

Geomatics Section

EN Division Chief updates/ Monthly QMS training

Geospatial Highlight



US Army Corps
of Engineers®



Geomatics Section

Application
Development

Surveying

Remote Sensing/
Photogrammetry

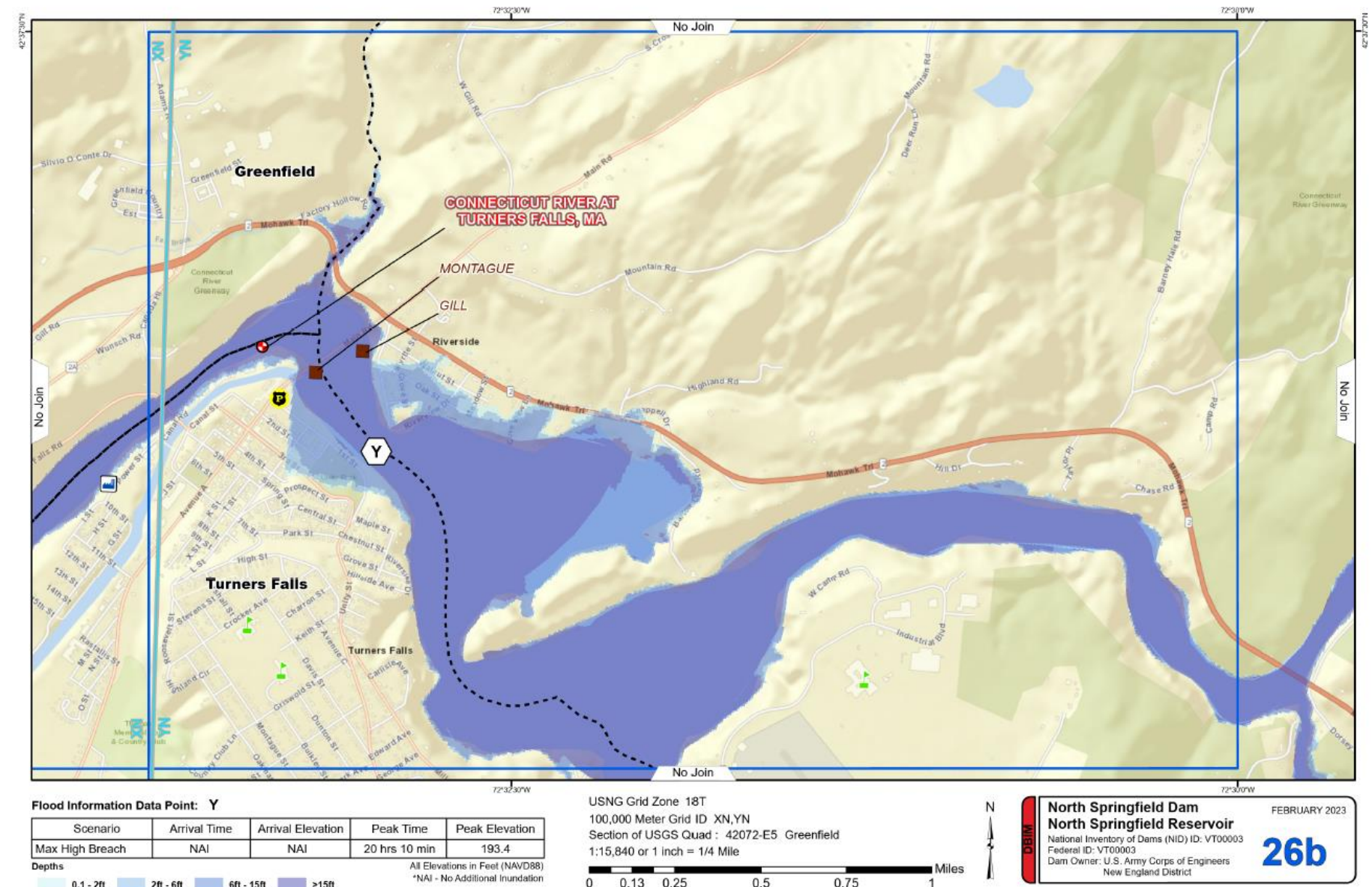
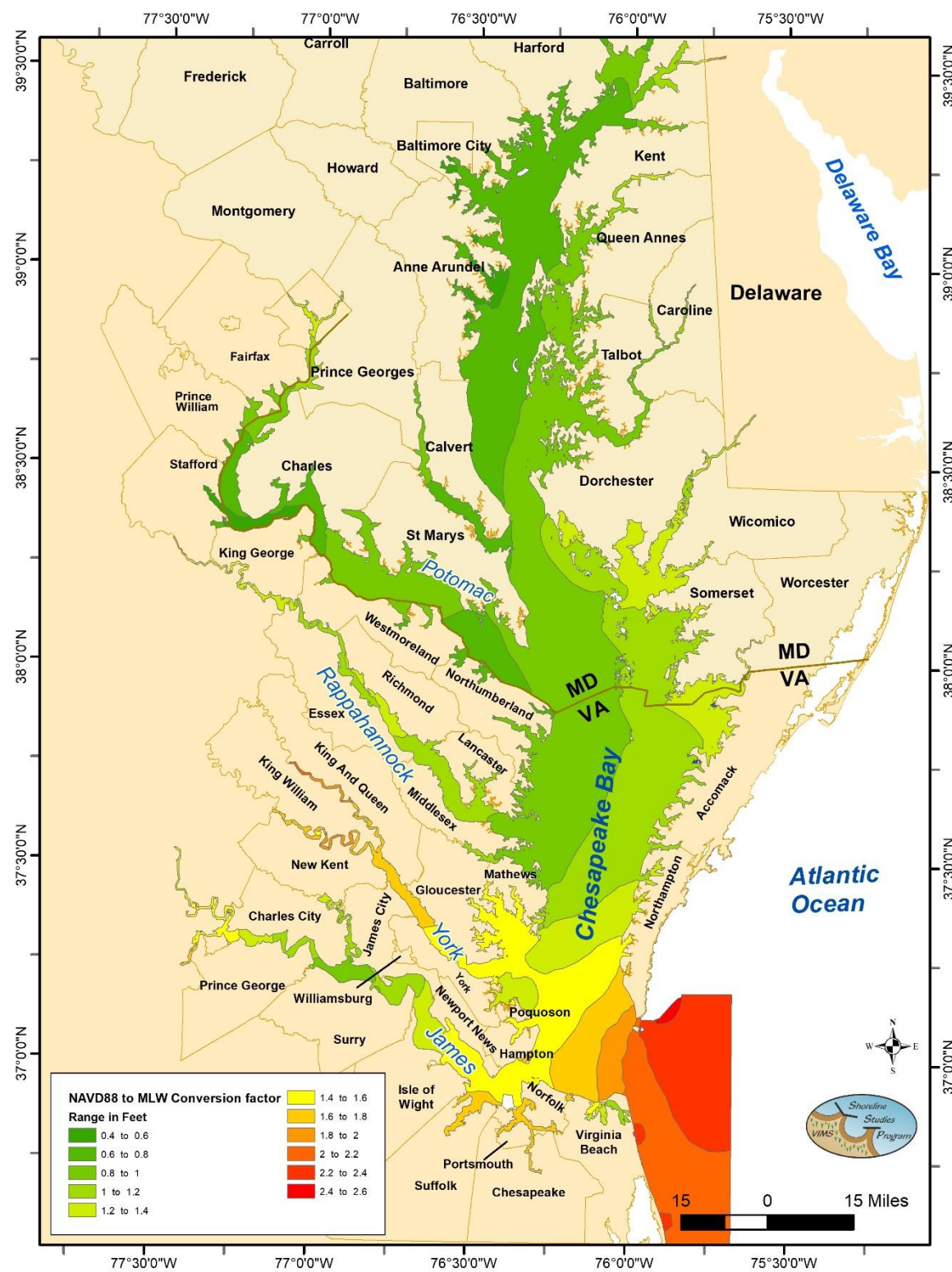
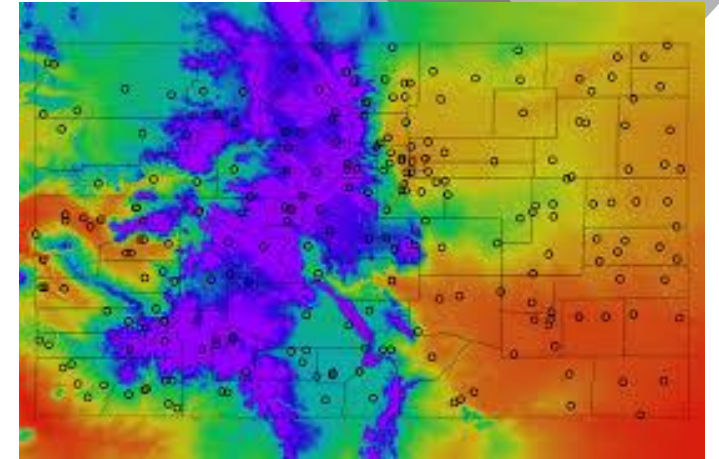
Data Management

