Maryland Benefits from Successful Collaboration

A Public/Private partnership between FEMA, Maryland Department of the Environment, the USACE, and AECOM

Oct 22, 2009
Chris Penney, USACE
Andy Wohlsperger, AECOM
**Agenda**

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Study Overview and Area

Three Counties in Maryland
- Allegany County
- Carroll County
- Washington County

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<th>Study Task</th>
<th>Combined Value</th>
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Study Team and Responsibilities

- **State of Maryland**
  - Survey Data Collection
  - Cooperating Technical Partner
  - NFIP Program Management
  - GIS Hydro based calculations

- **FEMA**
  - General Oversight
  - Technical Review

- **USACE**
  - Detailed Study
  - Limited Detailed Study
  - FIS Report

- **AECOM**
  - Engineering data transfer
  - Approximate Zone A modeling (30 Miles)
  - Boundary Delineation (Approx 1150 miles)
  - DFIRM Production
USACE Hydraulic Modeling Tasks

- Update all effective HEC-2 models to georeferenced HEC-RAS models
- Establish HEC-RAS models for effective Zone A areas, while incorporating MDE survey data
- Takes advantage of latest modeling and GIS technology (HEC-RAS 4.0 and GeoRAS)
- Incorporate data from LOMR’s when applicable
HEC RAS input data
MDE Bridge/Culvert data
Output data provided to AECOM
AECOM Tasks

- **Boundary Delineation in WISE**
  - Import GeoRAS spatial files cross-sections and streamlines into WISE format
  - Delineated Boundaries in WISE

- **Merging of LDS and Detailed Study boundaries**
  - Automated procedure in WISE

- **Automated Approximate along the Potomac River in Allegany and Washington Counties**

- **DFIRM Production**
  - Utilization of AECOM DFIRM Tools (Mapping Analyst Extension)
WISE

- Comprehensive software platform developed by AECOM for Water Resources
  - Supports H&H modeling tasks
  - Terrain data processing
  - Automates floodplain delineation

Merging of LDS and Detailed Studies

- Automated procedure in WISE
- Import GeoRAS spatial files into WISE format
  - Geodatabase Template files
  - Load Objects – Set Source and Target fields
Boundary Delineation cont.

- Utilize Network Mapping in WISE
  - Automatically ‘merges’ LDS and Detailed study boundaries
    - Not stream by stream
    - Stream network mapping
  - Automatically delineates backwater areas
  - Attributes data – ready to load into DFIRM database schema
Traditionally Mapped Boundaries
WISE Network Mapping Cont.
Automated Approx. Studies

- Approximately 30 miles of the Potomac River in Allegany and Washington Counties
- Utilize discharge values provided by USACE
- WISE SwiftMAP procedure
  - Batch XS lay out and take offs
  - Automated basin delineation
  - Automated creation of HEC RAS models
  - Engineering review
  - Delineation of boundaries
DFIRM Production

- Citrix / SDE Enterprise production environment
  - Versioning workflow
  - Multiuser editing
  - Remote access possible

- AECOM DFIRM Tools – Mapping Analyst
  - ArcMap Extension
DFIRM Example

- Ortho based
Study Status update

- **Engineering update**
  - Carroll County 95%
  - Allegany County 40%
  - Washington County 50%

- **DFIRM update**
  - Base Map Setup done for all three studies
  - DFIRM Databases are setup and ready for production for all three studies
  - Carroll County – boundary delineation in progress 95% complete

- **Prelim Dates:**
  - Carroll (March 2010)
  - Washington (April 2010)
  - Allegany (May 2010)
Closing

- Questions?