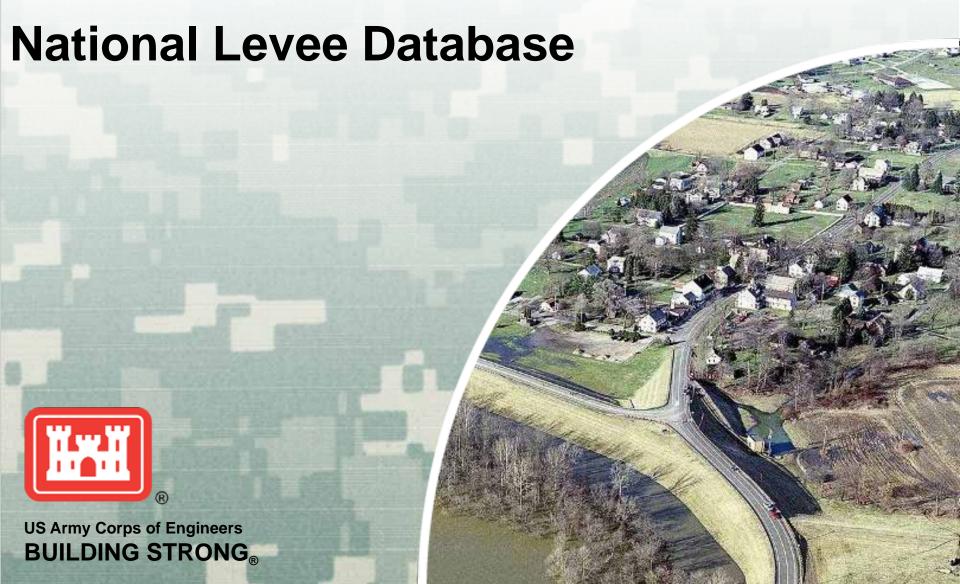
U.S. Army Corps of Engineers Levee Safety Program



WRDA 2007

- ► "SEC. 9004. INVENTORY AND INSPECTION OF LEVEES.
- ▶ (a) LEVEE DATABASE.—The database shall include—
 - (A) Location information of all Federal levees in the Nation (including global information system information) and,
 - For non-Federal levees, such information on levee location as is provided to the Secretary by State and local governmental agencies;
 - (B) utilizing such information as is available, the <u>general condition</u> of each levee; and
 - (C) An estimate of the number of structures and population at risk and protected by each levee that would be adversely impacted if the levee fails or water levels exceed the height of the levee.

National Levee Database

3.0 Data Model

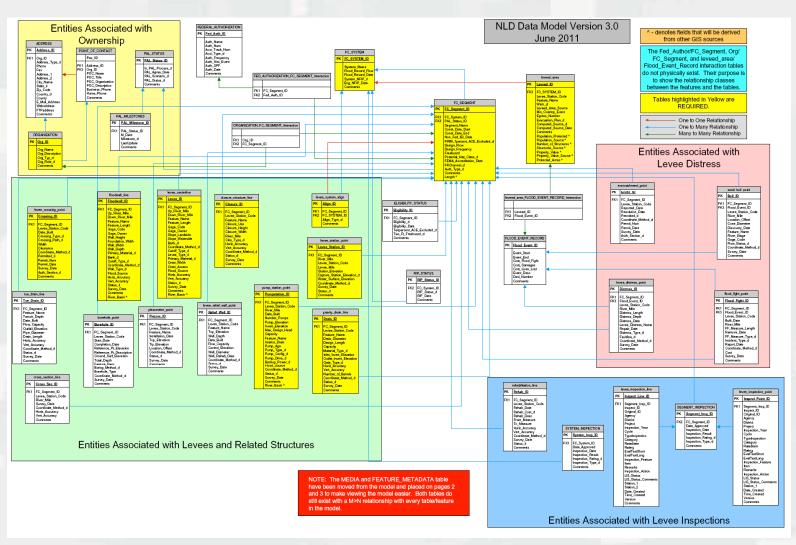


NLD 3.0

- NLD 3.0 incorporates the needs of the nation (Federal Governments, State Governments, and Public Entities) as it pertains to a national levee inventory
- NLD 3.0 contains:
 - ▶21 Graphic Features
 - ▶ 15 Non-graphic Tables
 - ▶46 Domain Tables
 - ► Over 450 attributes
- SDEFIE Compliant

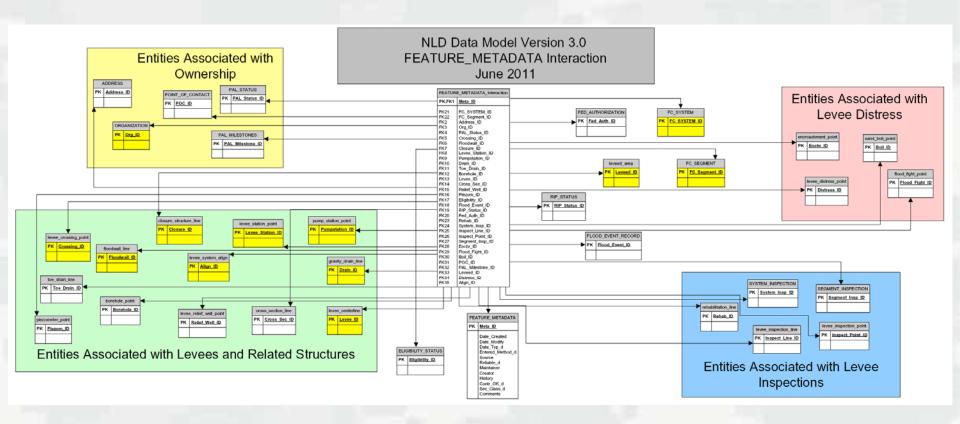


NLD 3.0 Data Model





NLD 3.0 Feature Metadata Data Model

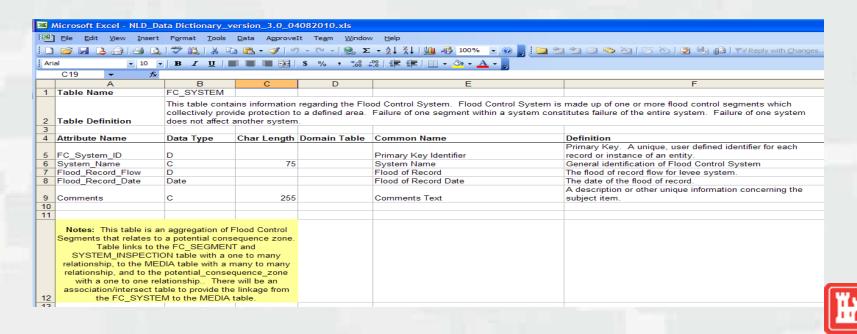






NLD Data Dictionary

- Microsoft Excel Workbook
- Explains each feature and non-graphic table as well as the attributes (data type, length), domains, domain values, relationships, and definitions



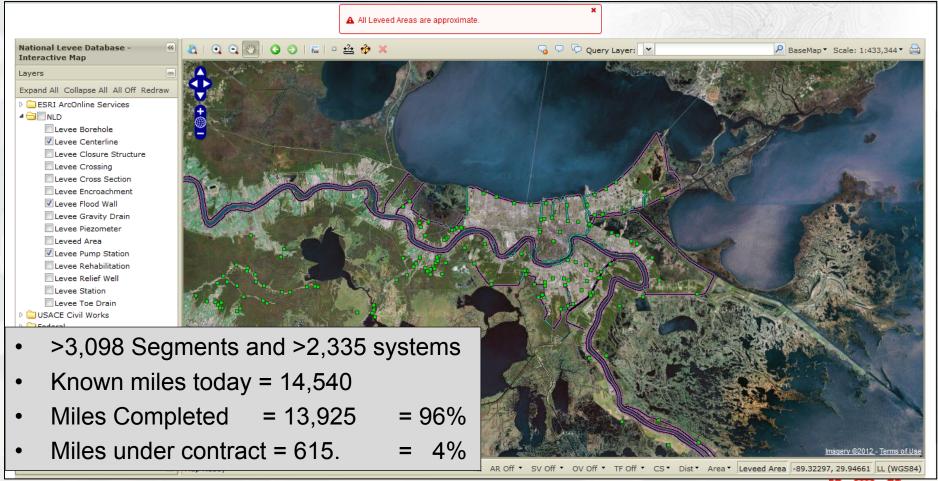
Feature Description:

- Feature: levee_centerline
- Primary Key (PK): Levee_ID
- Foreign Key (FK):FC_Segment_ID (aka Segment)
- _d: Indicates Domain Attribute (pick list of values)

levee_centerline							
PK	Levee_ID						
FK1	FC_Segment_ID Up_River_Mile Down_River_Mile Feature_Name Feature_Length Gage_Code Gage_Owner Slope_Landside Slope_Waterside Bank_d Coordinate_Method_d Cutoff_Type_d Levee_Type_d Primary_Material_d Crest_Width Crest_Access Flood_Source Horiz_Accuracy Vert_Accuracy Vert_Accuracy Status_d Survey_Date Comments River_Basin ^						



National Levee Database Public View



Getting Data In – Non USACE

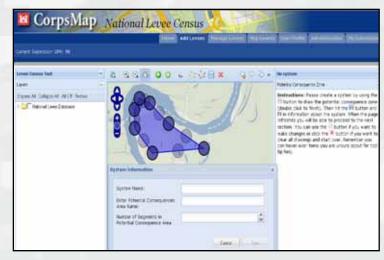


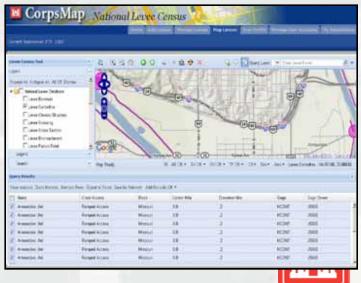
Data Management Tool

Developed as a tool to allow external stakeholders the ability to contribute and manage their levee data to establish a comprehensive levee inventory

Target State

- Real-time data integration with NI D
- ► Allow users to import levee data from existing data sets (e.g., .shp, excel, and PGDB files)
- ▶ Provide auditing and change management capability for user submissions
- Standardized review/approval process



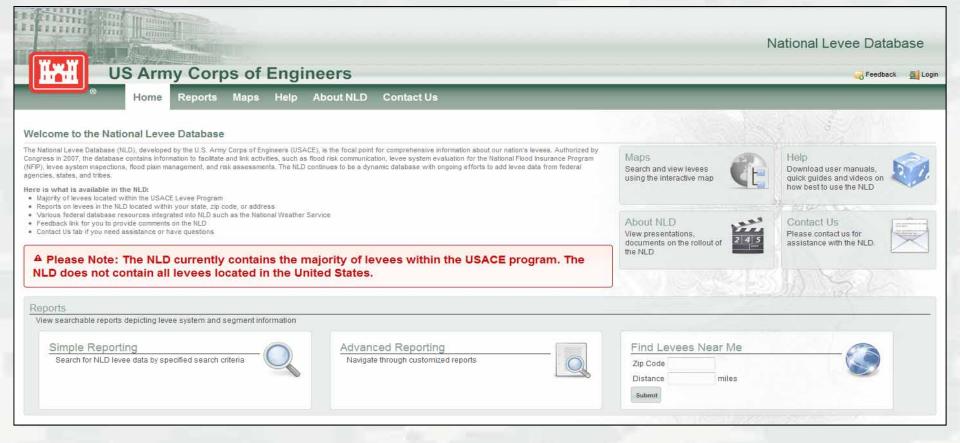


Data fields slide/ Minimum Requirements

- Leveed Area (Polygon)
- Leveed Area Name
- System Name
- Number of Segments in System
- Segment Name
- Authorization Type
- Owner/Contact (replaces Sponsor)
- Segment(s) length(s)



National Levee Database http://nld.usace.army.mil





Access Code Required...