Database Design/
Development

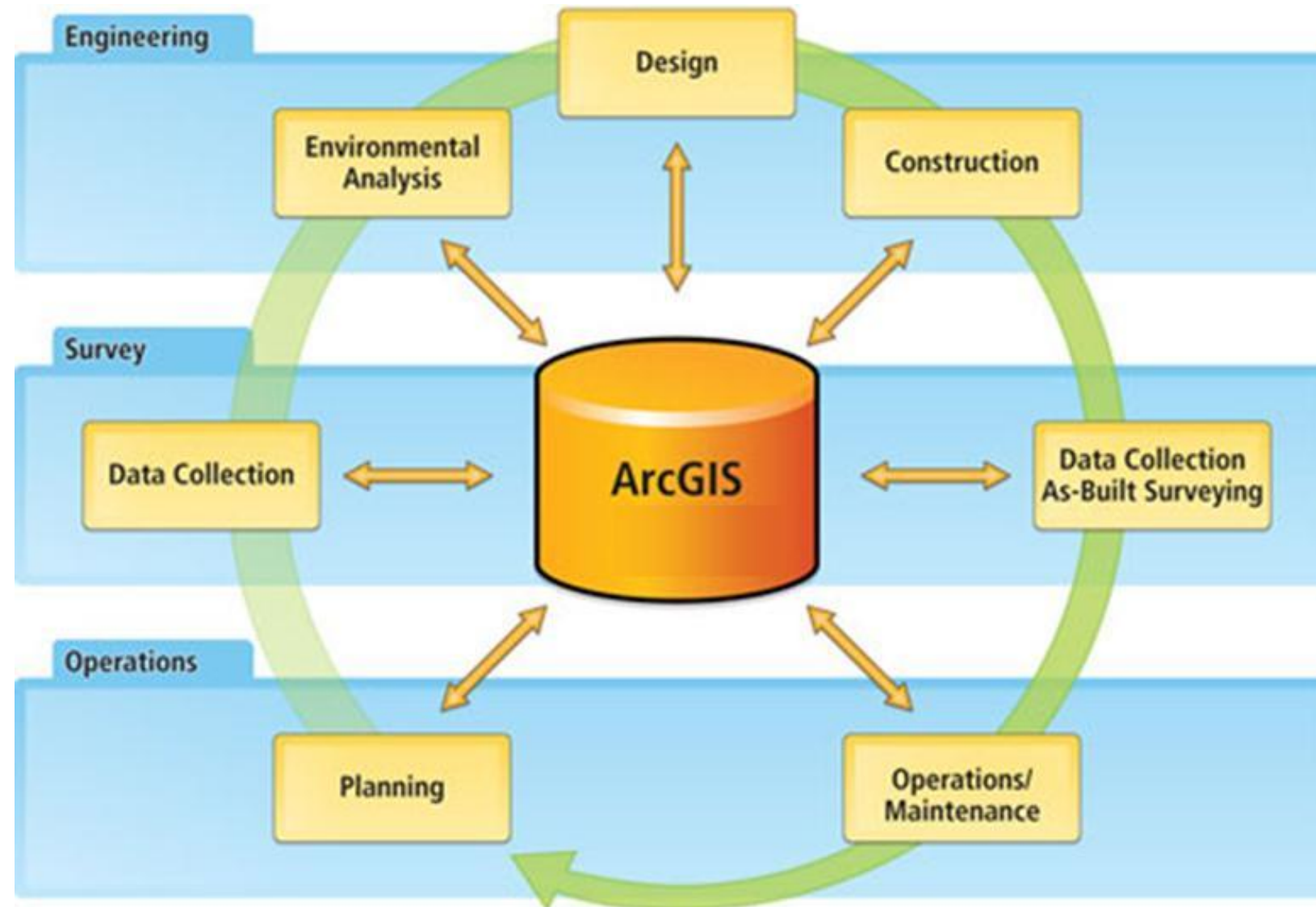
Geospatial/ GIS



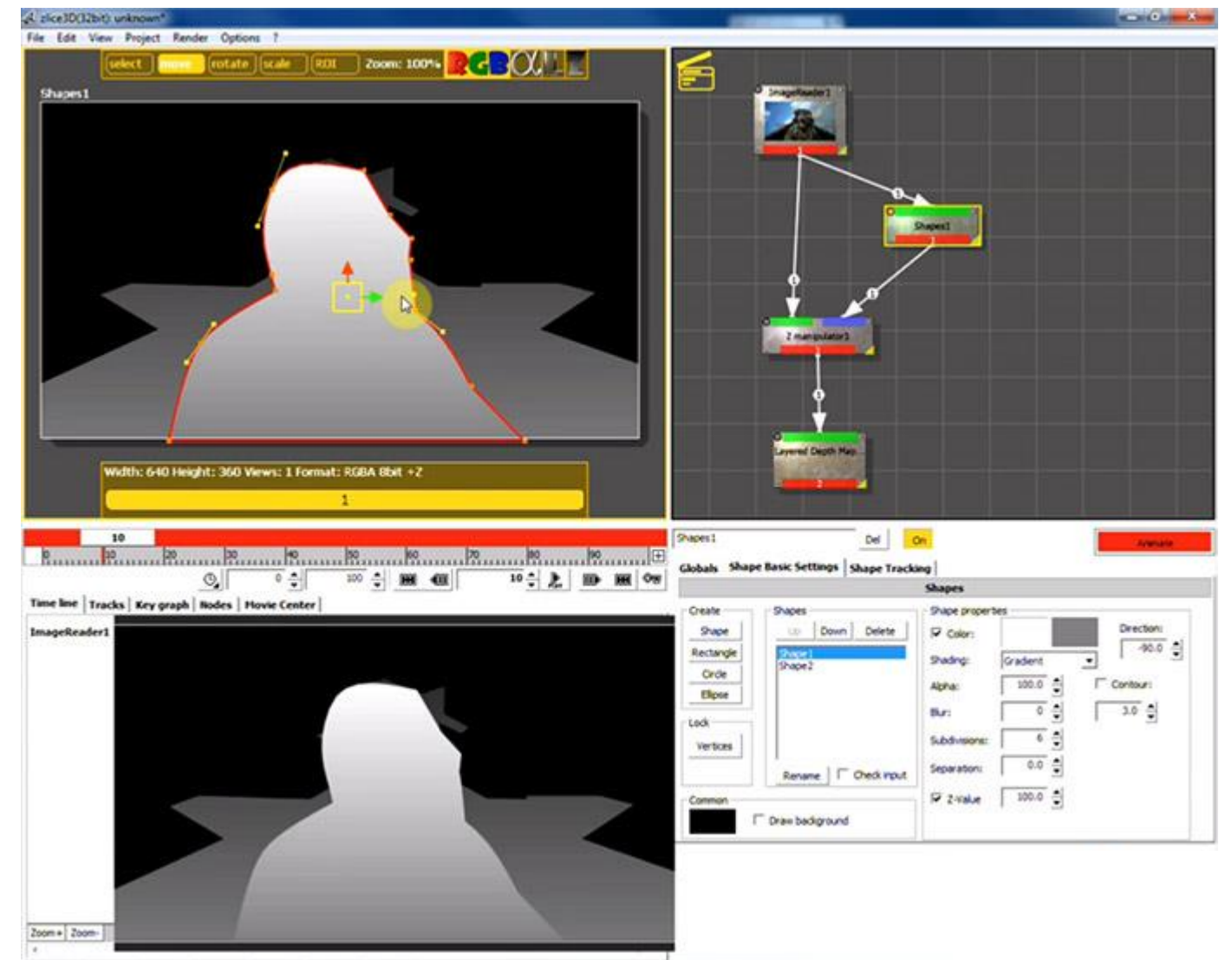
