

*I wish each of you a Merry Christmas and a Happy New Year!*

*Melissa J. Becker, CFM*



## THE MITIGATION CORNER

By: Michael D. Hunnicutt, CFM

A very little known component of FEMA is the Community Education and Outreach section of the Mitigation Branch, also known as the CEO Group. This group promotes effective hazard mitigation ideas and techniques through community education, outreach, training and coordination with public and private sectors. In addition to the management staff, the CEO Group is comprised of three additional teams or sections, each serving different functions to accomplish the CEO objective. This issue of the “Mitigation Corner” will focus on the functions of the CEO Group and how local officials can use outreach as a tool to better inform the public.

The three teams are the Community Education Team, the Media Team, and the Public Outreach Team. The Community Education Team provides hazard mitigation information and guidance in the DRC’s (Disaster Recovery Centers), other disaster assistance facilities, and FEMA/State venues. This team is mostly in action immediately after a disaster or storm event distributing out FEMA publications and helping disaster victims through the process of applying for FEMA assistance. The Media Team provides media development and support for the Community Education Team, the Public Outreach Team, and other FEMA/State entities. The Public Outreach Team provides information on hazard mitigation techniques and measures in public venues, home improvement stores, state fairs, and building industry events. This is the team that can help local officials with educating the public on Mitigation. This team has set up special events in communities across the State assisting local officials with their needs. FEMA has also used this team to promote building Safer, Smarter and Stronger by using Mitigation Techniques on Television and Radio. If you have specific needs in your community, please contact the Mitigation Office at the number below and we can help tailor a program for Mitigation needs in your community.

FEMA also has a very extensive online library. The FEMA Library is a searchable web-based collection of all publicly accessible FEMA information resources, including: CDs, DVDs, VHS tapes, audio tapes, disability resources, posters and display items, brochures, publications, guidance and policy papers, program regulations and guidelines, forms, slide presentations, and some documents. This website is [www.fema.gov/library](http://www.fema.gov/library).

FEMA’s mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards. If you have any questions about the Mitigation Section of FEMA or any of its programs, you can contact Michael Hunnicutt, CFM, Deputy Section Chief, Hazard Mitigation Division, NFIP/Compliance, FEMA, DHS, at 504-762-2298 or visit FEMA website at [www.fema.gov](http://www.fema.gov).

## E273 Managing Floodplain Development through the NFIP

Hosted by:

*The City of Alexandria*



**March 1 – 5, 2010**  
**8:00 – 5:00**

**To register call Susan Veillon 225-274-4354**  
**Space is limited.**

**CFM Exam will be offered on**  
**Friday, March 5, 2010**



### 2010 Conference in Oklahoma City

The next Annual Conference of the Association of State Floodplain Managers will be held May 16-21, 2010, in Oklahoma City, Oklahoma. This is the year's foremost floodplain management gathering, attracting well over 1,000 professionals from all disciplines and practices related to the science and management of floodprone lands and the impacts of flooding. The theme, "Building Blocks of Floodplain Management," will be explored in large and small group presentations and discussions, training, workshops, and informal networking.

Access all conference information at  
<http://www.floods.org/index.asp?menuid=381&firstlevelmenuid=181&siteid=1>



## 2010

### Calendar of Events

**January 22, 2010**

LFMA Board Meeting  
 Shreveport, LA

**March 1 – 5, 2010**

Managing Floodplain Development through the NFIP Course (E273)  
 Alexandria, LA

**March 2 - 5, 2010**

Int'l LIDAR Mapping Forum Conference & Exhibition  
 Denver, CO

**April 10 – 13, 2010**

APA National Planning Conference  
 New Orleans, LA

**April 11- 14, 2010**

NFIP National Flood Conference  
 San Diego, CA

**April 28 – 30, 2010**

LFMA 27<sup>th</sup> Annual Technical & Business Conference  
 Shreveport, LA

**May 16 – 21, 2010**

ASFPM 34<sup>th</sup> Annual National Conference  
 Oklahoma City, OK

**August 23 – 27, 2010**

Watershed Management Conference  
 Madison, WI

**November 2 – 5, 2010**

Floodplain Management Annual Conference  
 Henderson, NV



## Judge rules Army Corps liable in Katrina flooding



PHOTO: ALEX BRANDON/AP

A judge for the U.S. District Court for the Eastern District of Louisiana ruled in mid November that the U.S. Army of Corps of Engineers was guilty of “gross negligence” for its failure to maintain the Mississippi River-Gulf Outlet (MR-GO) shipping channel. That negligence, he ruled, led to breaches in the levees that eventually flooded New Orleans’ Lower 9<sup>th</sup> Ward and neighboring St. Bernard Parish after Hurricane Katrina in 2005.