- Information on critical infrastructure
 - ► Inspection Reports
 - ▶ Distress Points on levees
 - ▶ Details on any deficiencies
- Ability to aggregate certain data/reports
 - Make more difficult to collect data into single report
- Access to FOUO/Agency Information



National Levee Database (NLD) Reports/Mapping

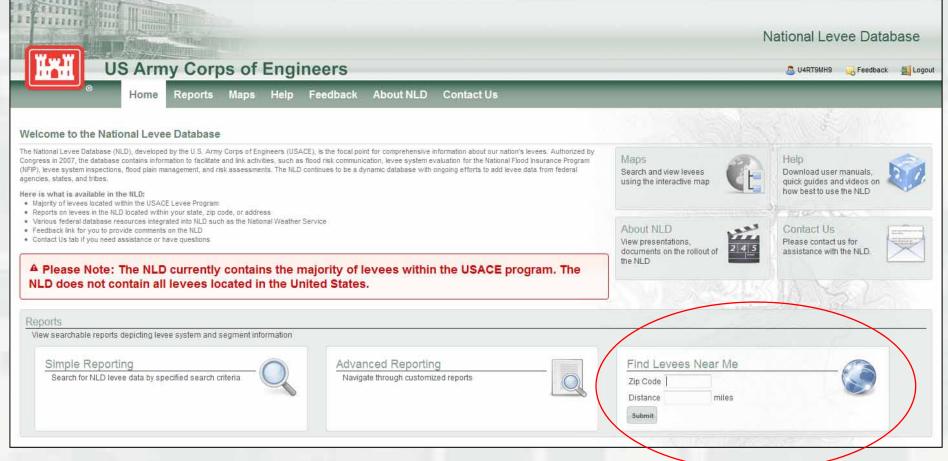


NLD Public Access http://nld.usace.army.mil



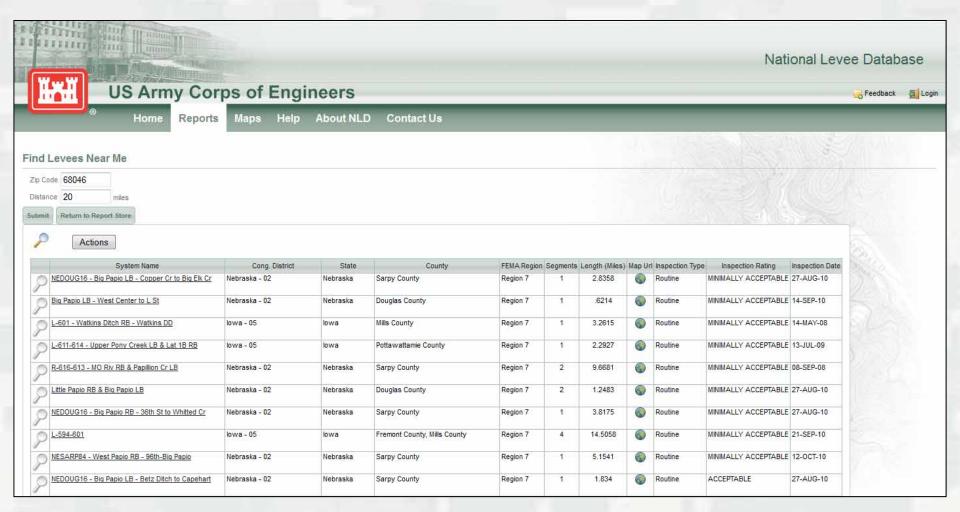


National Levee Database http://nld.usace.army.mil



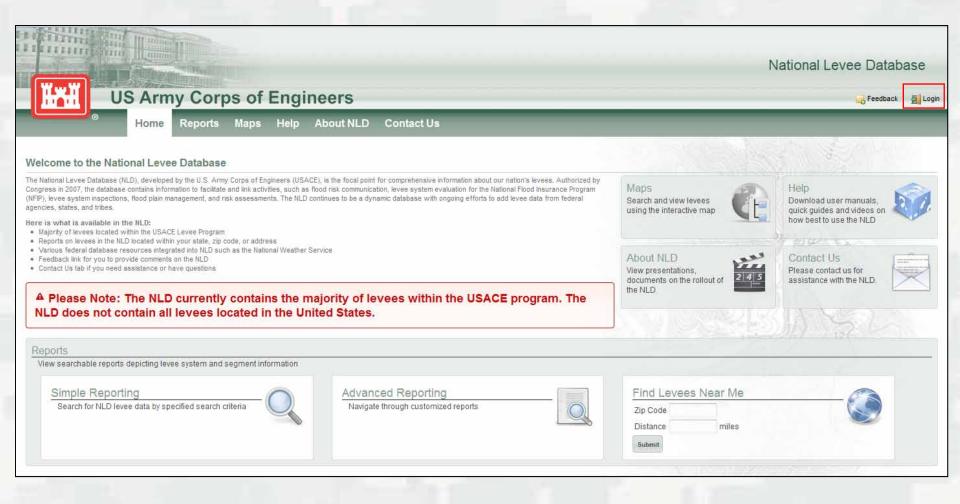


Find a Levee Near Me





NLD Authenticated Access





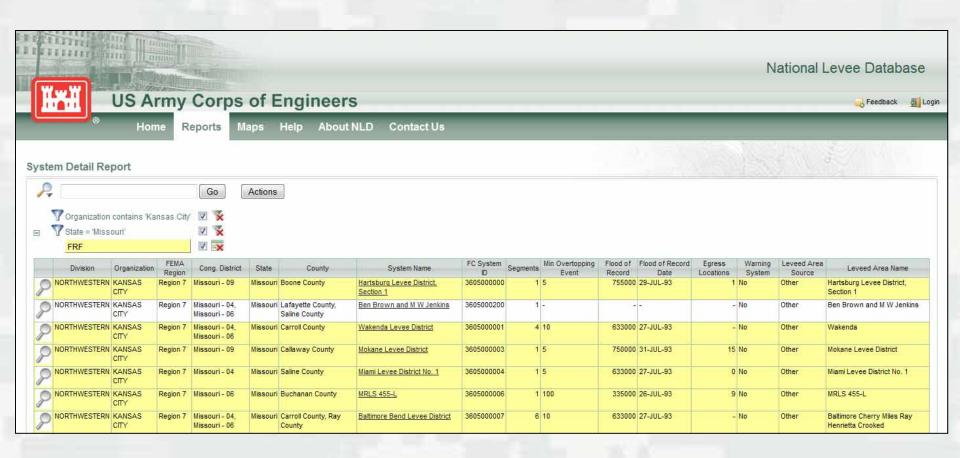
NLD Authenticated Access



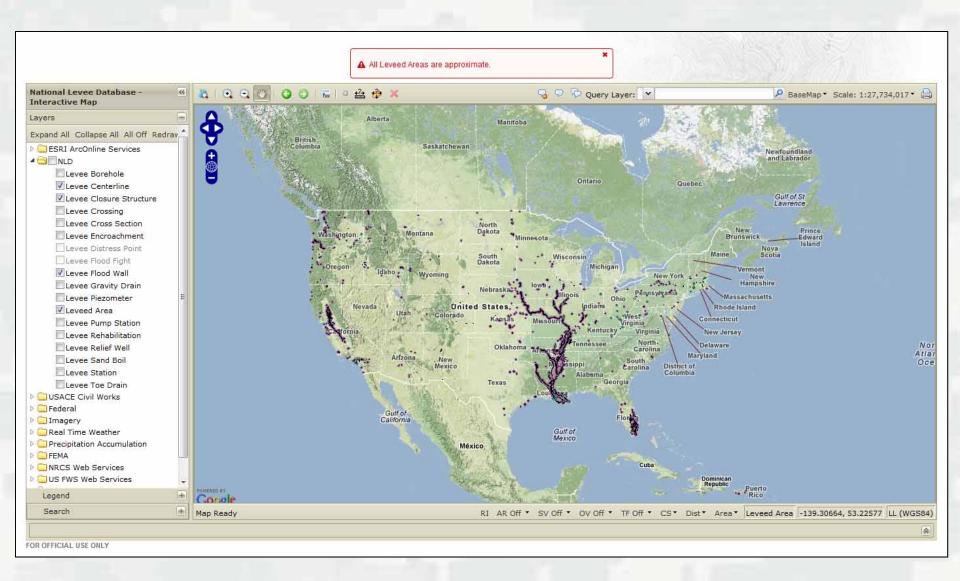




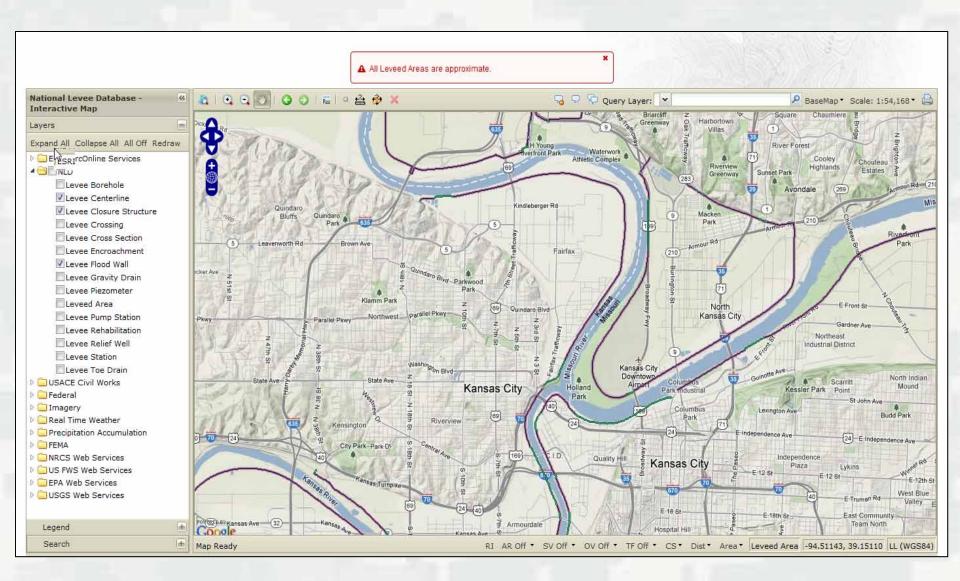
NORTHWESTERN OMAH. NORTHWESTERN OMAH. NORTHWESTERN OMAH. NORTHWESTERN OMAH. NORTHWESTERN OMAH. NORTHWESTERN OMAH.	MAHA F	Region 7 Region 7 Region 7		lowa	Morton County Woodbury County Monona County Monona County, Woodbury County Monona	Mandan - Lower Heart River LB North Little Sioux LB - Bennet-Smithland Little Sioux LB - Nagel DD South Little Sioux LB - Nagel DD North	4014 0 14 9	7 6 5	2037 5 5 4	236382 665 668 480	145059 339 482 372	497 428 297	72699 171 241 188	403571 1162 1096 777	73932 50 91 69	4927	38091 15 24	4613 5 9	35841 34 67	929 804 290
NORTHWESTERN OMAH, NORTHWESTERN OMAH, NORTHWESTERN OMAH,	MAHA F MAHA F MAHA F	7 Region I 7 Region I 7	lowa - 05 lowa - 05	lowa	County Monona County Monona County, Woodbury County	Bennet-Smithland Little Sioux LB - Nagel DD South Little Sioux LB - Nagel DD North	14	7 6 5	5	668	482	428	241	1096	91		24	9	67	290
NORTHWESTERN OMAH	MAHA F	7 Region I 7	lowa - 05	lowa	County Monona County, Woodbury County	Nagel DD South Little Sloux LB - Nagel DD North		5	5							3				
NORTHWESTERN OMAH	7	7			County, Woodbury County	Nagel DD North	9	5	4	480	372	297	188	777	69	1	6		63	2720
NORTHWESTERN OMAH	IAHA F	Region I	lowa - 05	lowa	Monona			h										8		2730
					County	Little Sioux LB & Maple River RB - Intercounty	88	40	35	4724	3864	2796	1936	7519	1064	60	490	72	574	3449
ORTHWESTERN OMAH	MAHA I	Region 7	lowa - 05	lowa	Monona County	Little Sioux Wolf Cr RB & W Fork LB - Intercounty	4	10	9	425	345	256	175	681	46	0	0	6	46	6369
	IAHA I	Region 7	lowa - 05	lowa	Monona County	Little Sioux West Fork Ditch RB - Intercounty	6	7	6	749	334	583	168	1332	49	2	15	5	35	990
ORTHWESTERN OMAH	IAHA I	Region 7	lowa - 05	lowa	Monona County	Little Sioux LB - Nagel and Intercounty DD	9	2	1	223	210	118	105	342	122	8	70	6	52	1430
ORTHWESTERN OMAH.	IAHA I	Region 7	lowa - 05	lowa	Monona County, Woodbury	Little Sioux & Wolf Creek	125	82	70	10315	6085	7392	3055	17707	1973	111	938	122	1034	11096