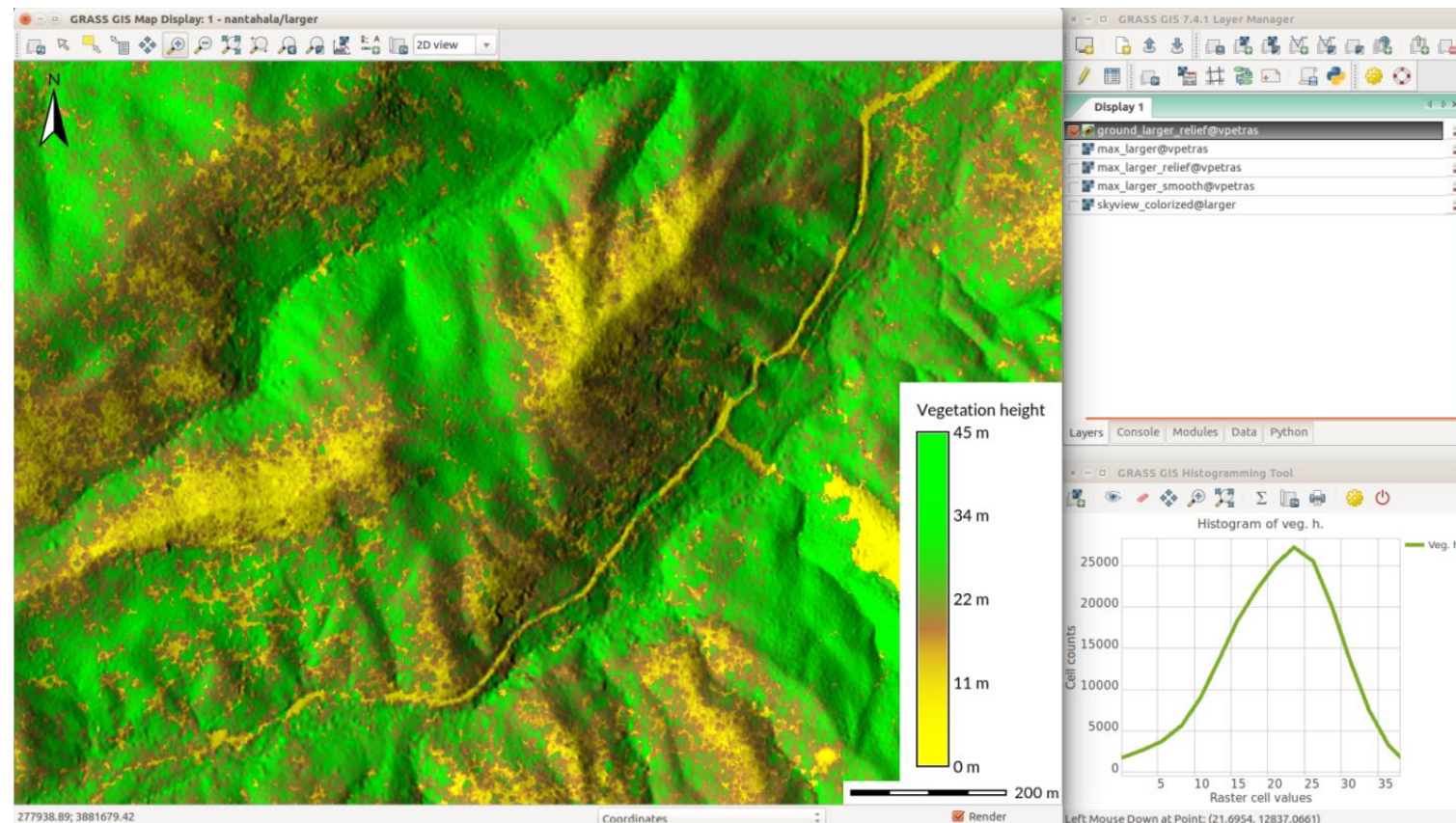
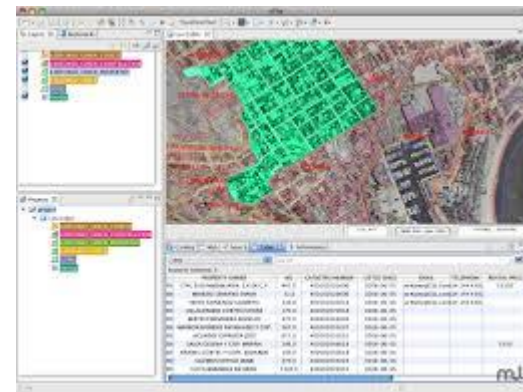
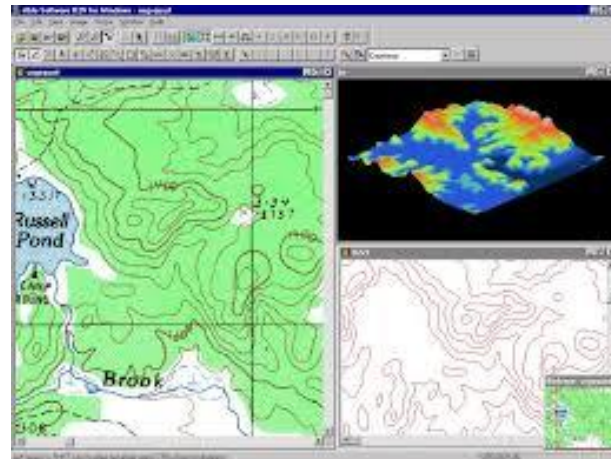
More than “Pretty Maps”!



