

**DELAWARE RIVER BASIN COMMISSION
FLOOD ADVISORY COMMITTEE SUMMARY**

February 7, 2007

The February 7, 2007 Flood Advisory Committee (FAC) meeting began at 10:00 a.m. at the Commission's office (DRBC) in West Trenton, NJ. Peter Gabrielsen of the National Weather Service chaired the meeting.

A. Introductions and Review of the Draft Minutes from the November 15th Meeting

No comments were made regarding the draft minutes. The approved summary will soon be posted on the DRBC web site. Tapes of the meeting may be reviewed upon request.

B. Hydrologic Conditions Report

A presentation of the current hydrologic conditions was given by Mr. Quinodoz. As of February 6th, precipitation in the basin has been below normal during the past month; from 1-3" total. The totals equate to 25-50% of normal precipitation.

Precipitation totals for the 7 day time-period ending on February 6, 2007, range from 0.1-0.25" for the basin.

Flash flood guidance from the NWS was presented which is the amount of 12 hour precipitation that would need to occur to cause local flash flooding. As of February 6th, due to antecedent conditions, different areas of the basin would need from 2.6" to 4.2" over a 12 hour period to result in flash floods.

C. Status of Flood Analysis Model Proposal

DRBC staff have been working with USGS, Corps of Engineers (HEC office in Davis, CA and Philadelphia office) and the National Weather Service to develop a scope of work which would combine the various tools and efforts of the three agencies. The National Weather Service has said that they are not in a position to lead model development at this time, but they are willing to contribute in an advisory role. Currently, DRBC Staff are evaluating the two proposals submitted by USGS and the Corps. The Corps approach would be to apply the Hydrologic Modeling System (HEC-HMS) for the rainfall-runoff model, the reservoir simulation module (HEC-ResSim) for reservoir modeling and flow routing, and the watershed analysis tool (HEC-WAT) for the user interface. The USGS approach would include development of the rainfall/runoff module using USGS's precipitation runoff modeling system (PRMS), and reservoir simulation using either HEC-ResSim or Riverware. The approach would also include integration using the modular modeling system (MMS) and development of a graphical user interface. (Note: The agencies have worked to develop a single joint scope of work since the February meeting).

Action Item:

1. DRBC will report back to FAC on the status of this model proposal at its May 2007 meeting.

D. Interstate Flood Mitigation Task Force

The Interstate Flood Mitigation Task Force was convened in October and met on four occasions prior to releasing its "Preliminary Action Plan – Public Review Draft dated January 30, 2007. In addition to the four task force meetings, many focus area group meetings and phone conferences were held in order to help draft the 44 recommendations. The focus area groups are as follows: Reservoir Operations, Structural/NonStructural Measures, Stormwater Management, Floodplain Mapping, Floodplain Regulations, and Flood Warning.

Handout D-1 is the Executive Summary of the Report. Handout D-2 is a list of all 44 Recommendations.

Flood Warning Recommendations Summary: The Flood Warning Section and Floodplain Mapping Sections of the report were handed out for the Advisory Committee's review. Peter Gabrielsen explained that some of the Flood Warning recommendations, even though they are in the same area, such as improving gaging, the recommendations are listed separately in order to allow different program areas to receive different funding levels in different areas.

Bob Tudor mentioned that it will be important going forward to complete the Implementation Considerations section of the report. This section will identify recommendations that should be done sooner rather than later since resources are limited.

It is the desire of the FAC to take the Flood Warning section of the report and begin to implement some of the sections of the report. A strategy would need to be put together on how best to accomplish this given some regional boundaries with federal and state agencies.

Upcoming Public Meetings: DRBC is currently accepting public comment. Written comment will be accepted until February 28, 2007. In addition, four public meetings are scheduled; Delhi, NY – February 8, 2007; Easton, PA – February 13, 2007; Wilmington, DE – February 15, 2007 and Ewing, NJ – February 20, 2007. Following all public comment, the task force will reconvene and amend the public review draft to reflect comment.

Action Item:

1. If any Task Force members have specific priorities, they would like put forward in the report or if there are any comments in general regarding the report, they are to send their comments to Peter Gabrielsen and Laura Tessieri.
2. At the May meeting, a strategy to implement some of the Flood Warning recommendations will be presented.

E. Opportunity for Public and Interested Party Comments

Questions and comments were received from residents and others. The following issues were raised during the public comment period:

- One question was asked regarding the roll-out of the public meetings for the Flood Mitigation Task Force. It was asked how public comment would be recorded and what form the upcoming meetings would take?
- Jay McLaughlin with Waste Management coordinated debris removal for the past three floods. He stated that the morale of the river towns is down. He urged the Committee to take an active position in terms of the river regarding flooding instead of a passive one.