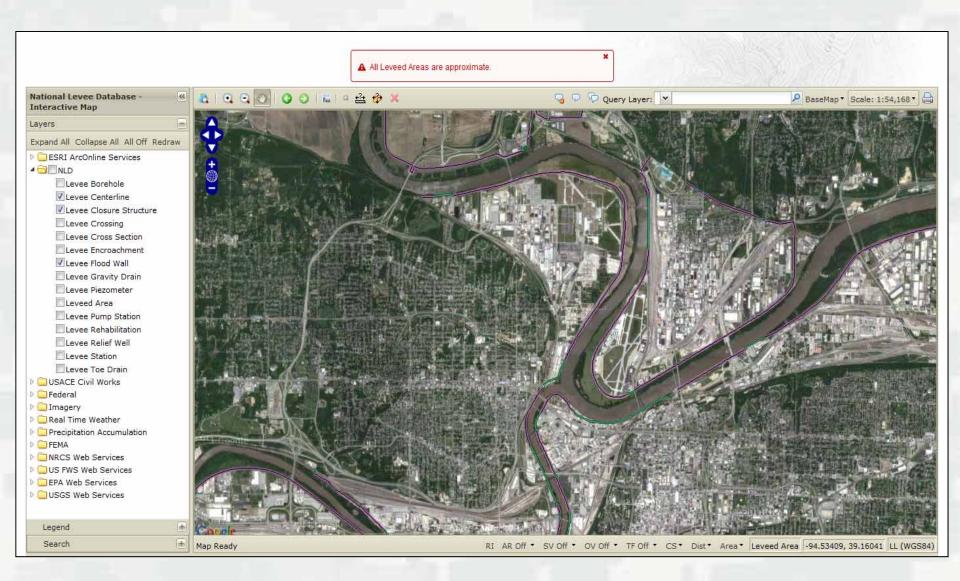




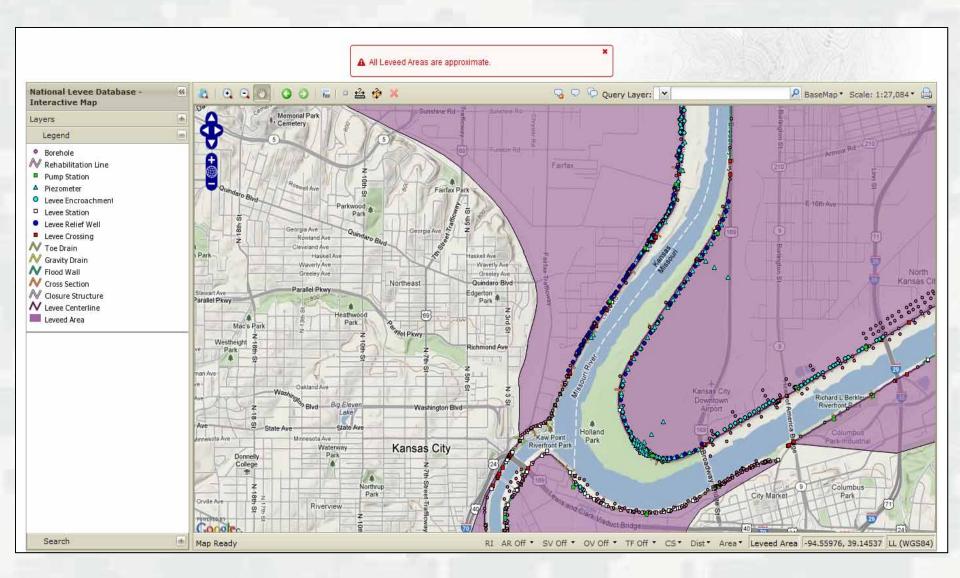




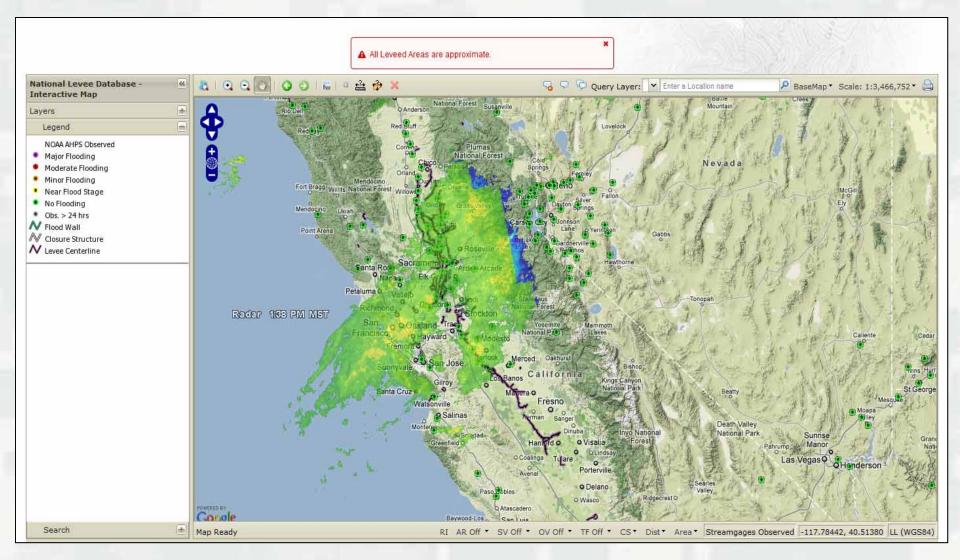














Other Sources of Information Integration of Databases

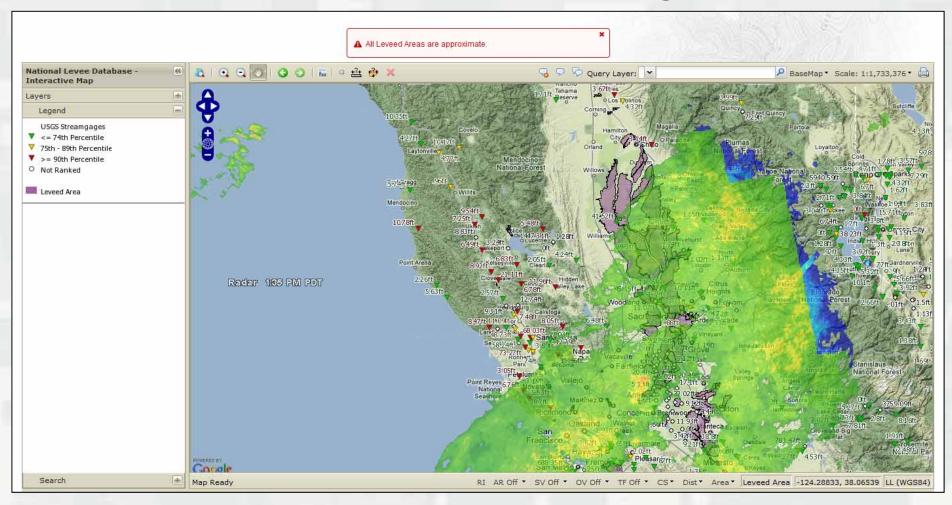
- DOT
 - ▶ Fiber Optic Lines
 - Regional Fiber Optic Lines
 - ▶ Oil and Gas Pipeline
 - Electric Transmission Line
- EPA
 - ► Regulated Facilities
 - ► EPA Regions
- NOAA
 - ▶ Stream gages Observed
 - Steam gages Forecasted
 - River Outlook
 - Real Time Radar
- NPS
 - ▶ Historic Properties