The 76-mile channel was dug in the 1960s as a navigational short-cut between the Gulf of Mexico and the Mississippi River at New Orleans. Judge Stanwood Duval, Jr., found that, in its 1976 environmental review (required by the National Environmental Policy Act) the Corps did not adequately consider the environmental impacts it knew were likely to occur as a result of the MR-GO. Further, the Corps did not revisit the environmental impacts even after it was clear the canal was causing damage.

Government experts argued the levees and floodwalls would have failed during Katrina even if the MR-GO channel had never been dug. However, Duval ruled that the Corps’ failure to rehabilitate the deteriorating MR-GO “doomed the channel to grow to two to three times its design width” and that “created a more forceful frontal wave attack on the levee” that protected parts of New Orleans.

Duval further ruled that a law protecting the government from lawsuits for the failure of flood control measures did not apply to the MR-GO, because it is a navigation channel rather than a part of a flood control system.

The lawsuit was the first major case against the federal government over Katrina flooding to go to trial. The government is expected to appeal the ruling to the 5<sup>th</sup> U.S. Circuit Court of Appeals in New Orleans, where some legal experts believe, the Corps may find a more sympathetic audience.

➤➤➤ Read the opinion at <http://www.laed.uscourts.gov/CanalCases/Orders/19415.pdf>

## VORTEX VALVES: FLOOD PREVENTION TOOLS CATCHING ON IN UK DAM PROJECTS

*By Robert Y.G. Andoh*

The 100,000 or so dams that operate in the U.S. serve a variety of purposes. More than 30 percent are used primarily for recreation. About a fifth of the dams were built primarily for fire protection. The third most popular use is for flood control (16 percent), followed by irrigation, water supply, hydroelectric, fish and wildlife, mining, debris control and navigation.

Dams used for flood control are particularly important for public safety purposes, because if they fail the runaway floodwaters cause extensive damage to local communities. Among the more destructive dam failures in the U.S. were two that took place in the 1970s – in Buffalo Creek, W.V., where a 16-mile valley flooded, killing 125 people; and near Rexford, Idaho, where the failure of the Teton Dam caused up to \$2 billion in property damage and killed 11.

To protect against downstream flooding in heavy rain events, engineers typically deploy two principal strategies. They build up the communities' flood defenses and/or they hold back the flood waters upstream.

Building up a community's defenses is an expensive and disruptive proposition. Municipalities must enlarge their existing conveyance channels or build up protective walls to ensure that heavy flows don't flood local streets. They need to create higher embankments or shored-up levees. But that can be a challenge in many older urban areas, where residential and commercial projects have been built close to the channels. To ensure adequate protection, local leaders often have to resort to land takings.

Holding back flows is usually the more efficient, cost-effective way. To allow for a regulated flow downstream of the dam, and to protect against excessive, damaging flows, flood scheme designers deploy flow control devices upstream of dams. These devices contain an orifice sized to allow a calculated flow that will

proceed through the dam and get slowly released during a major flood threat. But the downside of holding back flows is that the practice creates floods on the other side of the dam. This creates a problem for farmers upstream of the dam: They don't want their land to flood every time it rains. And it often requires municipalities to resort to additional land takings of developments that fall within the expanded floodplain.

The challenge is to deploy a flow control scheme that balances the need to stop the damaging floods downstream of the dam and limit the protective flooding on the upstream side. In Europe, a number of dam projects have used vortex valves to help strike this balance. These valves are currently used in the United States for flow control purposes in urban drains and ponds, but they haven't been applied to dam projects.

