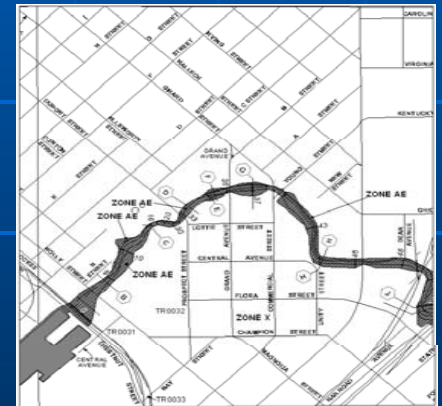
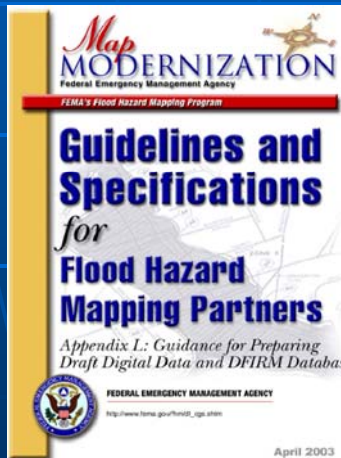


Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

Mark Flick

U.S. Army Corps of Engineers



Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

OUTLINE

1) Scope of Work

2) Interesting facts about these studies

3) Steps to accomplish the studies and some of the required data

4) Project Management Perspective

Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

Scope of Work

Convert all effective HEC-2 models to HEC-RAS

Develop new HEC-RAS models for Approximate Method Streams

Update all bridge sections to current

Use new LIDAR for over-bank portions of cross-sections

Use new LIDAR for development of inundation areas

Develop DFIRM geodatabase

Merge all FIS reports into county-wide format

Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

Interesting Facts

There will be NO approximate method (i.e. Unnumbered A-zone) streams ... All of these will have HEC-RAS models developed and will have same frequency events ran as typical detailed streams.

New DFIRMs for these four counties will have BFE's for all streams.

The following frequency events will be evaluated:

10-year, 50-year, 100-year, and 100-year Ultimate

Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

Convert Effective Models to HEC-RAS

Effective models are only available as scans of old HEC-2 output

Process created to transfer scans to HEC-2 input files, which will be imported into HEC-RAS

 HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
 ERROR CORR - 01
 MODIFICATION - 50.51.52