F. Status of Delaware River Flood Risk Verification Project

(Jason Miller, USACE & Kim Dunn, Dewberry)

Jason Miller and Kim Dunn presented information in order to follow up to the presentation given by Jon Janowicz, FEMA Region III, at the August 2006 FAC meeting. Jason Miller described how they compared the high water marks from USGS for the April 2005 event to the effective Flood Insurance Studies (FIS) in PA for the Delaware River. The effective FIS in PA are dated 1996 and were developed by the Philadelphia Corps of Engineers Office. The comparison was not to identify flood frequencies but instead to verify consistency overall. The comparison stretched from Trenton to the Delaware Water Gap. Overall, consistency was good, but a few isolated areas were identified with discrepancies large enough to warrant further investigation. Two areas were near bridges and another was a one mile stretch located in Lower Mount Bethel, PA. The Corps first converted the hydraulic models from HEC-2 to HEC-RAS. HEC-RAS has more sophisticated bridge modeling routines and this took care of the two inconsistencies at the bridges. At the area in Lower Mount Bethel, 3 new survey cross-sections were obtained and incorporated into the modeling. The cross sections do not appear to be causing the discrepancies, so the Corps is still investigating why the inconsistency exists.

Kim Dunn gave an update on the post-flood verification activities ongoing in FEMA Region II and III. One effort is what Jason just described. Another effort in FEMA Region III is in collaboration with PA USGS. An updated gage analysis is ongoing in Upper Susquehanna and Delaware Basins. The main stem of the Delaware will not be included, but the major tributaries would be. A draft analysis of 40 gages has been prepared and is under review with USGS and FEMA. In addition, they are working on developing regression equations in order to estimate flood flows on ungaged streams in that area. A draft can be expected by the end of March.

An effort in FEMA Region II is under their Hazard Mitigation Technical Assistance Program. This task is for URS and Dewberry to complete new hydrologic and hydraulic analysis in the Delaware and Susquehanna watersheds in NY State. The effort is just beginning. FEMA Region II and III have asked Kim Dunn to help coordinate and keep things consistent across state and Region boundaries as all studies get updated.

G. Status of Delaware River Mapping Coordination

(John Moyle, NJDEP)

Following the Governor's Task Force Report in NJ, NJ put some funding aside for Map Modernization. In addition to the FEMA Map Modernization process, NJ provided additional funding in order to reevaluate hydrology and hydraulics associated with the mapping for the main stem Delaware on the NJ side. A work group has been formed that is coordinating mapping efforts. The coordinating work group consists of NJDEP, FEMA Region II, FEMA Region III, USGS, Corps and DRBC to make sure that at the end of the day we are all on the same page. NJDEP entered into an agreement with FEMA about a year ago and the contract for the work was signed on January 22, 2007. FEMA hired Medina Consultants to redo the hydraulics and mapping for the main stem Delaware below Port Jervis. Currently, USGS and the Corps are reevaluating the hydrology in light of the last three storms to make sure that there is not a difference in the discharges. NY USGS is also being included to make sure everyone agrees on the flow coming through Port Jervis, NY. A consultant is looking at some of the cross-sections dated back to the early 1970's, supplemented with cross sections in the 1980's and is looking at additional areas that may be in need of supplemental cross sections. John Scordato is coordinating LiDAR efforts with the consultant. The Highlands Commission is flying parts of Sussex and Hunterdon County. The anticipated timeframe is about a year to complete. Hydrology should be complete within the next few months.

H. Report from PA Map Modernization Advisory Committee Meeting

(Kerry Wilson, PADCED)

Kerry Wilson and Dan Fitzpatrick, Pennsylvania Department of Community and Economic Development, is the state coordinating agency for the National Flood Insurance Program in PA. The Map Modernization Program is a national program undertaking a huge effort in modernizing flood maps throughout the country. In PA, there are about 2500 municipalities. The Map Modernization advising committee in PA formed to coordinate efforts regarding map modernization and attempting to bring together various efforts in PA to try to help enhance map modernization in PA. Members include federal, state and local agencies. Some partnerships have been formed. For example, PA Map has been able to partner with FEMA to obtain some LiDAR information.

Eric Jespersion, president of PA MAGIC, said that PA MAGIC is a consortium of public and private groups that have come together to enhance GIS applications in the state. The Rendell Administration just authorized continuation of LiDAR funding so that the whole state will have coverage in 2009. The Delaware River Basin section of the state is the last section scheduled to be flown. The anticipated date for flying the DRB is 2008. The LiDAR is being flown at 2' contours and where funding allows, orthoimagery is collected and the LiDAR and imagery are being processed together using the LiDAR DEM to rectify the ortho and then using the Orthos to create breaklines for the LiDAR. This has slowed down production of both products, with the anticipation of a better product in the end. About a year is needed from data collection to production for the maps.