Vortex valves act like natural hydraulic brakes. Designed with a snail or conical shape, 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.

Under low-flow conditions, the valve acts as a large orifice where water and debris pass directly from the inlet to the outlet. As flow increases and reaches the flush flow point, high peripheral velocities start to throttle the flow. As pressure increases, an air core, accompanied by substantial backpressure, effectively restricts the flow through the outlet aperture.

Examples of the use of vortex valves in dam projects can be found in Weedon Bec and Glasgow in the United Kingdom. Both projects have deployed vortex flow control valves

supplied by Hydro International Inc. ([www.hydro-international.biz](http://www.hydro-international.biz)).

#### **Weedon Bec, UK**

The village of Weedon Bec, situated west of Northampton in the UK, suffered serious flooding from the River Nene during the Easter of 1998. The village had no formal flood defenses and there was a risk of flooding once every three years with some 95 properties at risk of flooding. The main cause of flooding was the limited capacity of culverts under a railway embankment downstream of the village and at a road bridge within the village.

The project team considered a range of options and it became evident that the most viable option was the provision of upstream flood storage because improving the capacity of the channel to pass flood flows required the existing river channel to be doubled in size, producing unacceptable disruption and loss of land. The cost of enlarging the road bridge and railway culvert would also have been very high.

Enlarging the channel would have had the effect of transferring the problem further downstream as this produced an intolerable increase in downstream flows through several villages and the town of Northampton, which were already at risk of flooding. Containment of floodwater within the river channel would also have required construction of flood walls through 30 private gardens, the costs of which were very high and the resulting disruption to residents unacceptable. This coupled with potential problems with access for future inspection and maintenance made the channel enlarging option unattractive.

A site was identified less than a mile upstream of the village where the river flows through a well-defined valley with little habitation and this formed a suitable location for implementing a flood storage scheme. The scheme which was completed in the fall of 2002 comprises an earth fill dam with a maximum height of 22 feet and a crest length of just under 500 yards. The storage area occupies the valleys of the Newnham and Everdon arms of the River Nene providing a flood storage area of approximately

91 acres and volume of approximately 215 million gallons at full capacity.

The flow from the reservoir passes through a 7.8-foot-wide-by-6.9-foot-high box culvert constructed on the line of the original river channel. A conical-type (C-type) vortex flow control with outlet aperture of 5.7 feet and overall length and height in excess of 16 feet was installed to attenuate the peak flow through Weedon Bec from 7,000 gallons per second (605 mgd or 935.8 cfs) to the in-bank capacity of the river channel through the village of 2,600 gallons per second (225 mgd or 347.6 cfs) during a 50-year event.

A C-type vortex valve was chosen on the basis of its simplicity, low maintenance requirements and relatively lower cost for this site. Other alternative options for controlling flows through the culvert such as a fixed orifice, an electrical or hydraulically actuated penstock or a float operated radial gate were considered but discounted because of the following reasons:

- There is no power supply near to the site for automatic gate operation and to provide this added greatly to the scheme cost. There would also be a risk of power or equipment failure during a flood event.
- Arrangements to allow manual operation of penstocks during a flood event were not considered to be of practical benefit because it would be unrealistic to expect maintenance staff to operate them safely during a flood event. The penstock would therefore, in effect, act as a fixed orifice.
- A fixed orifice would cause unnecessary, frequent and significant flooding upstream of the dam which would limit use of the land for agriculture. This was unacceptable to the affected landowners.
- A float operated radial gate across the culvert exit controlled by downstream water level was rejected because it would have pressurized the culvert and required maintenance.

- There was also the a risk of failure of operation of equipment with moving parts that only came into operation only intermittently and this would impose a significant maintenance requirement, which the responsible Agency wished to minimize.

An essential requirement of the scheme was environmental sensitivity, adaptability the ability to allow the passage of both fish and small aquatic mammals through the culvert and control structure under normal operating conditions. The unique two-stage head-flow characteristics for the vortex valve, which in effect meant it operated like a large orifice with unimpeded flows under normal flow conditions, made it well suited to this application. The unit installed at Weedon Dam has the facility to adjust the controlled outflow between just over 2,000 (172.8 mgd or 267.4 cfs) to 3,000 gallons per second (259.2 mgd or 401 cfs) via the use of removable stop logs on its intake. This provides flexibility and the ability to adapt flows in response to major changes in the hydrological characteristics of the catchment such as impacts of climate change.

