Maryland’s Innovative Mapping Process

ASFPM / Kansas City
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Bio Addition, Revision or Confession ....
Punxsutawney native!
On every Feb 2nd

- You can now tell your friends that you know someone from Punxsutawney and
- After today – you can think about floodplains and maybe use some of this presentation to use as a solution for one of your local mapping or modeling problems
Punxsutawney, Pennsylvania

- A small town with a big name and ...

**A Floodplain**

And guess who lived in the floodplain behind a Corps levee and thought it would protect us from flooding in 1972?

*Note: Our brick house was elevated by the original builder is the 1920’s above the floodplain (even if there wasn’t one defined), but we had a basement / or in this case a swimming pool. (1st lesson)*
Fast Forward 25 years later ...

State Coordinator in 2008 with an Attitude!
MD’s Focus on Map MOD in 2006

- Join the rush to replace our paper maps with a “digital” product
- Use the State’s new LiDAR for topo (thanks to Maryland DNR)/sea-level
- Update the (circa 1984) Detailed Models
- Create New Models in Approximate A-Zones
- Incorporate the products into the State and local permitting process
Question?

- How sophisticated was your cell phone in 2006?
What’s been Innovative Along the Way

- Collect Bridge and Culvert Data Digitally in 20 min (required a GPS, camera, survey equipment, etc) 
  and data migration ...
- No Way! / Developed a Bridge tool (see Norfolk presentation in 2006)
- All Models Updated and Georeferenced as HEC-RAS Models (since 2008)
- Riverine A-Zones created as model backed using same field data collection and georeferencing process
- All Effective models (Zone A and AE) are posted and available for download
- Created a web site: mdfloodmaps.com
Maryland Bridge Tool
(because no LiDAR under road)

Data Collection for 8000 + Stream Crossings

- Relative dimensions
- Structure Info
- Piers
- Entrance parameters
- Photographs

- Bridge Viewer (on web)
Paper Space versus Georeferenced HEC-RAS
Georeferenced Floodplain Models
WSEL = 316.3 ft
Depth of flooding = 6 ft

WSEL = 316.3 ft
Depth of flooding = 2 ft
What are the benefits

- More Information readily available at local level
  - (A Zones with water surface elevations)
  - Data Available for SHMO for BC
  - Water Surface Elevations Available to locals for Building Additions and Permits

- Maryland’s A-Zone models have been accepted for LOMA’s
  (considering a process to transfer the data onto Elevation Certificates)
More benefits

- Data Consistent and Available
- At the end of current production schedule - 22 of 24 Counties will be completed
  (County 23 and 24 are partials)
- (yes, many of your Watershed districts are larger !)
Still More benefits

- Modeling & Mapping Data Used in State Hazard Mitigation Plan (MEMA) – lower costs/ better data/ level 2 results
Interagency Collaboration

- Other Partners Coming forward
  - USFWS used data for fish blockage assessment and preliminary stream stability index
  - SHA has piloted an analysis of road network vulnerability (several counties per year)
  - Currently looking at e-Collaboration for other permitting efforts with Maryland DNR, MHT, Critical Areas, and U.S. Army Corps of Engineers (Baltimore District)
Needed Way to Distribute Data

- Communicate Mapping Changes
- Convey Mapping Release Schedules
- House all the Data
- Distribute the Models
- Display Information
- Incorporate and Display Other Informative StateGIS Products

mdfloodmaps.com

(domain name includes .org and .net)
>` Data Download
>` GIS Data Integration

This tool is designed to aid you in researching your flood risk in the state of Maryland.

Content on this site is typically updated with in a 30 days of any maps or data released by FEMA, so please check back as the status of your county may have changed. It is important to investigate your flood risk status and contact your insurance agent to make the necessary modifications to your coverage. A schedule for tentative county effective dates can be found [here](#).
At Yesterday’s FEMA Showcase

(Rick)“Wouldn’t it be nice one day to click on a cross-section on a map and be able to download a model”....
Floodplain with Cross Sections: Zone A and AE With Flood Elevations

> 1200 Data Models for Download

Note: Structure Info

Models Posted
At Yesterday’s FEMA Showcase

(Rick) “Wouldn’t it be nice one day to click on a cross-section on a map and be able to download a model”....

• (Maryland) Can we add timely and responsive to innovative?
Floodplain with State Tax Map Parcels (ties to State database)
Resiliency: Sea-Level Rise & Floodplain

Additional State GIS Data Overlays on Website for demo Not Analysis
Still on mdfloodmaps web site and pulling in other data sets & combining layers !!!
Just Added a Mitigation Component

Open Carousel
Risk Map Data
(where available)
mitigation toolbar
What’s Next

- Library has been built ....(now what)
- Want to keep the models current ("Live Models")

**FP models always need to be updated**
- Integrate the State and local permit process into maintaining the models
- Keep the lines of communication (and model info out of the “old” stovepipe mentality) **Example:** “I got my permit - I don’t need a LOMA.”
- State’s Goal is to Exchange (modeling) info at the State, Federal, and local levels.
Conclusion

- Maryland would like to define Innovative mapping on the basis of what we All do Next!

- Keep those blue arrows coming Everywhere!
Questions?

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Web Site:
www.mdfloodmaps.com
Permit and Data Sharing !!!

FEMA or Locals

MDE
What’s Next
(proposed next steps /permits)

- Applicant Downloads Effective Model and modifies X-sections
- Data Upload of Proposed Models
- Integrate State Permit with local NFIP community and Require Applicant to send the locally vetted package on to FEMA for Letters of Map Amendments
- Working with SHA on defining the process and Implementing a joint (or simultaneous) permit review
Next Steps ....(high to low)

- Email trigger notify local NFIP office at beginning of process (Ensure communication with local NFIP on pending State Waterway Construction permits)
- Live data Up-Loads (Down loads already there)
- Cross-Section and Profile Viewer (link to pdf at MSC)
- Mobile Application (Very Soon !)
- Early Discussions at Silver Jackets on Combining Modeling with Real Time weather information and Running What If Scenarios (where will it flood)
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