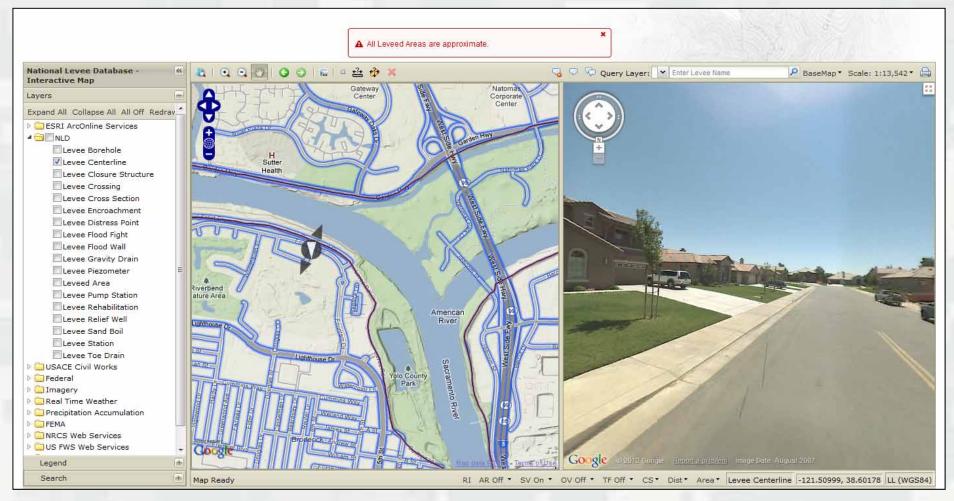


Real-Time Data Integration





Data Integration with other services





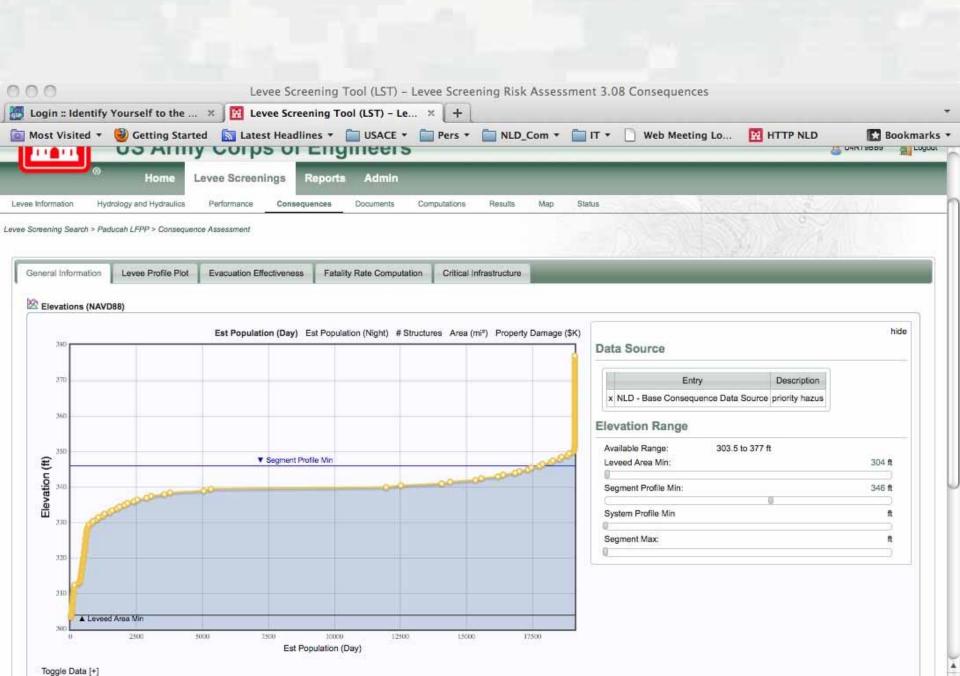
Applications

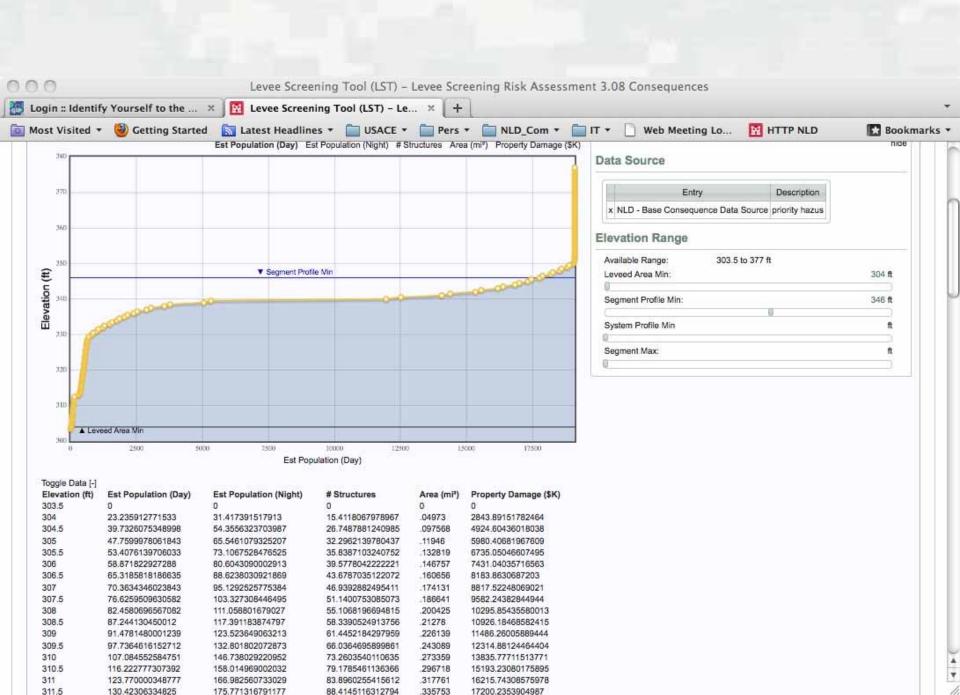


Example

Screenings and other database integrations (HSIP and HAZUS)









Critical Infrastructure

Levee Screening Search > Paducah LFPP > Consequence Assessment

Levee Profile Plot

Evacuation Effectiveness

1 - 16

Fatality Rate Computation

General Information

Infrastructure Type -	# Structures	View Details
Airports	1	A
Chemicals Industry	2	1
Colleges and Universities	3	1
Correctional Facilities	1	直
Electric Generating Units	1	1
Electric Substations	3	1
FBI	1	直
Fire Stations	2	1
Hazmat Locations	1	直
Hospitals	1	1
Law Enforcement	3	11
Museums	2	1
Oil Gas Facilities	2	道
Schools	9	直
Sewage Treatment Facilities	2	
US Oil Gas Wells	1	11

Comments

Cancel



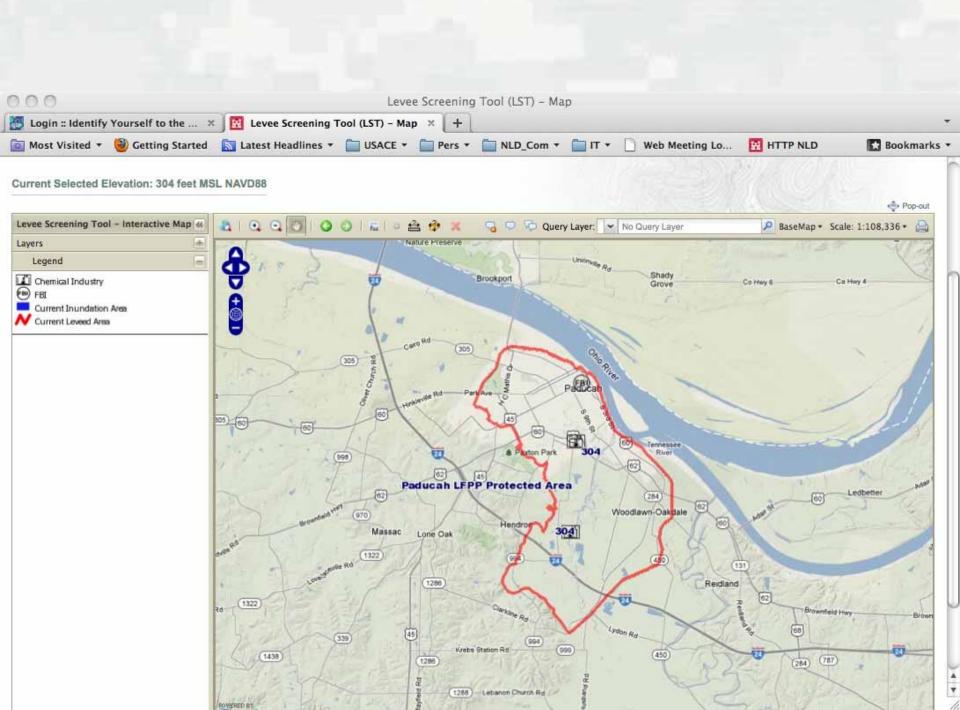
Infrastructure Type -# Structures View Details Airports Chemicals Industry Colleges and Universities Correctional Facilities Electric Generating Units Electric Substations FBI Fire Stations Hazmat Locations Hospitals Law Enforcement Museums 2 Oil Gas Facilities Schools Sewage Treatment Facilities

Infrastructure Details

US Oil Gas Wells

Infrastructure Type	Sub-type Sub-type	Name	Bounds
Law Enforcement	Paducah Police Dept. Headquarters	POLICE DEPT	(
Law Enforcement	F.B.I, Paducah Resident Office	FEDERAL BUREAU OF INVESTIGATION (FBI)	0
Law Enforcement	Mccracken County Sheriff'S Dept. Headquarters	SHERIFFS OFFICE	(4)
	N 21 27	W. C.	1-3