Data Design & Integration




Data Analysis & Design

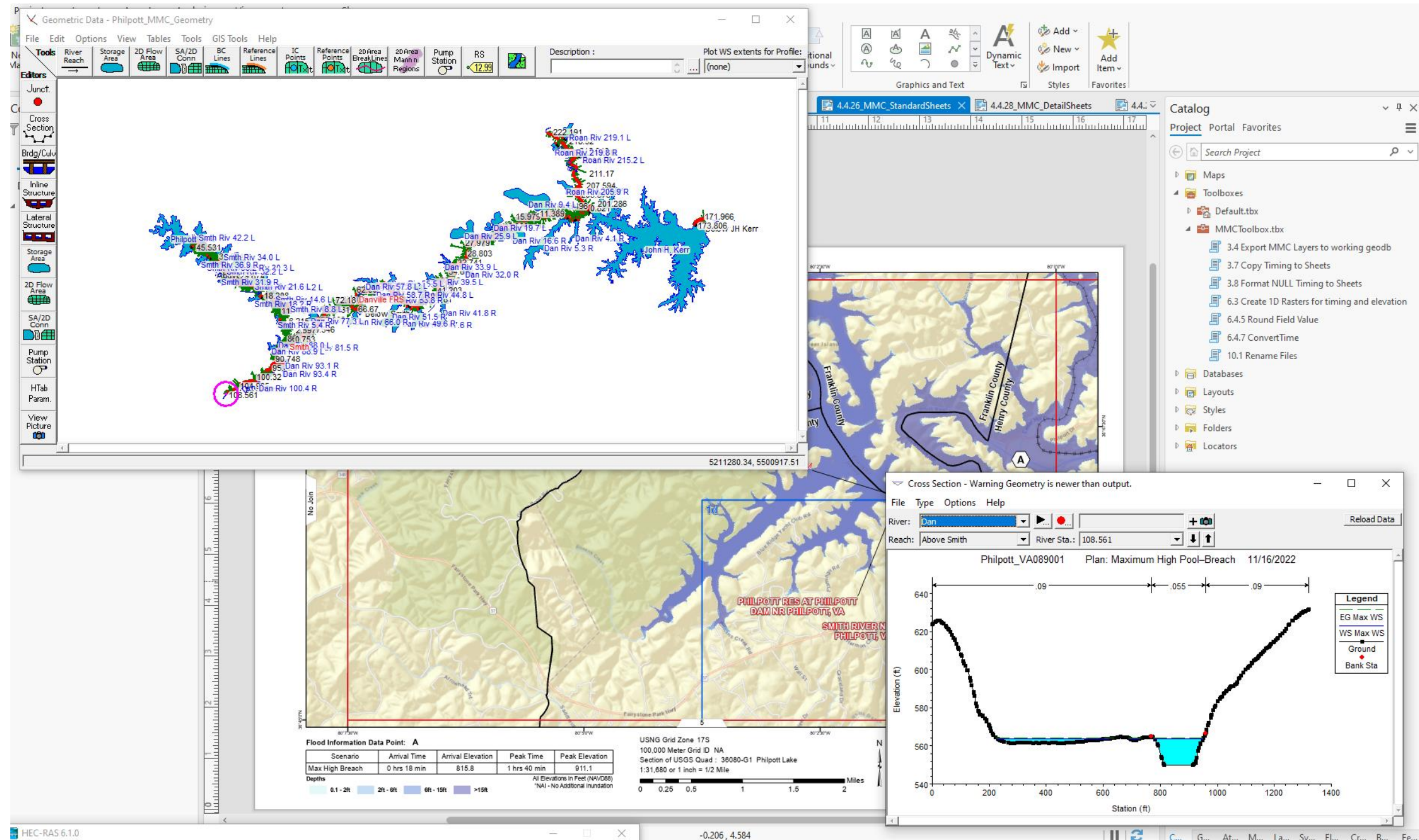




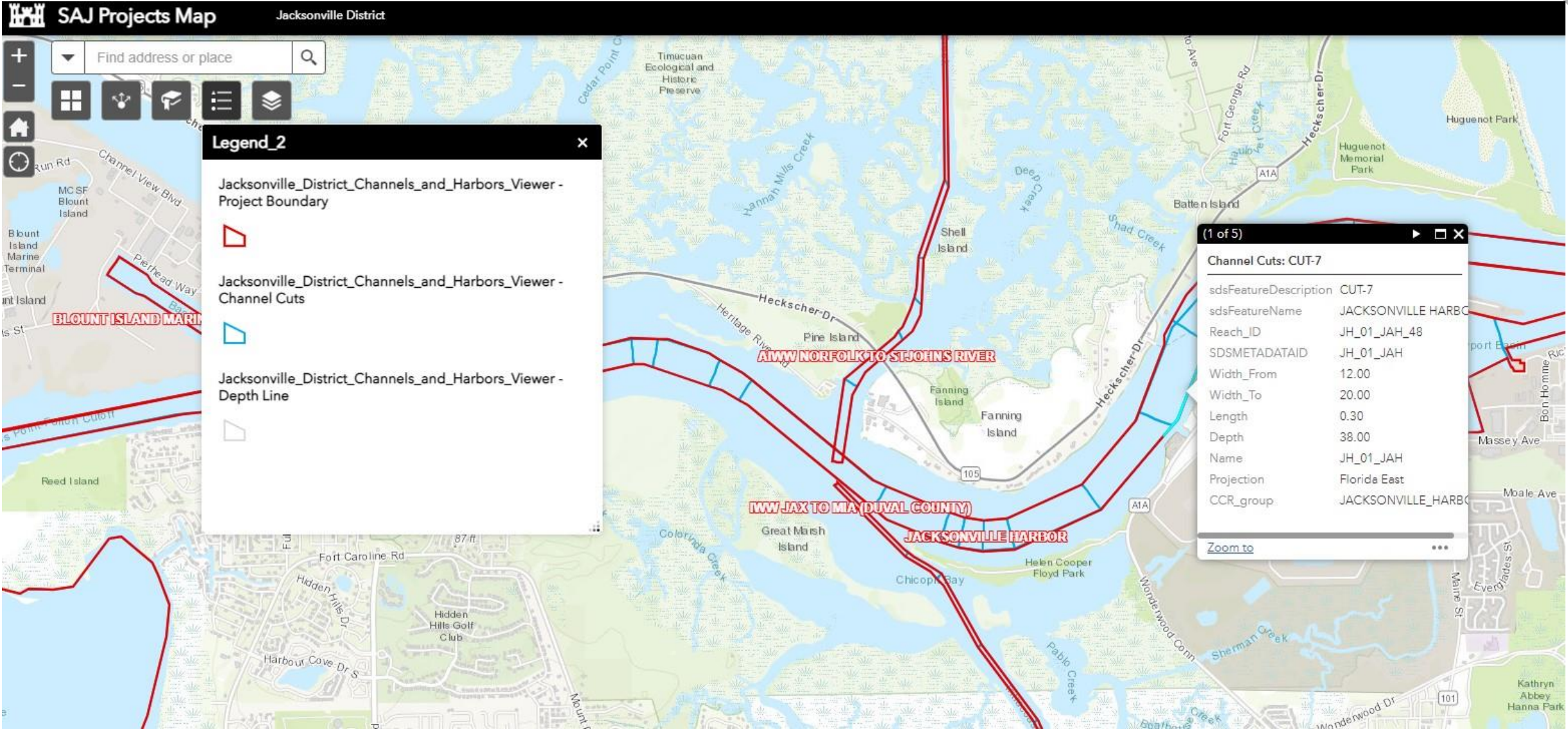
Projects Spotlight



Modeling, Mapping & Consequences (MMC) Atlas Production



eHydro



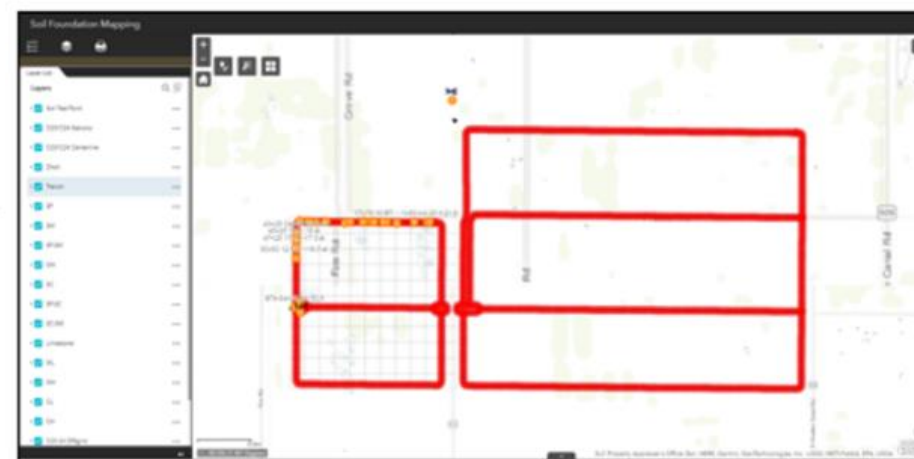
Channel cuts, depths, and associated information collected from hydrographic surveys and design for all USACE controlled channels.

High Water Inspection/ Foundation Mapping Applications

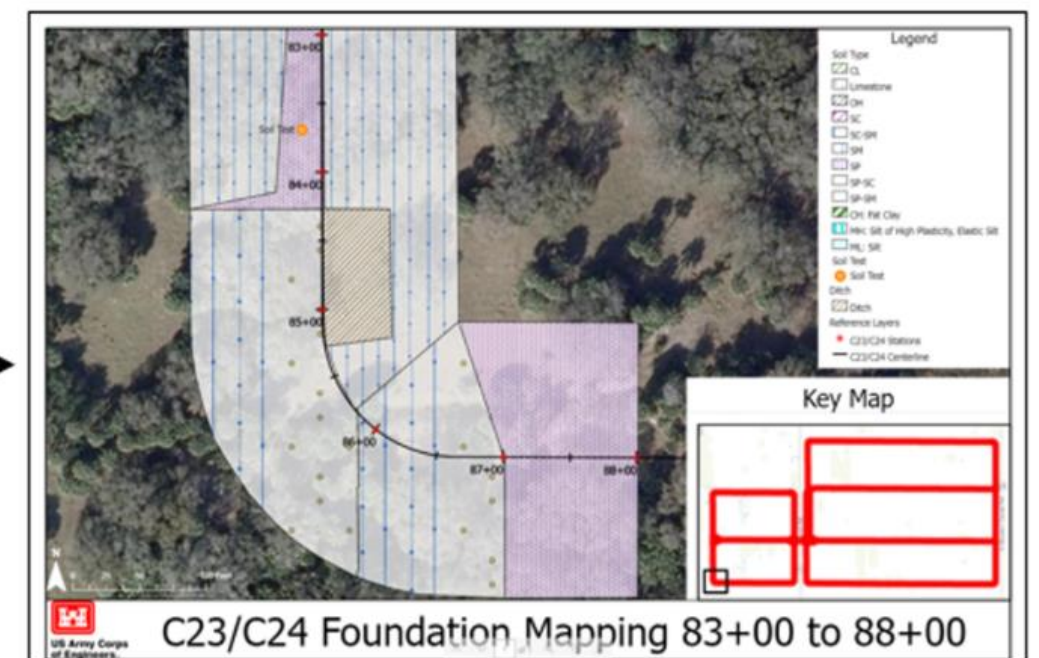
The four smartphone screens show the 'High Water Inspection' app interface. The first screen shows the 'Inspection Date' field with a calendar icon and a date of 'Monday, March 28, 2022'. Below it is a 'Team Members' section with a 'Team Member Name' field and a list of team members. The second screen shows 'New Site' (Yes/No), 'Location' (with a map icon), 'Nearest Structure and Distance', 'Lake Stage', 'Landside Water Level', and 'Location Description'. The third screen shows 'Location Description' (Lakeside Slope, Embankment Crest, Landside Slope, Landside Berm, Landside Toe, Landside Ditch, Other), 'Seepage Questions' (Is there seepage? Yes/No), and 'Deficiencies Other Than Seepage' (Are there embankment deficiencies? Yes/No). The fourth screen shows 'Deficiencies Other Than Seepage' (What is the embankment deficiency? Sinkhole, Depression, Erosion/Slide, Cracking, Other) and a 'Photo' field with a camera icon.



Field App; data
collection (field)