T1 FLOOD INSURANCE STUDY, WASH.D.C.
 T2 ANACOSTIA RIVER
 T3 10-YEAR FLOOD PROFILE

J1	ICHECK	IND	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FO
	0.	4.	0.	0.	0.0	0.0	0.0	0.	6.700	0.0
J2	NPROF	IPL0T	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1.000	0.0	-1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GT	4.000	39462.000	34241.000	24884.000	50000.000	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0
NH	4.000	0.050	4325.000	0.065	4410.000	0.030	5600.000	0.090	6068.000	0.0
X1	14.000	49.000	4350.000	5600.000	0.0	0.0	0.0	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	7.000	3580.000	8.000	3790.000	8.000	4315.000	10.000	4325.000	15.000	4340.000
GR	16.000	4350.000	15.000	4362.000	10.000	4370.000	5.000	4387.000	5.000	4410.000
GR	-10.600	4410.000	-11.700	4425.000	-15.600	4475.000	-18.600	4500.000	-20.200	4525.000
GK	-23.100	4600.000	-24.200	4650.000	-24.600	4675.000	-26.200	4700.000	-29.200	4725.000
GR	-30.700	4750.000	-30.700	4775.000	-32.700	4850.000	-31.700	4875.000	-31.300	4900.000
GK	-31.200	4925.000	-30.700	4950.000	-30.700	4975.000	-30.100	5000.000	-30.200	5025.000
GR	-31.200	5050.000	-31.600	5075.000	-30.700	5125.000	-28.600	5175.000	-26.200	5225.000
GK	-25.200	5275.000	-24.700	5300.000	-22.600	5350.000	-20.700	5375.000	-19.700	5400.000
GR	-12.600	5425.000	-14.300	5450.000	-16.200	5475.000	-17.200	5500.000	-16.200	5525.000
GK	-11.200	5590.000	5.000	5600.000	10.000	5790.000	15.000	6080.000	0.0	0.0
NH	5.000	0.050	4350.000	0.065	4420.000	0.030	5570.000	0.050	5905.000	0.100
NH	6240.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	13.000	52.000	4355.000	5570.000	2680.000	2050.000	2410.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	16.000	3880.000	15.000	4020.000	12.000	4235.000	12.000	4300.000	15.000	4335.000
GR	16.000	4355.000	15.000	4370.000	10.000	4390.000	5.000	4420.000	-6.700	4420.000
GR	-7.800	4425.000	-11.700	4475.000	-14.700	4500.000	-16.300	4525.000	-18.200	4600.000
GR	-20.300	4650.000	-20.700	4675.000	-22.300	4700.000	-25.300	4725.000	-26.300	4750.000
GR	-26.800	4775.000	-28.800	4850.000	-27.800	4875.000	-27.400	4900.000	-27.300	4925.000
GK	-26.800	4950.000	-26.800	4975.000	-26.200	5000.000	-26.300	5025.000	-27.300	5050.000
GR	-27.700	5075.000	-26.800	5125.000	-24.700	5175.000	-22.300	5225.000	-21.300	5275.000
GK	-20.800	5300.000	-18.700	5350.000	-16.800	5375.000	-15.800	5400.000	-8.700	5425.000
GR	-10.400	5450.000	-12.300	5475.000	-13.300	5500.000	-12.300	5525.000	-7.300	5550.000
GK	5.000	5570.000	10.000	5590.000	12.300	5880.000	12.300	5905.000	15.000	5950.000
GR	20.000	6070.000	25.000	6240.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0
NH	5.000	0.050	4280.000	0.060	4400.000	0.030	5600.000	0.060	6020.000	0.100
NH	6250.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	12.900	50.000	4280.000	5600.000	520.000	500.000	500.000	0.0	-0.430	0.0
									45.000	0.0

Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

Convert Effective Models to HEC-RAS

Scans of effective FIRM panels will be georeferenced

Georeferenced FIRM panels will be used by Hydraulic engineers to:

- Locate cross-sections in order to cut new over-bank portions from TIN

- Locate stream crossings (bridges, culverts, dams, etc.)