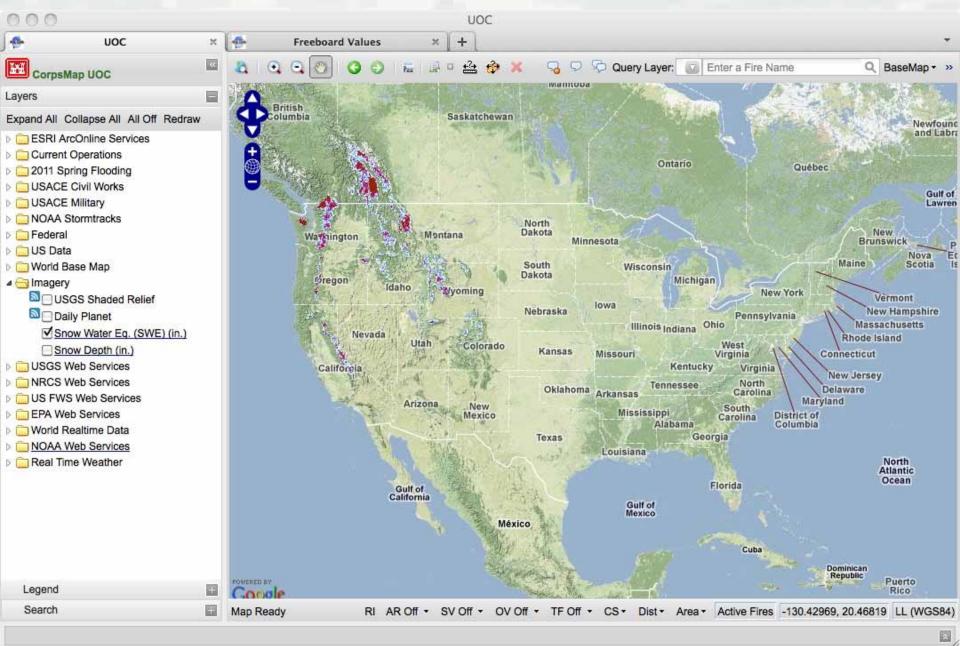
1 - 16

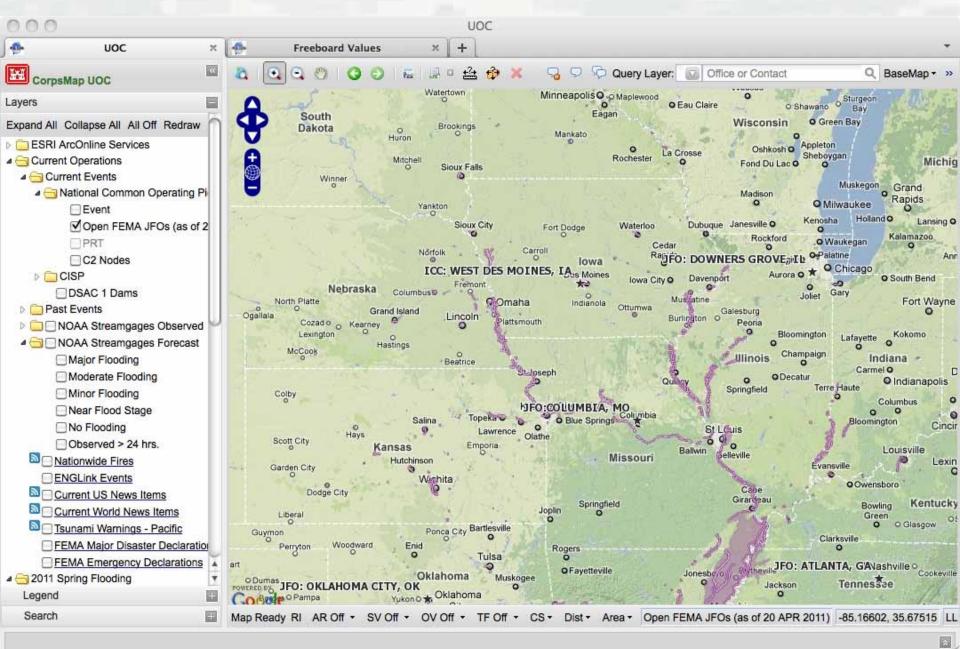


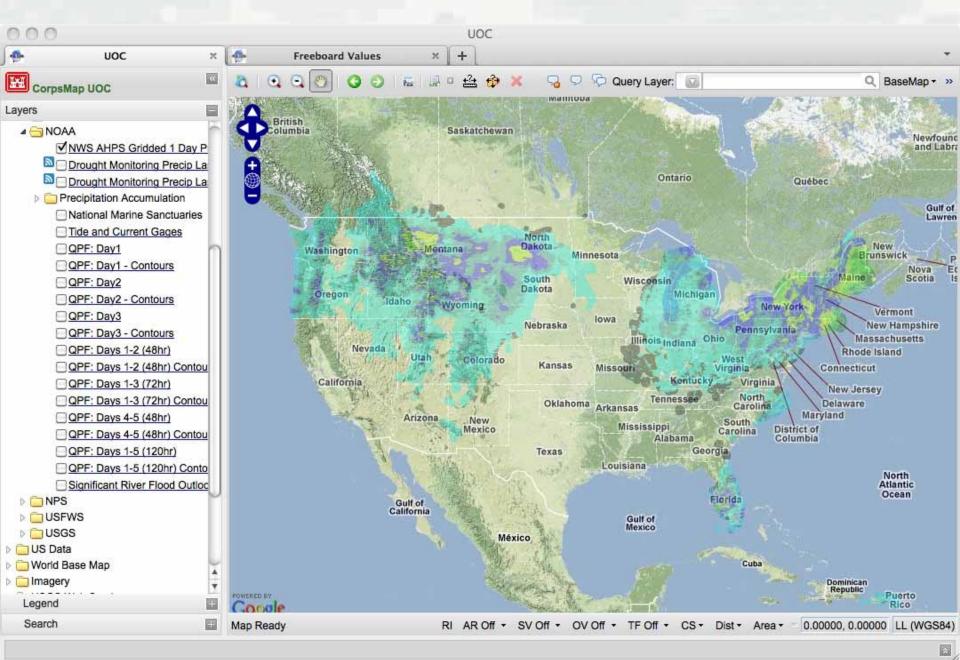
Example

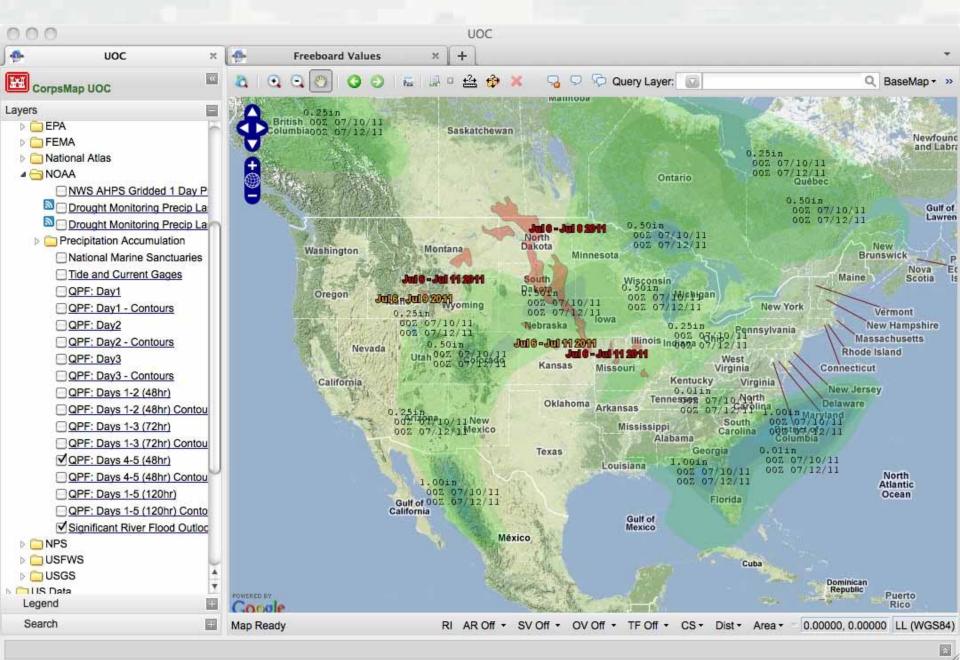
Emergency Management - Mobile

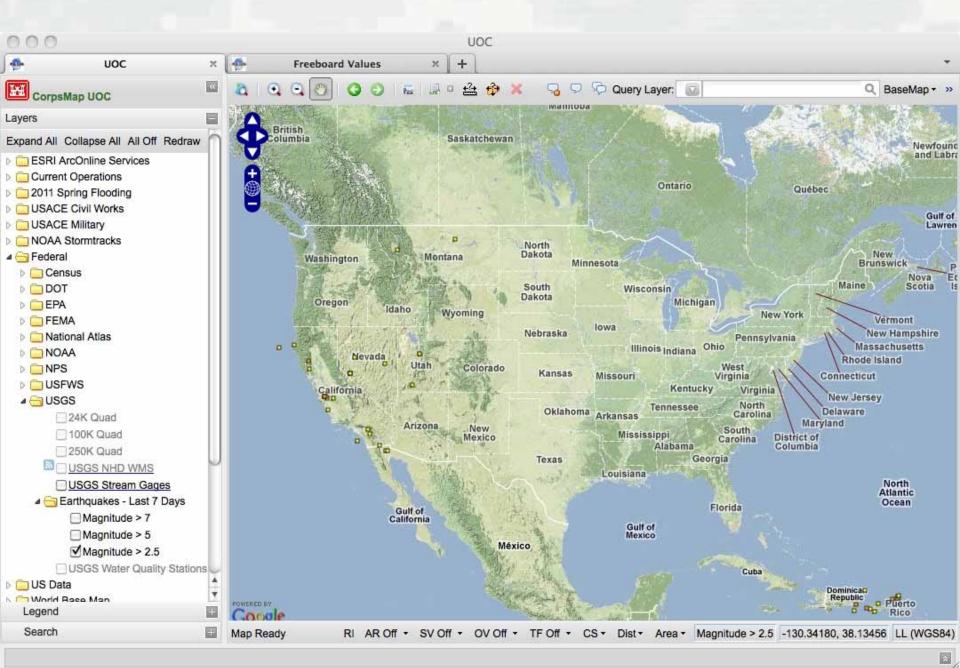


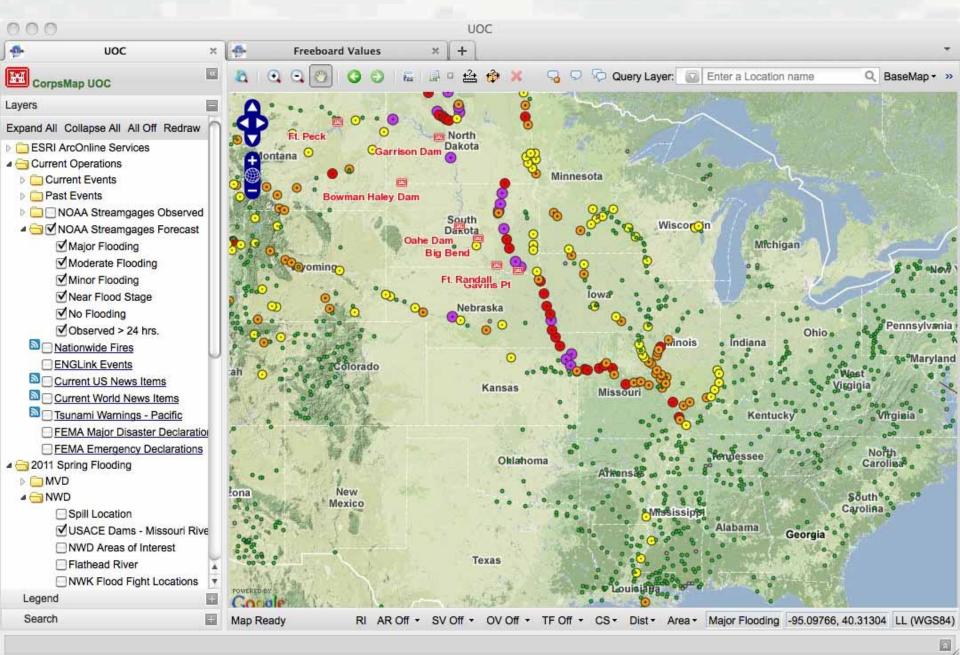