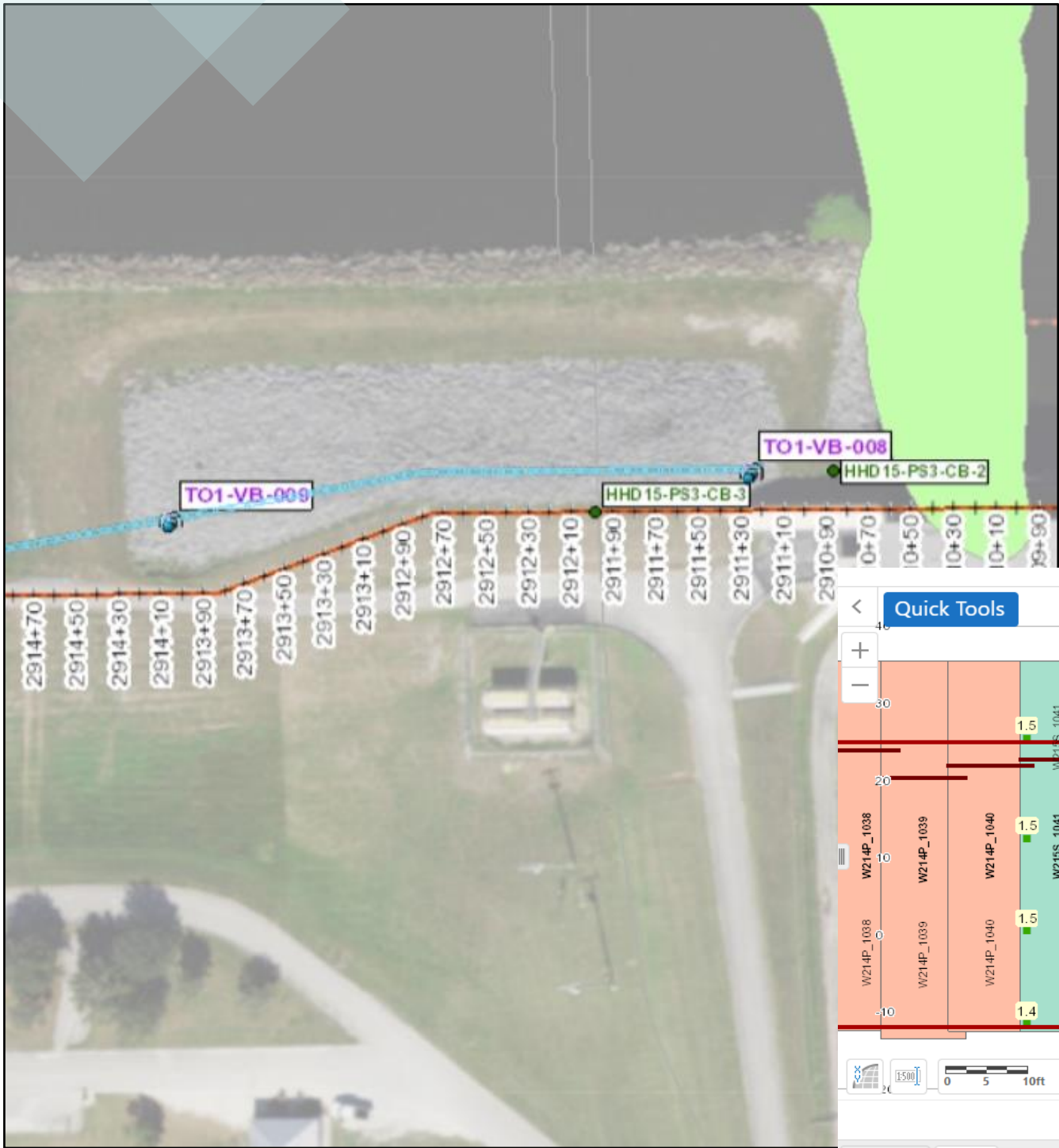


Web App; edits and review of data (office)




Final map product template


HHD Cutoff Walls





Layers


Filter Layers... Filter


☒  Piezometer

☒  VB QC Sample (Click for data)


☒  Post-Placement Sample (Click for data)


☒  Stationing


☐  Centerline


☒  Photographs


☐ Verification Boring Depth Cuts

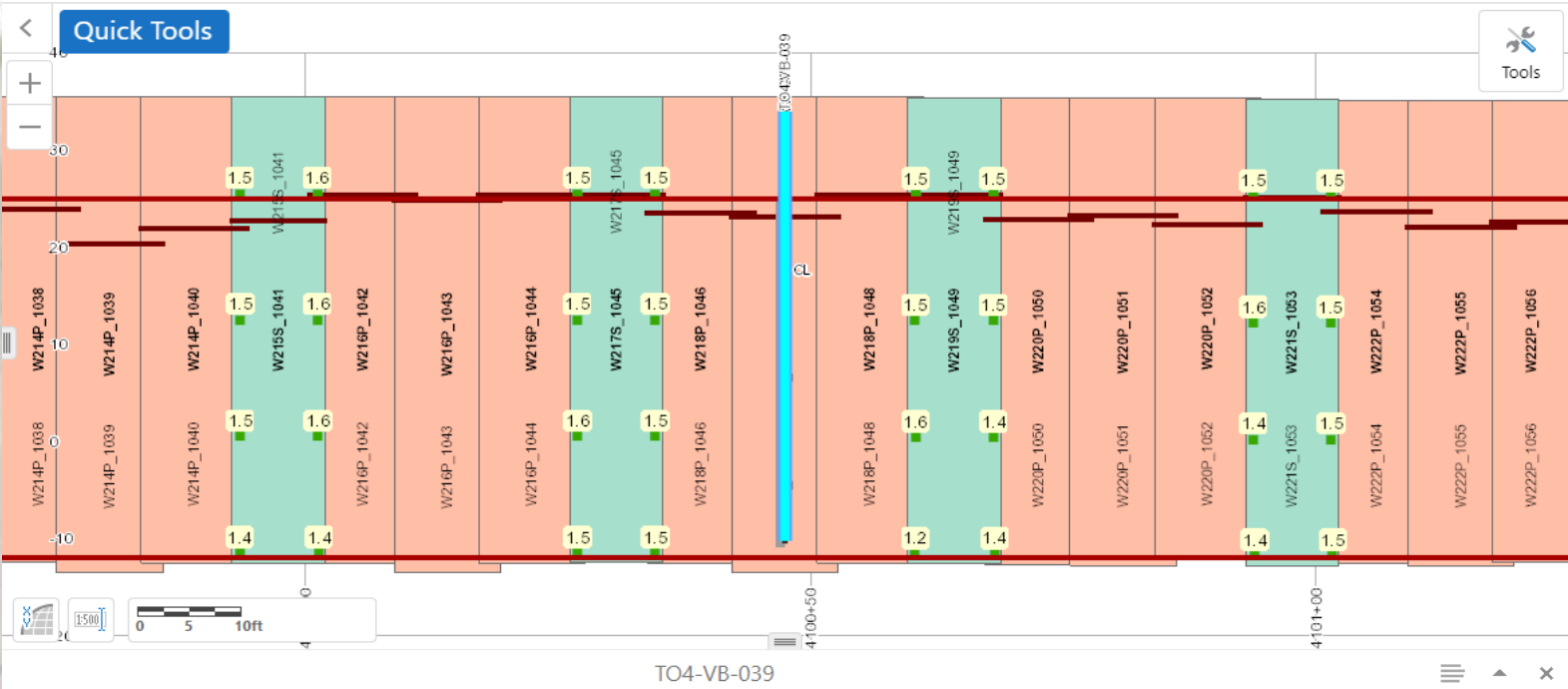
☒  Verification Boring

☒  Boring (TIS)

☒  Boring (USACE)

☒  Panel Details As-Built

☒  Panels Depth Cuts



DeltaTheorVol	N/A
TotalSlag	N/A
DeltaTheorSlag	N/A
TotalAdmix	N/A
DeltaTheorAdmix	N/A
TotalSlurry	N/A
DeltaTheorSlurry	N/A

Description	Details
VB_ID TO4-VB-039	VBtype Vertical
Topelev 34	Station 410047.47
VBgeom N/A	BotElev -10.3
Stn 410047.47	VBearing 621844.96
Area QC-1	VBNorthing 919080.56
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	OID 49
	ESRI_OID 30



Data/Process Automation



Data/Process Automation

MMC_Export_LayersPro2.py - C:\MMC\MMC_Toolbox\MMC_Export_LayersPro2.py (3.9.11)