#### **City of Glasgow, Scotland**

Another example of the use of vortex valves in an urban drainage context to address space constraint issues is the city of Glasgow's White Cart Water Flood Prevention Scheme. The project, currently under way, is Scotland's largest Flood Prevention Scheme, designed to protect 1,750 homes and businesses from flooding.

For nearly a century the White Cart Water has inflicted serious flooding on homes and other properties on the south side of Glasgow. This shallow, fast flowing river is prone to flash flooding to the extent that 12 hours of rain can

cause water levels to rise by more than 19 feet. Over 20 significant floods have taken place since 1908 and in 1984 more than 500 homes were inundated.

The solution involved the formation of three flood storage areas upstream of the city to temporarily hold back the bulk of floodwater generated by extreme rainfall and control the release of water passing downstream through the city to an acceptable level. The general criterion adopted for design was that each pond would fill to its top water level during the 1-in-200-year flood event.

By using vortex valves as opposed to traditional flow controls such as orifice plates, this allowed the project team to significantly reduce the areal extent of the water retention areas on sites with little available land.

#### **Conclusions**

Vortex valves help provide a high degree of flexibility in the design of stormwater management systems. Rather than send flows downstream to be dealt with later, vortex valves regulate flows and allow drainage systems to distribute them in a more natural manner.

A number of case studies have been described that show the utilization of these valves over a wide range of flow control duties – from controlling flows from catch basins into collector sewers to controlling dammed flows on rivers to alleviate flooding in a city. 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. Vortex valves illustrate how those plans can work.

*Robert Y.G. Andoh is director of innovation for Hydro International Inc.*

## LFMA Recipe Roundup

### Great Grandmothers Sugar Cookies

#### Ingredients

2 cups sugar  
2 eggs  
2 teaspoons lemon juice  
2 teaspoons nutmeg  
1 cup shortening  
1 cup sour cream  
4 cups flour  
1 teaspoon baking powder  
1 teaspoon soda  
1 teaspoon salt



#### Directions

Combine all ingredients. Chill overnight. Roll to 1/4 inch thickness. Cut your shapes and bake at 350 degrees 8 to 10 minutes.

### "Night Before Christmas" Coffee Cake

#### Ingredients

1/2 cup sugar  
1/4 cup butter  
2 beaten eggs  
1/2 cup warm milk  
1 pkg yeast (2 teaspoons bulk yeast) dissolved in 3 tablespoons warm water  
3 cups flour  
1 teaspoon salt  
1/2 teaspoon vanilla  
Topping:  
2/3 cup sugar  
1 tablespoon cinnamon  
4 tablespoons melted butter or margarine  
1/2 cup nuts or maraschino cherries, candied red or green cherries

#### Directions

Cream together sugar and butter. Then add eggs, milk, 1 package of yeast (2 tablespoons bulk yeast) dissolved in 3 tablespoons of warm water, flour, salt and vanilla. Beat all of these ingredients together. Then set dough aside and let it rise, until double in size. When your coffee cake dough has risen to double the size (this may take about 2 hours) put it in a 9x13" greased pan and spread with topping; Combine sugar, cinnamon, melted butter and nuts (you can use maraschino cherries or candied red and green cherries if you don't like nuts) Now place in a cold oven and leave it in there overnight to rise. The next morning turn oven to 350 degrees and bake for 1/2 hour. Take out and serve warm. This makes a large coffee cake or you can put the dough in two round pans instead

For other Christmas recipes: <http://www.northpole.com/Kitchen/Cookbook>



The LFMA Membership directory is maintained by James Demouchet. (318) 226-6934 or email at [jdemouchet@caddo.org](mailto:jdemouchet@caddo.org)

**IT'S TIME TO RENEW!**  
**LFMA 2010 MEMBERSHIP DUES - \$30.00**

PLEASE REMIT TO:  
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**UPDATE YOUR CONTACT INFORMATION!**

Please complete the following form anytime you have a change in your information and submit to James.