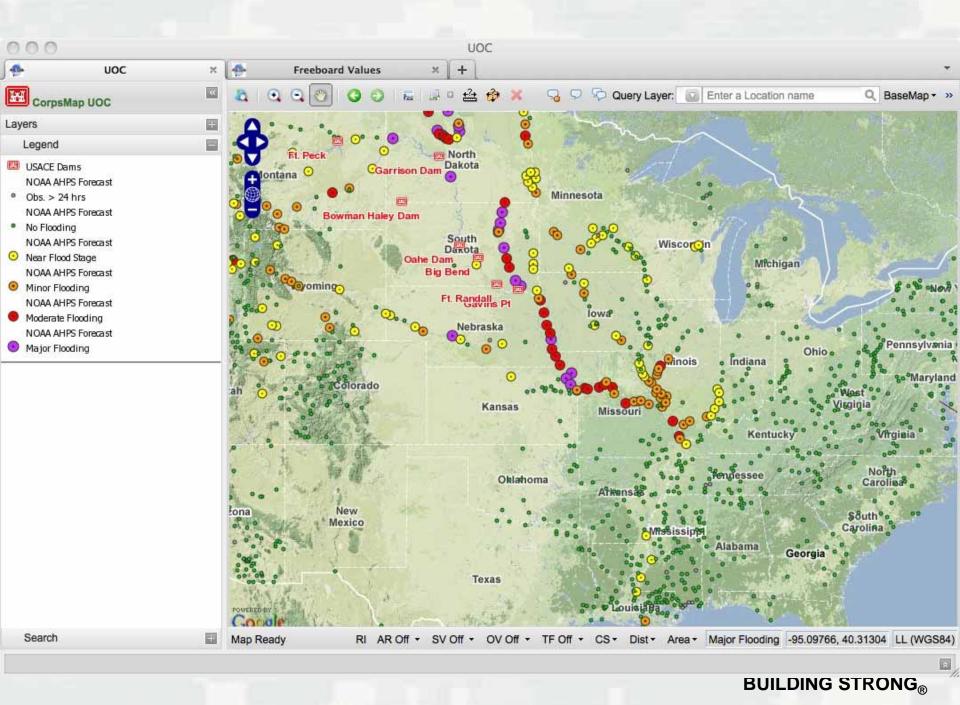


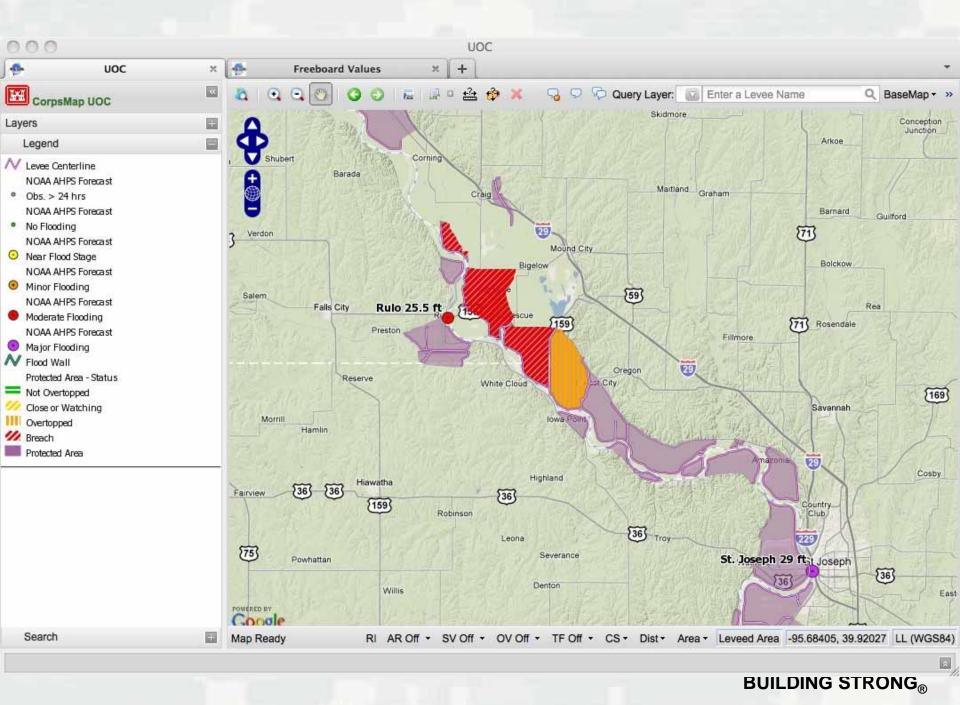


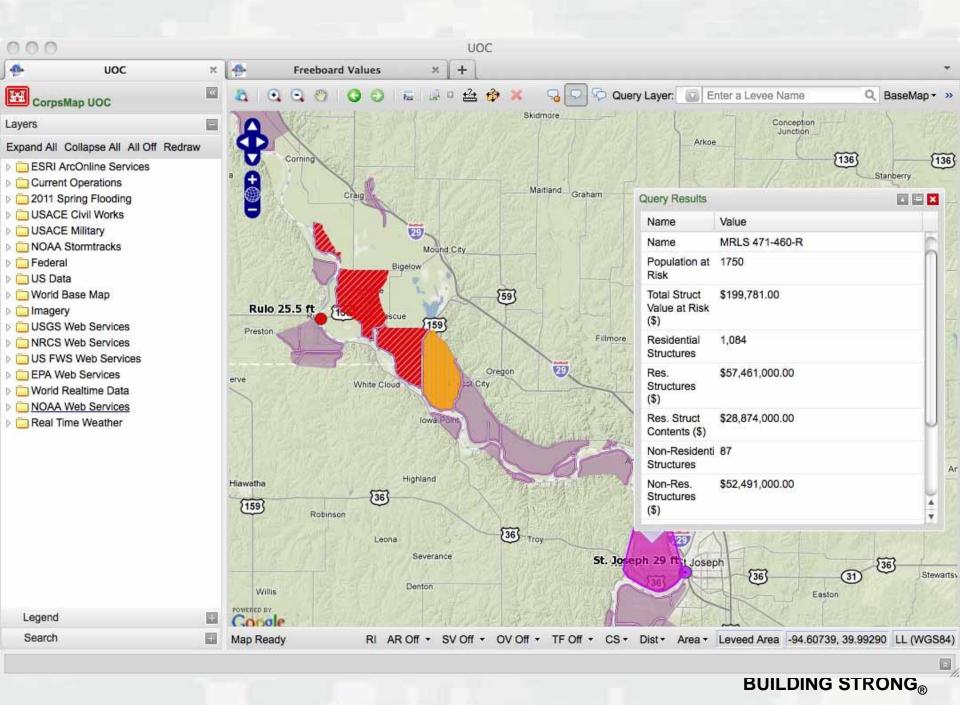


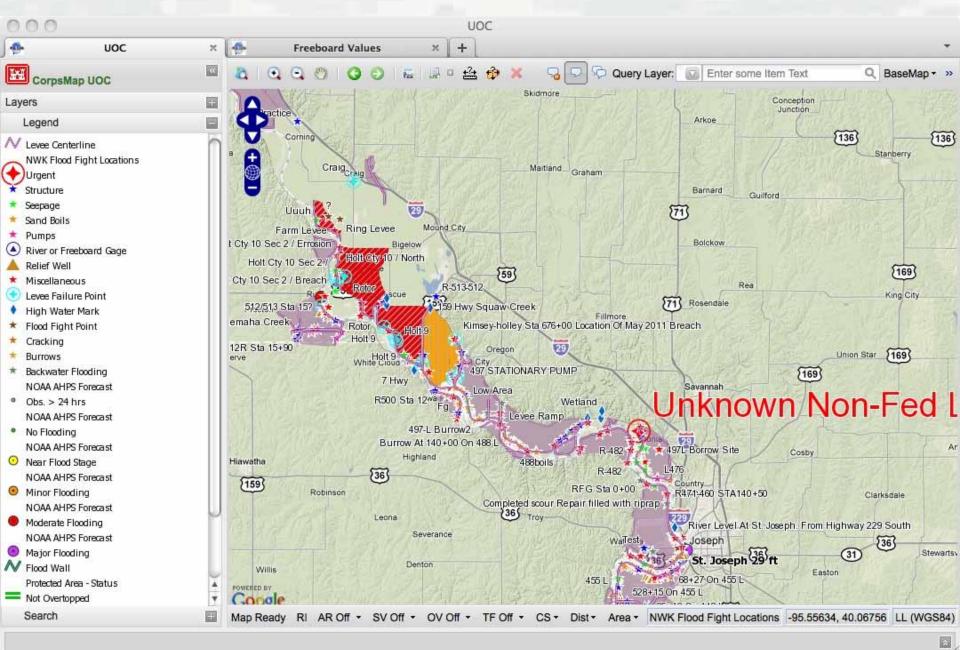


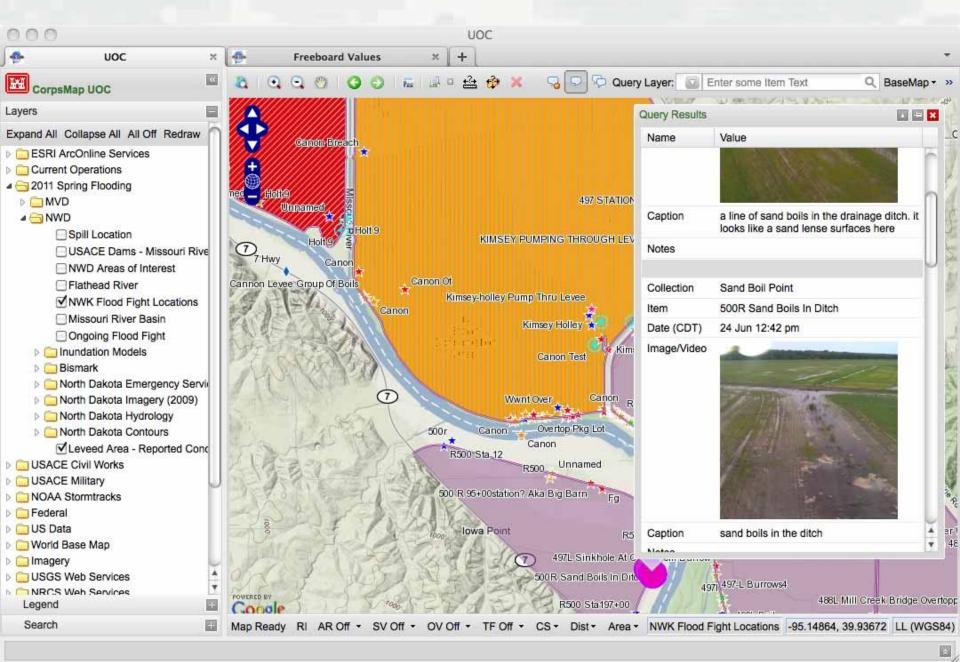


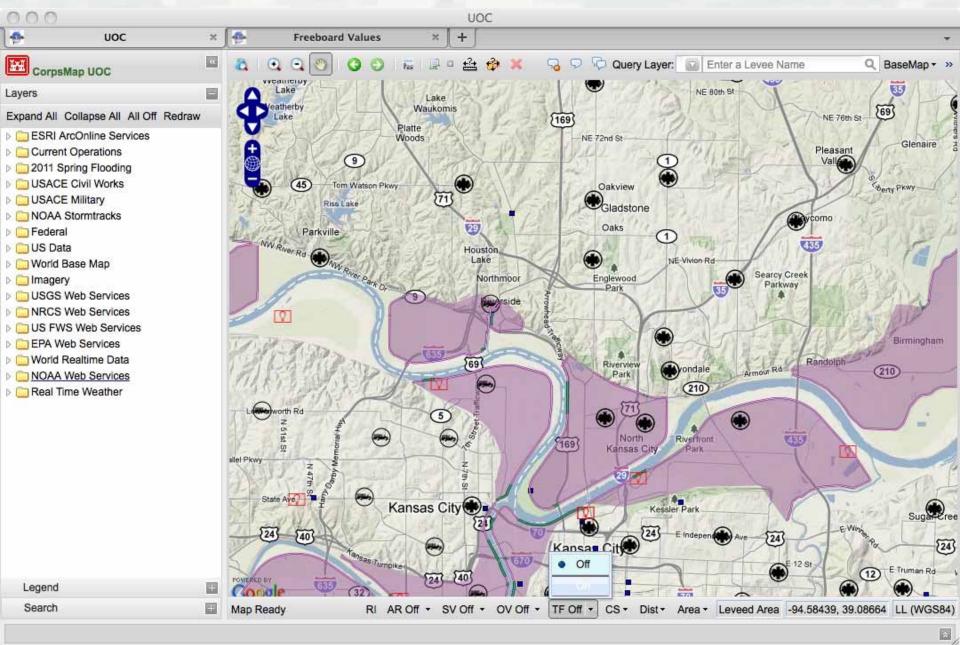


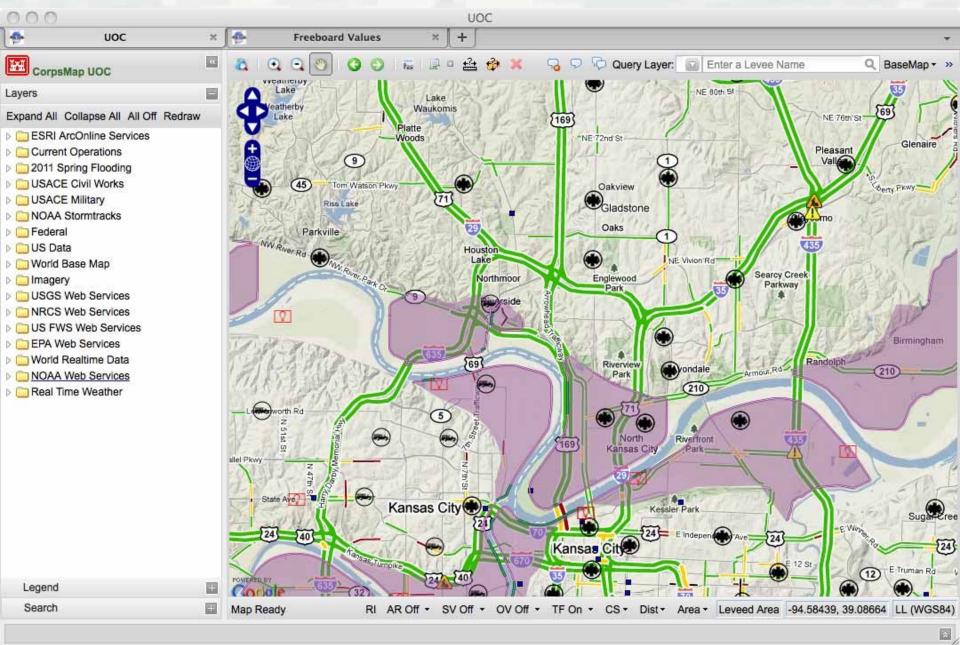