File Edit Format Run Options Window Help

```
## input feature class variables that need names changed
inDetail = hsipPath + "/MMC_DetailSheetExtents"
inStandard = hsipPath + "/MMC_StandardSheetExtents"
inDamsUsace = hsipPath + "/NID_Dams_USACE"
inDamsNonUsace = hsipPath + "/NID_Dams_NonUSACE"
inGrid = hsipPath + "/mgrs_region"
```

```
## output feature class variables for layers above
```

```
outDetail = "Detail_Sheets"
outStandard = "Standard_Sheets"
outDamsUsace = "USACE_Dams"
outDamsNonUsace = "Non_USACE_Dams"
outGrid = "USNG_Grid"
```

```
## Feature Class Lists
```

```
hsipData = ["Countries", "Counties_Area", "States_Area", "Cities_Area", "Railroads",
            "USGS_Gages", "Natural_Gas_Pipelines", "floodwalls", "embankments", "closures"]
cikirData = ["CIKR_Airports", "CIKR_Broadcast_Communications", "CIKR_Colleges_and_Universities",
            "CIKR_Correctional_Facilities", "CIKR_Electric_Power_Generation", "CIKR_Electric_Substations",
            "CIKR_EMS", "CIKR_Fire_Stations", "CIKR_Fire_StationsEMS", "CIKR_Heliports", "CIKR_Hospitals",
            "CIKR_Hydroelectric_Power_Generation", "CIKR_Intermodal_Terminal_Facilities", "CIKR_Law_Enforcement",
            "CIKR_Natural_Gas_Storage", "CIKR_Nuclear_Electric_Power_Generation", "CIKR_Petroleum_Terminals",
            "CIKR_Schools", "CIKR_Wastewater_Treatment_Plants"]
```

```
# Create Project Layers for layers that require new output names
```

```
arcpy.AddMessage("Creating Detail_Sheets...")
inFeat = arcpy.SelectLayerByLocation_management(inDetail, "INTERSECT", Max_High, "", "NEW_SELECTION")
arcpy.Select_analysis(inFeat, outDetail, "")
```

```
arcpy.AddMessage("Creating Standard_Sheets...")
inFeat = arcpy.SelectLayerByLocation_management(inStandard, "INTERSECT", Max_High, "", "NEW_SELECTION")
arcpy.Select_analysis(inFeat, outStandard, "")
```

```
arcpy.AddMessage("Creating Non-USACE_Dams...")
inFeat = arcpy.SelectLayerByLocation_management(inDamsNonUsace, "INTERSECT", Max_High, "", "NEW_SELECTION")
arcpy.Select_analysis(inFeat, outDamsNonUsace, "")
```

```
# Define new Standard Sheets layer based on creation of project Standard Sheets to use for selecting features
Standard_Sheets = (env.workspace + "\\Standard_Sheets")
```

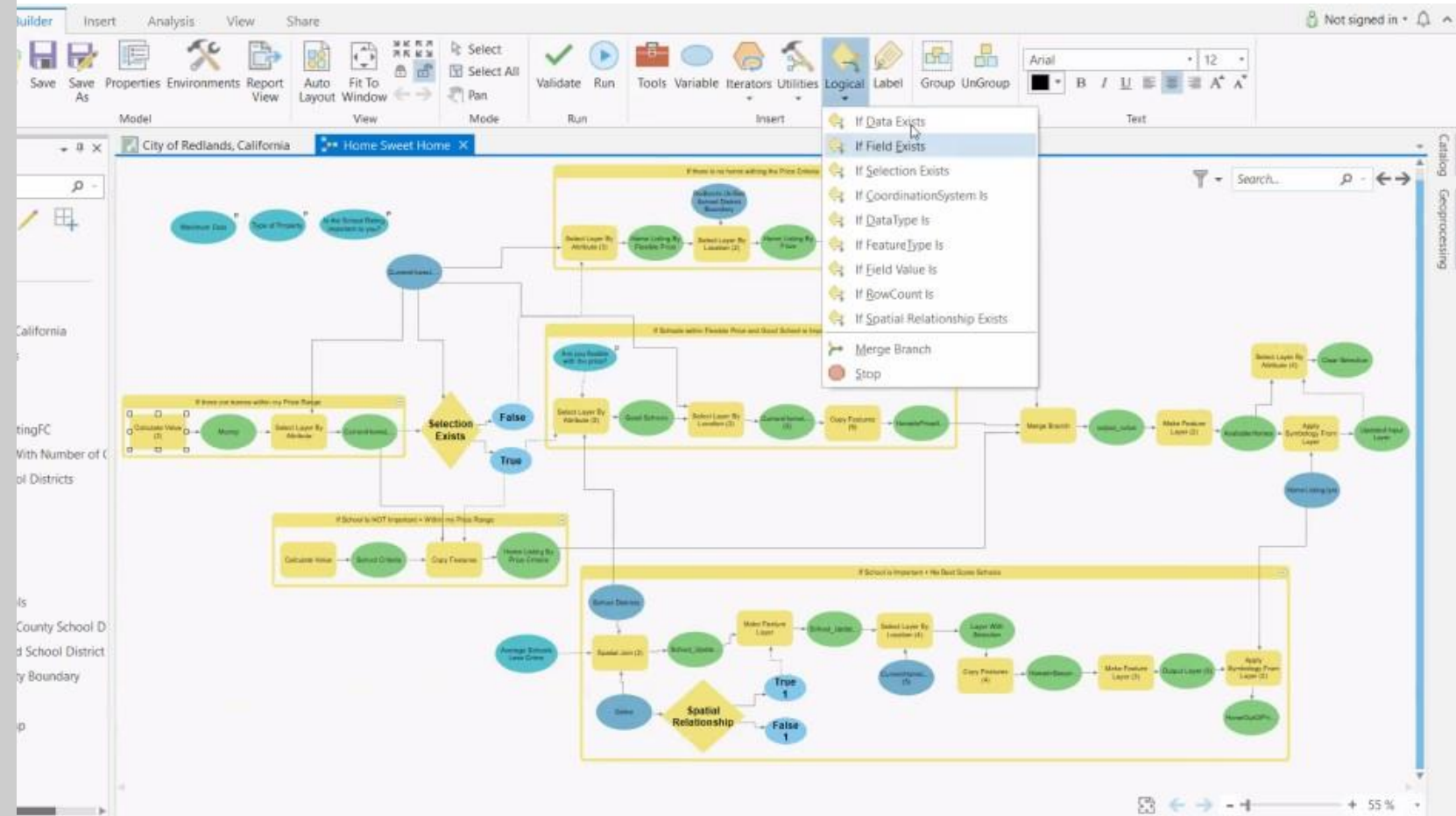
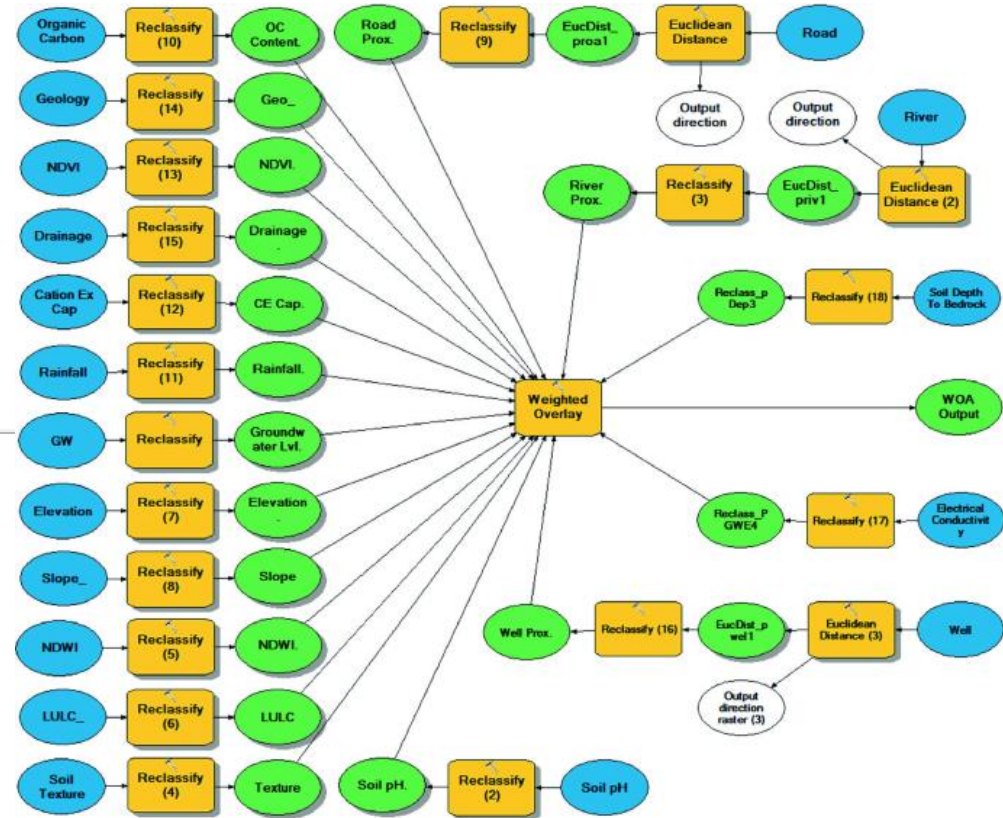
```
arcpy.AddMessage("Creating USACE_Dams...")
inFeat = arcpy.SelectLayerByLocation_management(inDamsUsace, "INTERSECT", Standard_Sheets, "", "NEW_SELECTION")
arcpy.Select_analysis(inFeat, outDamsUsace, "")
```

```
arcpy.AddMessage("Creating USNG_Grid...")
inFeat = arcpy.SelectLayerByLocation_management(inGrid, "INTERSECT", Standard_Sheets, "", "NEW_SELECTION")
arcpy.Select_analysis(inFeat, outGrid, "")
```

```
# Create Project Layers for all other layers in National Data GDB and Levee GDB
```

```
for fc in hsipData:
    inData = hsipPath + "/" + fc
    arcpy.AddMessage("Creating " + fc + "...")
    inFeat = arcpy.SelectLayerByLocation_management(inData, "INTERSECT", Standard_Sheets, "", "NEW_SELECTION")
    arcpy.Select_analysis(inFeat, fc, "")
```

```
arcpy.AddMessage("Creating CIKR Data...")
for fc in cikirData:
    inData = hsipPath + "/" + fc
    arcpy.AddMessage("Creating " + fc + "...")
    inFeat = arcpy.SelectLayerByLocation_management(inData, "INTERSECT", Standard_Sheets, "", "NEW_SELECTION")
```