Additional Items for Discussion:

Inundation Mapping:

The NWS, as a result of Hurricane Katrina, received money in cooperation with FEMA to look at taking updated GIS maps and project flood levels onto them when hydraulically and hydrologically accurate to produce static maps for inundation available on their website. Six states were involved in the Gulf States. The NWS has also produced some dynamic maps in coordination with USGS in North Carolina. The real-time application proved to be too difficult and not feasible in terms of server capacity. The Coastal Services Center in Charleston, SC is working to lay out ability to inventory and pre-calculate for certain elevations at locations. Therefore, it would be a static database that would be pre-calculated and driven for service delivery. The NWS is also working with the Susquehanna basin in the Binghamton area.

It was asked what needs to be done in order to make this capability applicable to the main stem Delaware. Peter Gabrielsen said that the maps need to be validated to determine that the contour intervals are accurate to show impacts of flooding. For example, if you have 5' contour intervals and a flood occurs at 10' – that information is very vague. It would be helpful if NWS sat down with the Map Modernization process and cross walked the forecast points with the maps. Also, additional inundation levels need to be run in the map modernization process, for example to identify the 18', 19', 20' area that would be inundated. In addition, the proper vertical datum conversion from NGVD 29 to NGVD 88 needs to be done. And, finally – the NWS needs to have the server space to lay this information on. The NWS is building the infrastructure right now in the AHPS page with a navigation tool. Once the Map Modernization is complete, implementation seems to be fairly realistic.

These maps could also be a planning tool to be used to implement Reverse 911.

Action Item:

1. Peter Gabrielsen could provide a briefing at the next meeting on how the NWS is interfacing with FEMA Map Modernization for river forecasting. Hurricane supplemental will be discussed in addition to what would need to be done to make this a reality in the Delaware Basin.

Headwater Guidance:

MARFC is planning to upgrade the headwater guidance product. Currently, the guidance tells you how much rain it will take to initiate flooding. In the future, they plan to tell how much it will take to initiate moderate and major flooding.

Lycoming County:

Kerry Wilson Lycoming has a partnership with NWS to develop a joint flood warning program with the County. This has been in place since the 1970's and could perhaps be used as a prototype for other areas. (Kerry Wilson)

LiDAR in PA:

Problems may exist in the Delaware basin portion of PA because the LiDAR is expected to be flown after the Map Modernization comes through. (Kerry Wilson)

NRCS Update:

PA –Emergency Watershed funding, statewide funding is allocated at \$6M. This money is to be used primarily for streambank stabilization and debris removal. Currently, NRCS is looking at 40 or 50 sites. NY –Emergency Watershed funding, statewide funding is allocated at \$10-12M. Most is expected to be allocated in the Delaware Basin.

Watershed program – used to fund Neshaminy project. The House zeroed out the watershed program, so all federal funding in the Neshaminy project would cease if this was passed. Congress has restored in recent years, but we will need to wait to see what the Senate plans to do.

DRBC-AHPS e-mail notification system:

Currently, an ongoing problem with the State of NJ server is causing some blips. John Yagecic, DRBC, plans to migrate all users off that program and onto the RSS feed Laurie Hogan spoke about at the last meeting. None of the free available feeds meet currently meet the desired requirements, so the NWS is currently evaluating pay feeds and as soon as they have identified a feed to recommend, they will work to migrate users onto that superior system.

I. Next Meeting

The next meeting was scheduled for Wednesday, May 2, 2007 at 10:00 a.m.

**FLOOD ADVISORY COMMITTEE
ATTENDANCE**

February 7, 2007

NAME	AGENCY
AHNERT, Peter	National Weather Service (NWS)
DUNN, Kim	Dewberry
FITZPATRICK, Dan	Pennsylvania Department of Community and Economic Development (PA DCED)
GABRIELSEN, Peter	NWS – Eastern Region Headquarters
HAINLY, Bob	United States Geological Survey (USGS) - PA
JESPERSON, Eric	Pennsylvania Mapping and Geographic Information Consortium (PA MAGIC)
MCGLOUGHLIN, Jay	Waste Management
MILLER, Jason	United States Army Corps of Engineers
MOYLE, John	New Jersey Department of Environmental Protection (NJ DEP)
NICKELSBURG, Walt	NWS, Mount Holly Office
QUINODOZ, Hernan	DRBC
REUBER, Michael	National Park Service – Upper Delaware Scenic and Recreational River
RUPERT, Clarke	DRBC
SCHOPP, Bob	USGS
SCORDATO, John	NJ DEP
STEIGERWALD, Scott	Pennsylvania Department of Environmental Protection
TESSIERI, Laura	DRBC
TRACEY, Celeste	Delaware River Greenway Partnership
WATSON, Barbara	NWS, Binghamton Office
YAGECIC, John	DRBC
ZAGONE, Joseph N.	Department of Homeland Security – Federal Emergency Management Agency - Reg. III