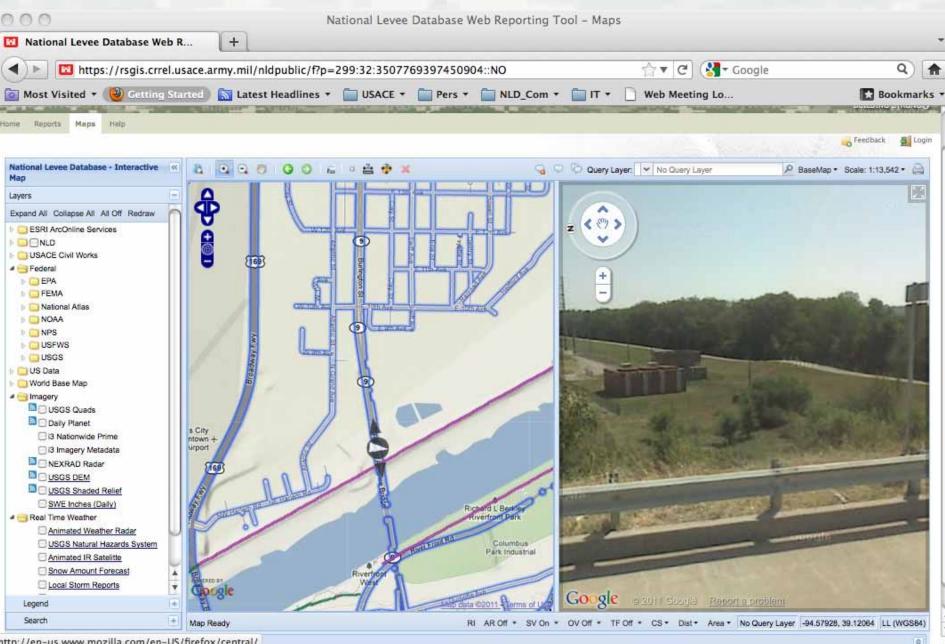








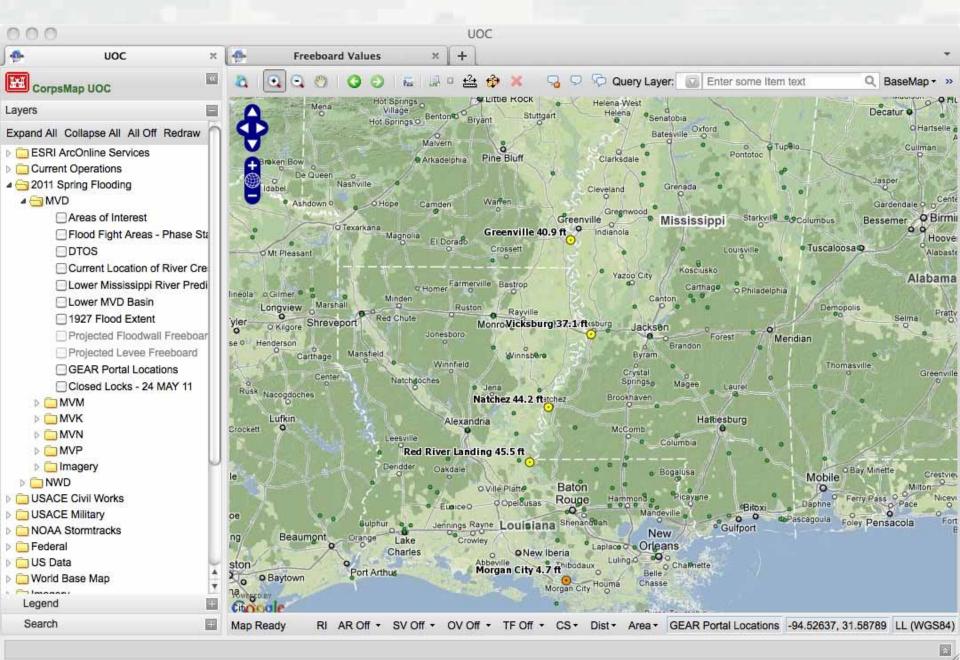


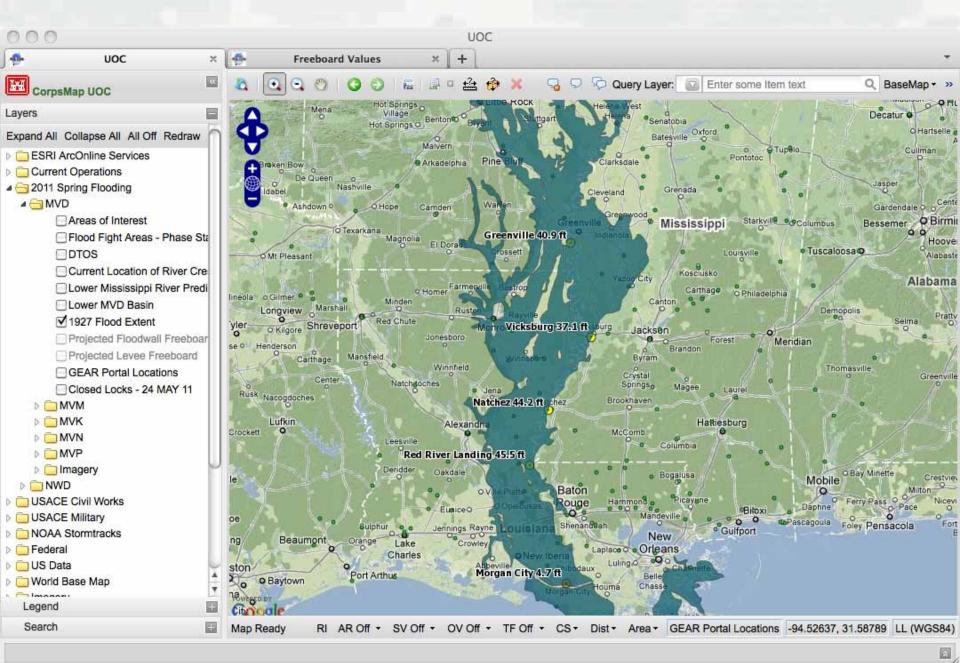


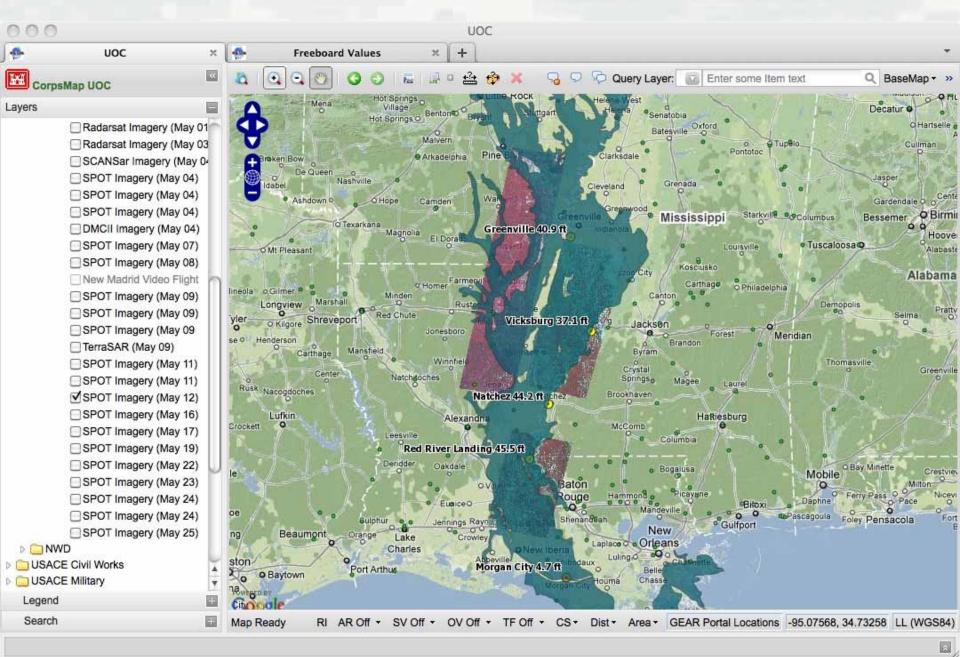
Example

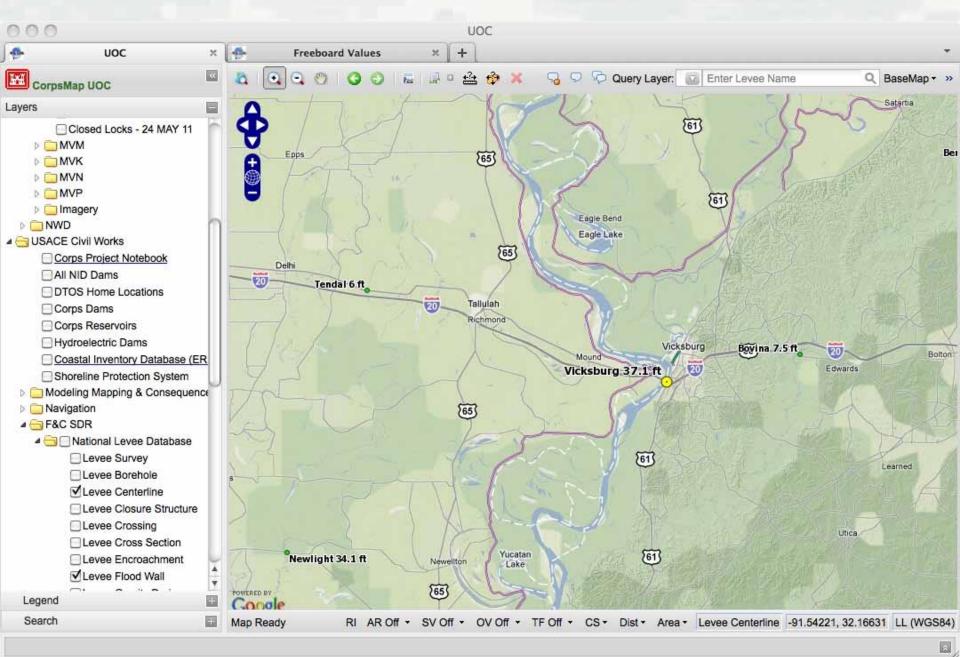
Freeboard

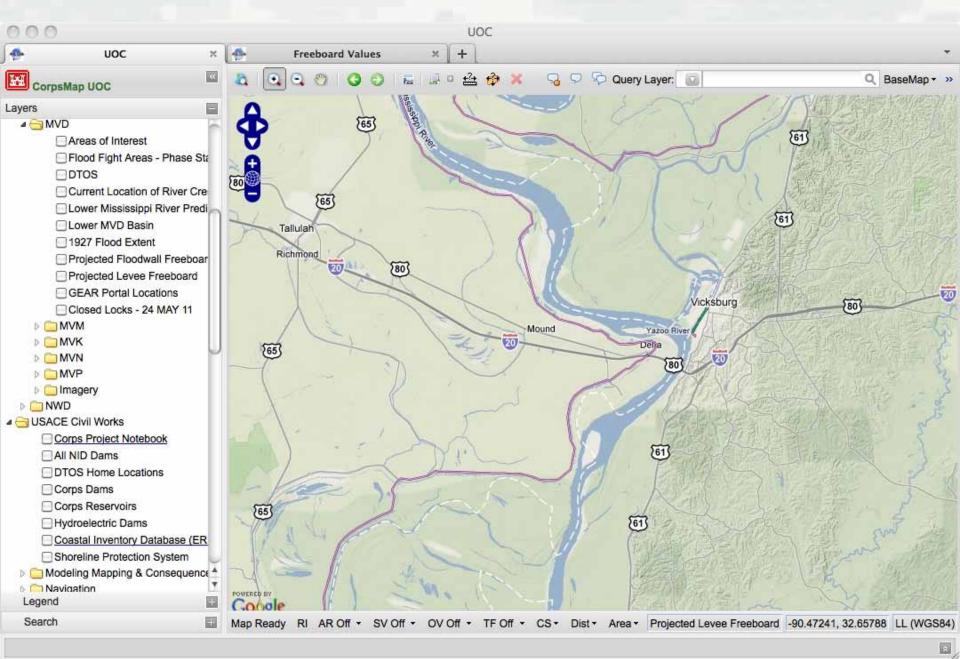