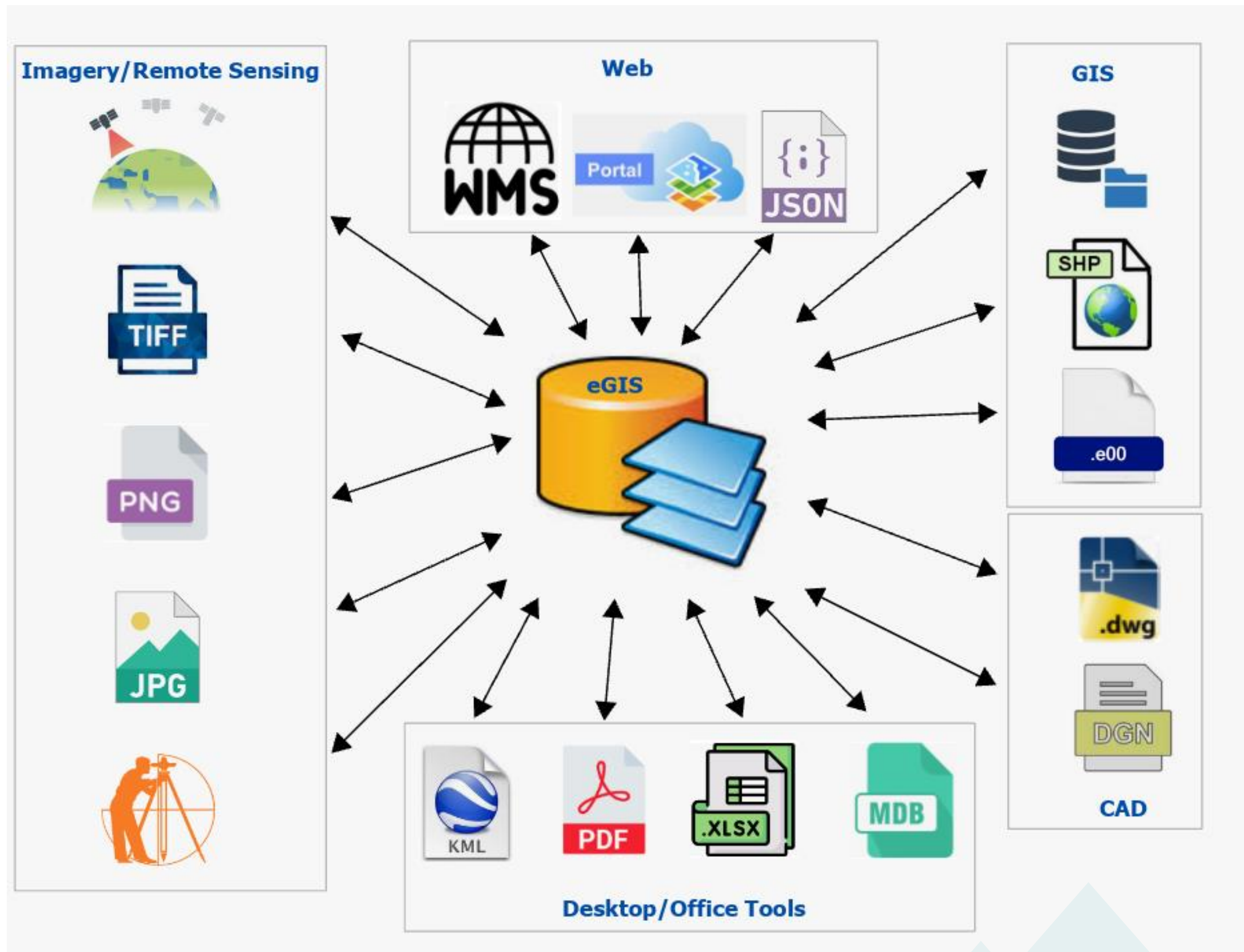
[illegible]



Enterprise Geodatabase



eGIS Enterprise Database





Questions?