Company  Member

Address

City  State

Contact  Phone

Title  Fax

Region  E-mail

*Note from the Editor:*

*If you have anything that you would like to share with other members of LFMA, please email me at [mbecker@rapc.info](mailto:mbecker@rapc.info).*

*Thanks,  
Melissa Becker*

## Some Big Changes may be coming for the NFIP

FEMA is always striving to improve our programs and as part of that effort, we are currently gathering feedback from National Flood Insurance Program stakeholders to gain input on the challenges related to the National Flood Insurance Program (NFIP) and possible solutions to those challenges.

The NFIP is a Federal program that was created by Congress in 1968. The program was designed to ensure that communities across the country have access to affordable flood insurance as well as encourage community floodplain management to reduce future flood damage.

Flooding is the nation's most common natural disaster, and can happen in every region, state, and territory across the U.S. While some floods develop over extended periods of precipitation, flash floods can occur quickly and with no warning. It only takes a few inches of water to potentially cause extensive damage to a home or structure.

FEMA kicked off a 30 day comment period with the launch of a two day listening session that began on November 5, 2009. FEMA invited nearly 175 stakeholders representing environmental and historic preservation groups, fair housing groups, and representatives from the lending, insurance, emergency management, real estate, land use, planning, and engineering industries, as well as representatives from State, Local and Tribal governments.

Content Analysis of Breakout Session Comments: ([PDF](#) 256KB, [TXT](#) 11KB)

FEMA's NFIP listening sessions and public comment period will allow FEMA to gain input on the various issues and programs related to the NFIP, such as flood map modernization updates, reducing repetitive loss properties, and other program topics.

Your comments will be included in a final compendium of input.

For more information on the National Flood Insurance Program please visit [www.floodsmart.gov](http://www.floodsmart.gov).

## President Declares Major Disaster for the State of Louisiana



WASHINGTON, D.C. –  
(December 10, 2009)

The head of the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) today announced that federal disaster aid has been made available for the State of Louisiana to supplement state and local recovery efforts area struck by severe storms, tornadoes, and flooding during the period of October 29 to November 3, 2009.

Federal funding is available to state and eligible local governments and certain private nonprofit organizations on a cost-sharing basis for emergency work and the repair or replacement of facilities damaged by the severe storms, tornadoes, and flooding in the parishes of Beauregard, Bossier, Caldwell, Claiborne, De Soto, Natchitoches, Ouachita, Union, and Webster.

Federal funding is also available on a cost-sharing basis for hazard mitigation measures for all counties and tribes within the state.

Gerard M. Stolar has been named the federal coordinating officer for federal recovery operations in the affected area. Stolar said additional designations may be made at a later date if requested by the state and warranted by the results of further damage assessments.

FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

Stay informed of FEMA's activities online: videos and podcast available at [www.fema.gov/medialibrary](http://www.fema.gov/medialibrary) and [www.youtube.com/fema](http://www.youtube.com/fema); follow on Twitter at [www.twitter.com/femainfocus](http://www.twitter.com/femainfocus) and on FaceBook at [www.facebook.com/fema](http://www.facebook.com/fema)

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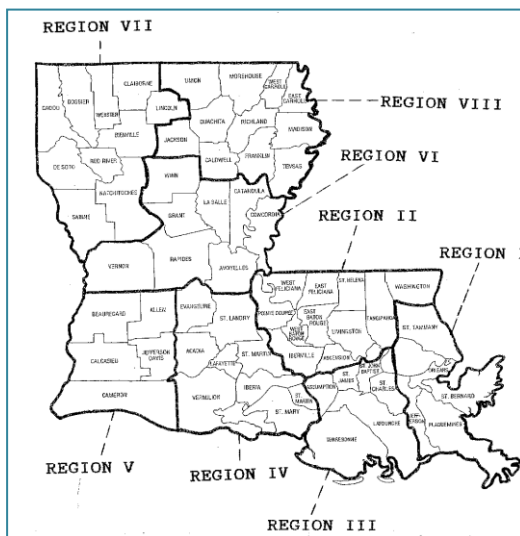
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