- Compare new floodplains to effective floodplains

- Compare new floodways to effective floodways

Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

Example of Georeferenced FIRM



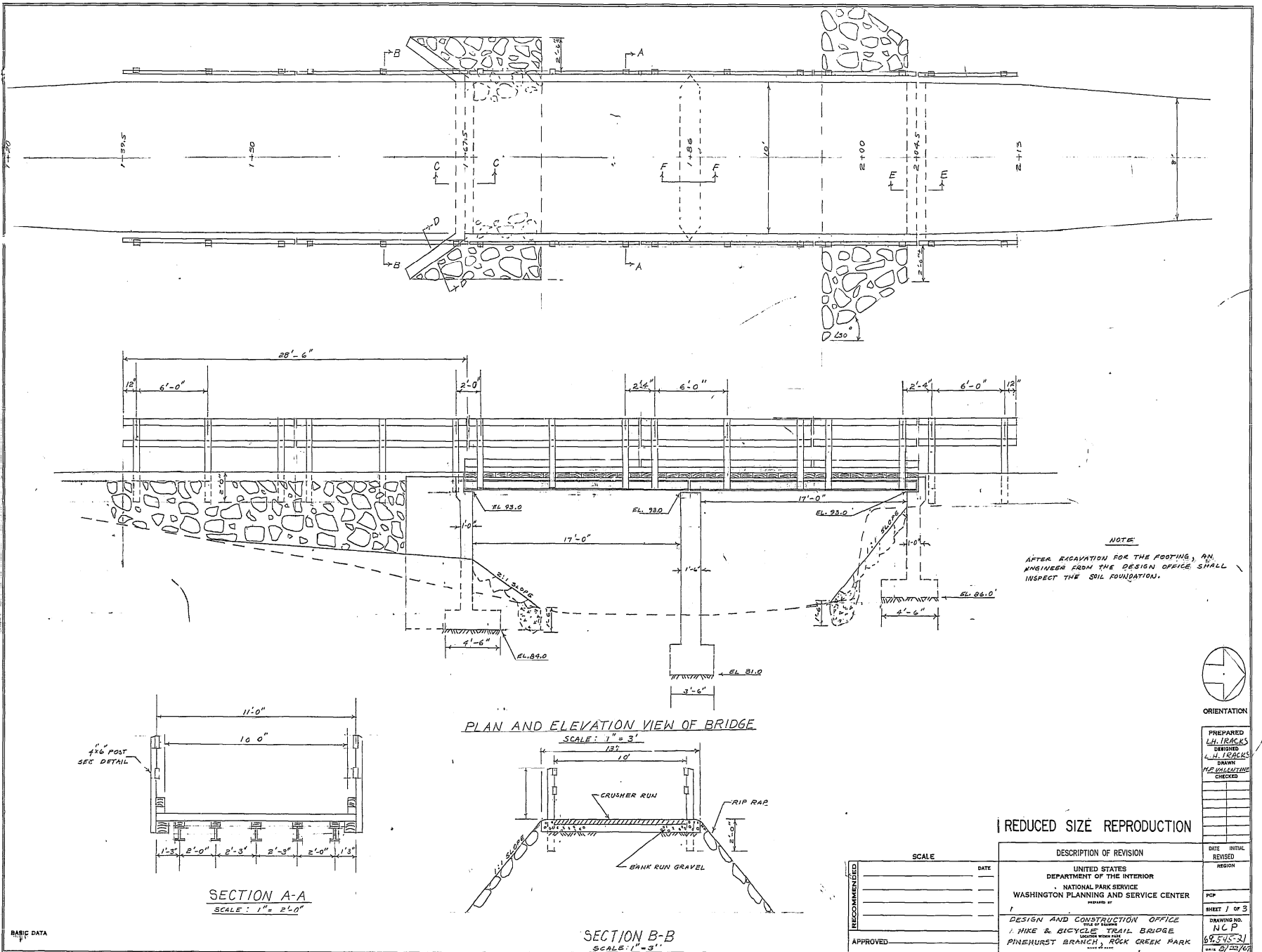
Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

Bridge Data

MDE is working with the State Highway Administration and the four counties to obtain as much in-the-can data on all bridges over streams with floodplains

If data are not readily available for a bridge, MDE intends to survey the data necessary for the hydraulic model



Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

LIDAR Data

LIDAR for each county and a buffer of LIDAR data from surrounding counties will be converted to a TIN (triangulated irregular network ... 3D ground surface)

TIN will be used by Hydraulic engineers to:

- Cut new over-bank portions of cross-sections

- Cut new cross-sections where needed

- Develop inundated areas w/ HEC-GeoRAS

Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

GIS Tools for Map Mod Studies

The image displays a collection of GIS-related materials:

- Manual Cover:** "Map MODERNIZATION Federal Emergency Management Agency FEMA's Flood Hazard Mapping Program Guidelines and Specifications for Flood Hazard Mapping". It includes the FEMA logo and the text "Appendix L Draft Digital".
- Map and Legend:** A technical map showing various features with a legend on the right. The legend includes categories like "GENERAL STRUCTURE", "BRIDGE", "AQUEDUCT", "CANAL", "CHANNEL", "CONTROL STRUCTURE", and "CULVERT".
- Map Index:** A document titled "MAP INDEX" for the "FIRM FLOOD INSURANCE RATE MAP CLARK COUNTY, NEVADA AND INCORPORATED AREAS". It includes a table of community listings and the FEMA logo.
- Software Interface:** A screenshot of a GIS application window titled "GeoPop Production". The "GENERAL STRUCTURE" dropdown menu is open, showing a list of features including "BRIDGE", "AQUEDUCT", "CANAL", "CHANNEL", "CONTROL STRUCTURE", and "CULVERT". The "BRIDGE" option is highlighted.

Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

Project Management Perspective

Substantial amount of work ...

Howard County – 180 miles detailed; 100 miles approximate

Dorchester County – 10 miles detailed; 50 miles approximate

Somerset County – 0 miles detailed; 50 miles approximate

Wicomico County – 40 miles detailed; 15 miles approximate

One year to complete all work !!

Seven different USACE Districts and 2 USACE Labs will be involved

Map Modernization

Dorchester, Howard, Somerset, Wicomico Counties

QUESTIONS

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