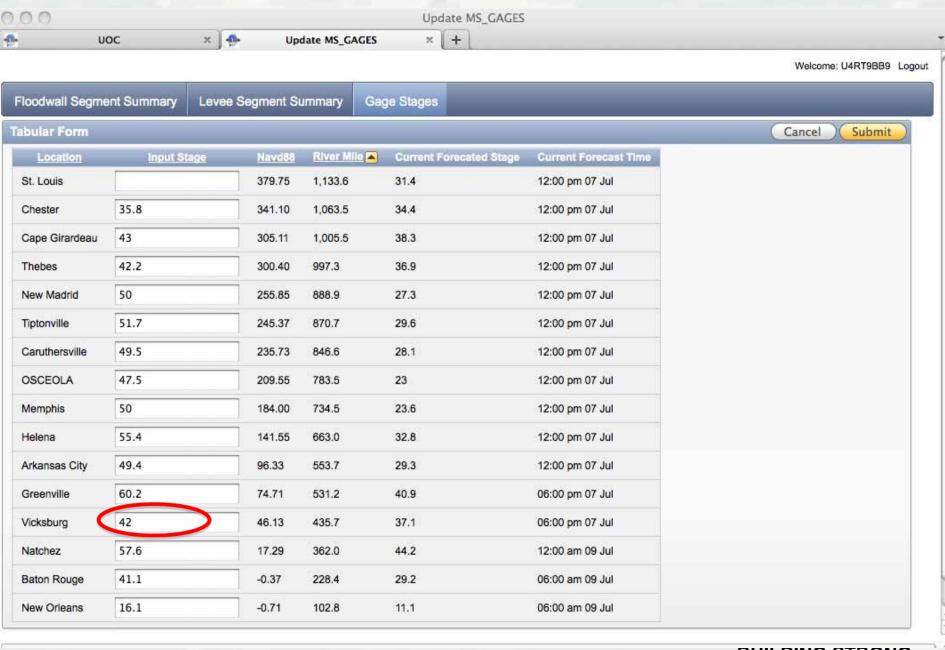


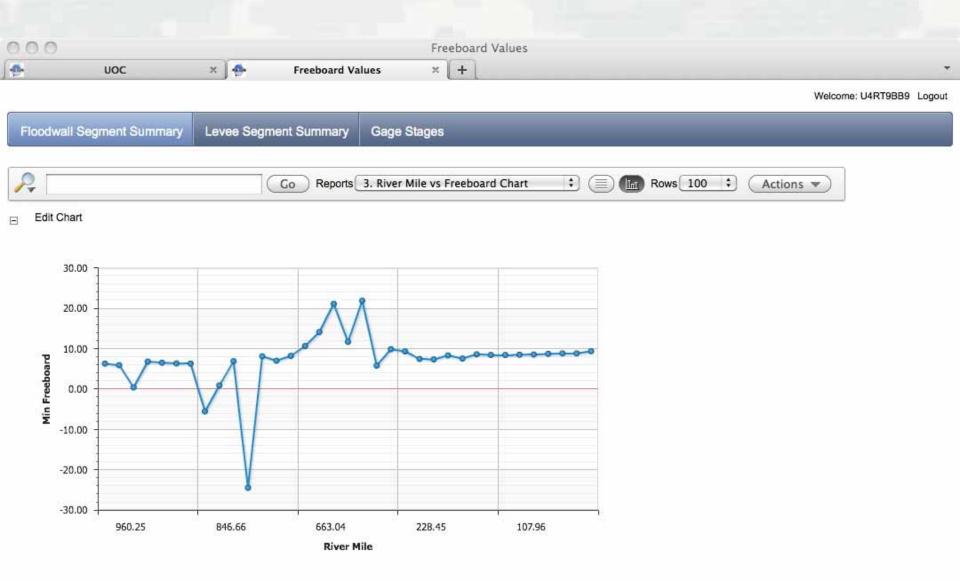


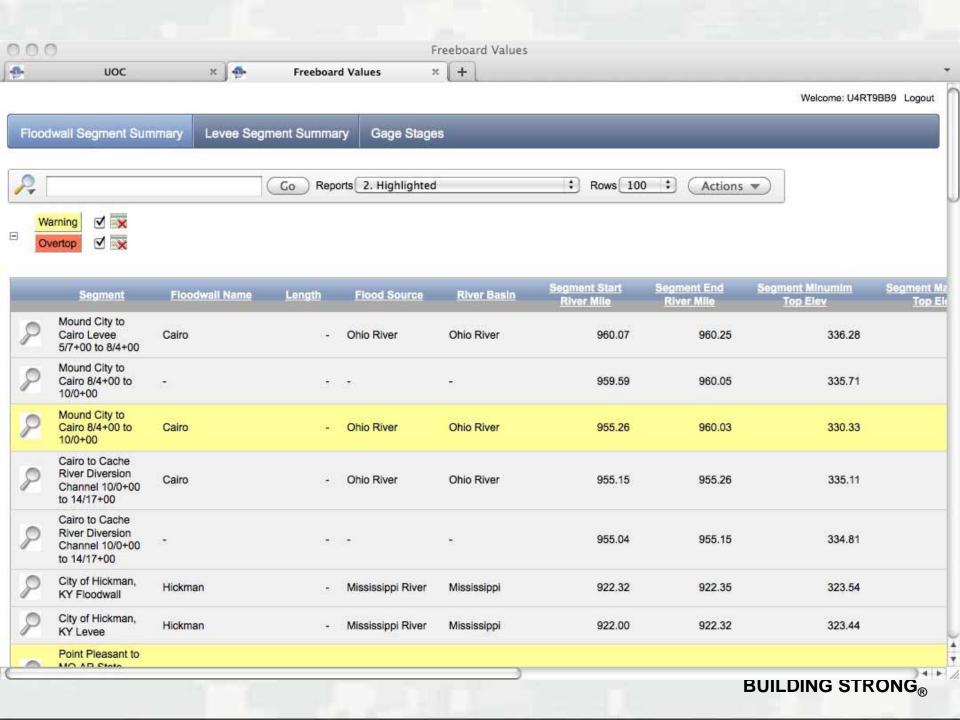


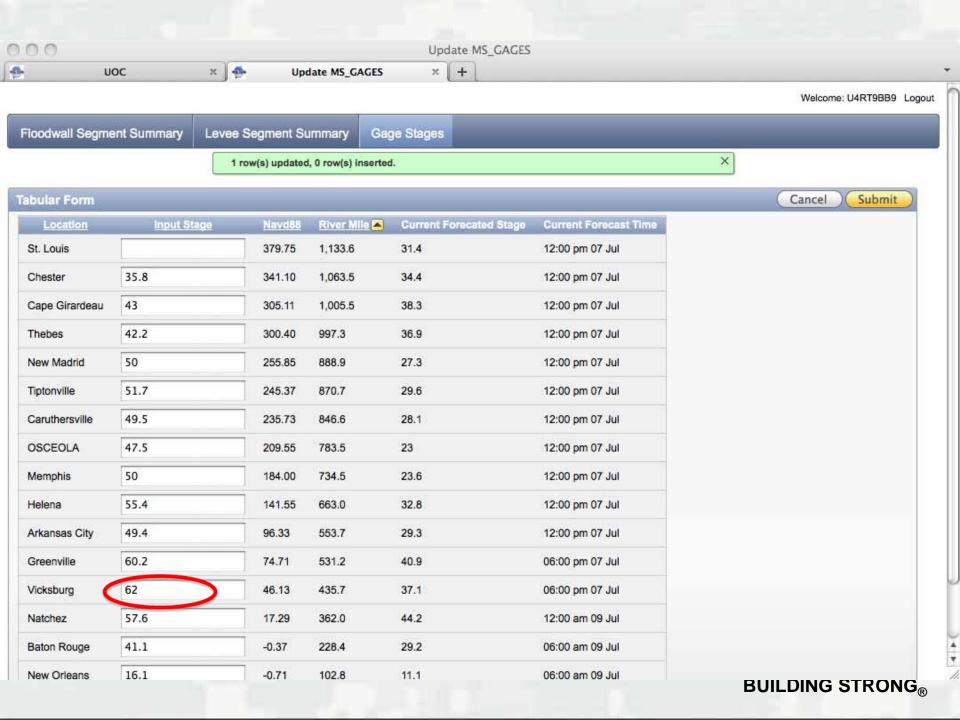


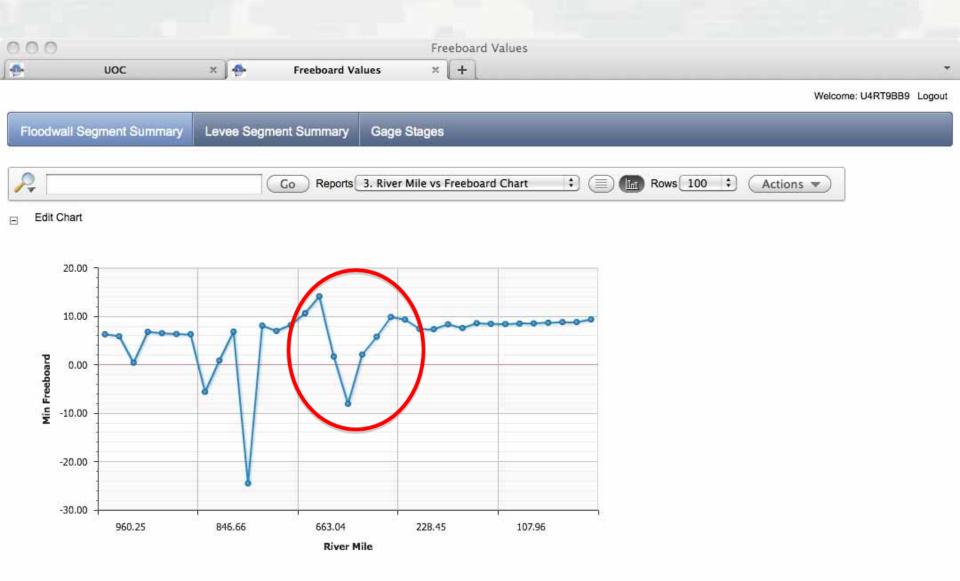


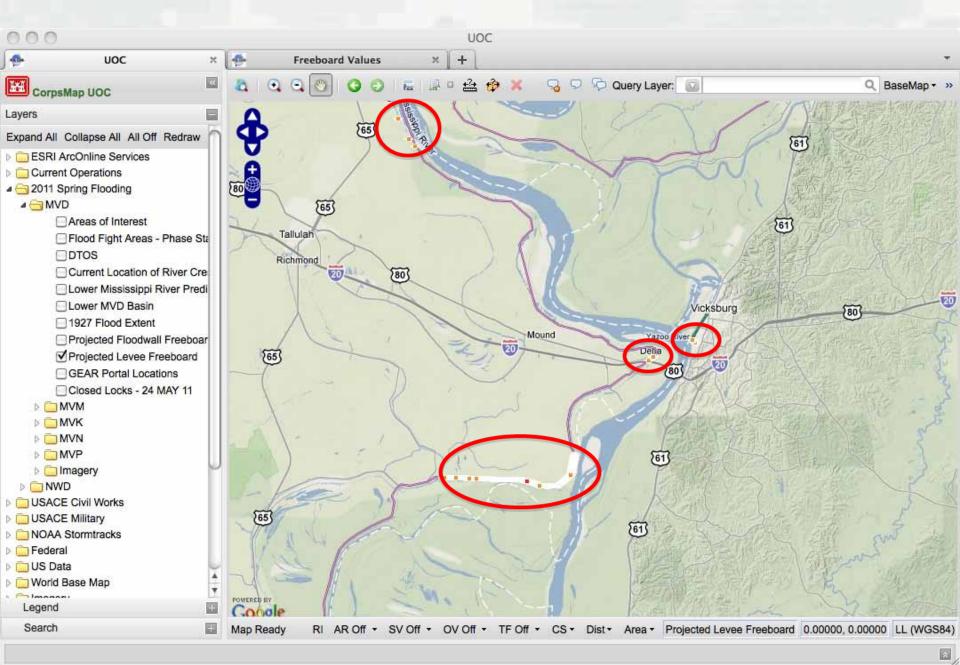












Questions?

