



United States Department of

Health & Human Services

Office of the Assistant Secretary for Preparedness and Response (ASPR)

MedMap 2.0

**Visualizing & Coordinating Health Assets
from HQ to “boots on the ground”**



MEDMAP

Robert Shankman

**2010 ESRI Health GIS Conference
Denver Colorado**



MEDMAP

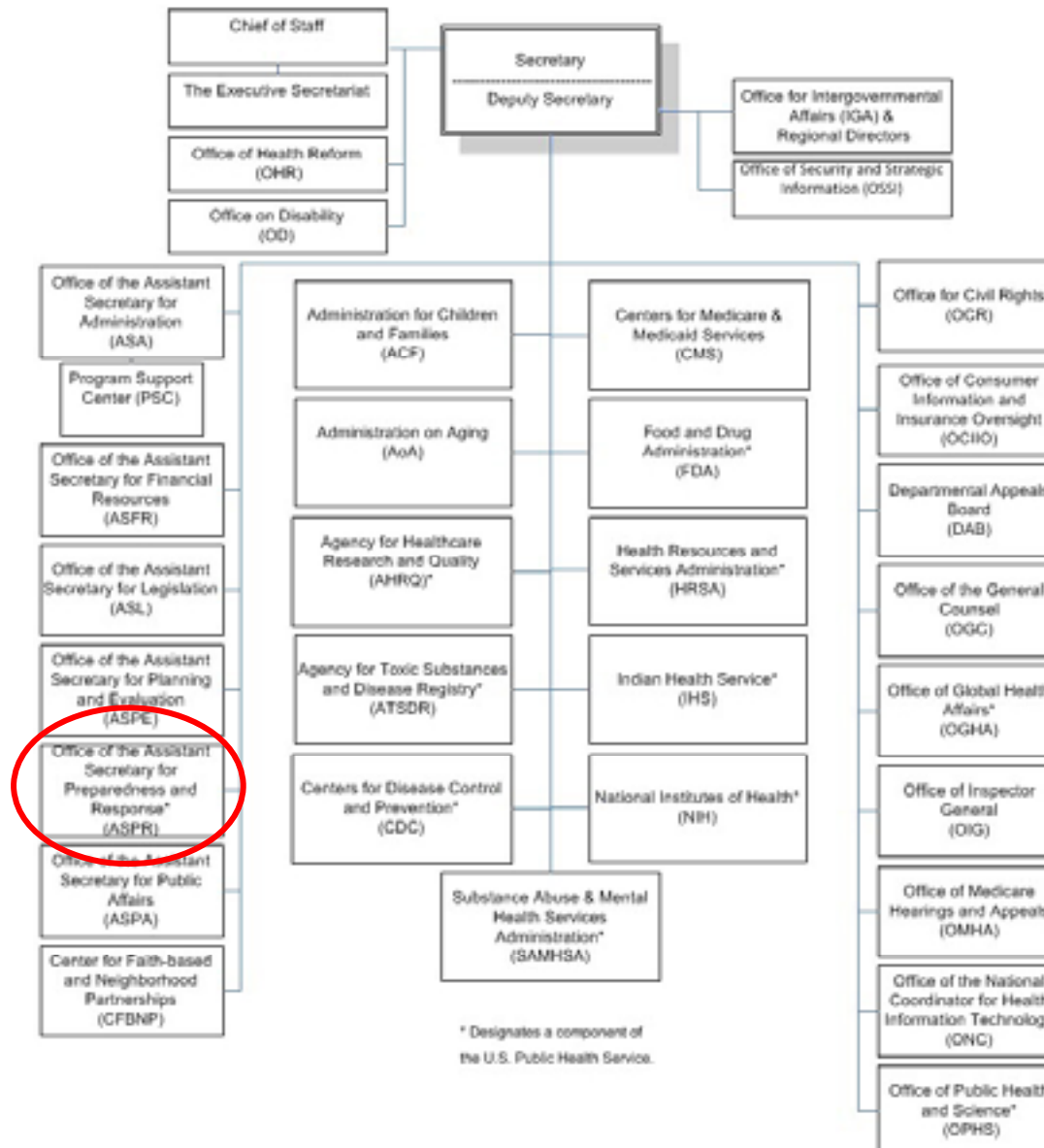
CDC

SAFER • HEALTHIER • PEOPLE™





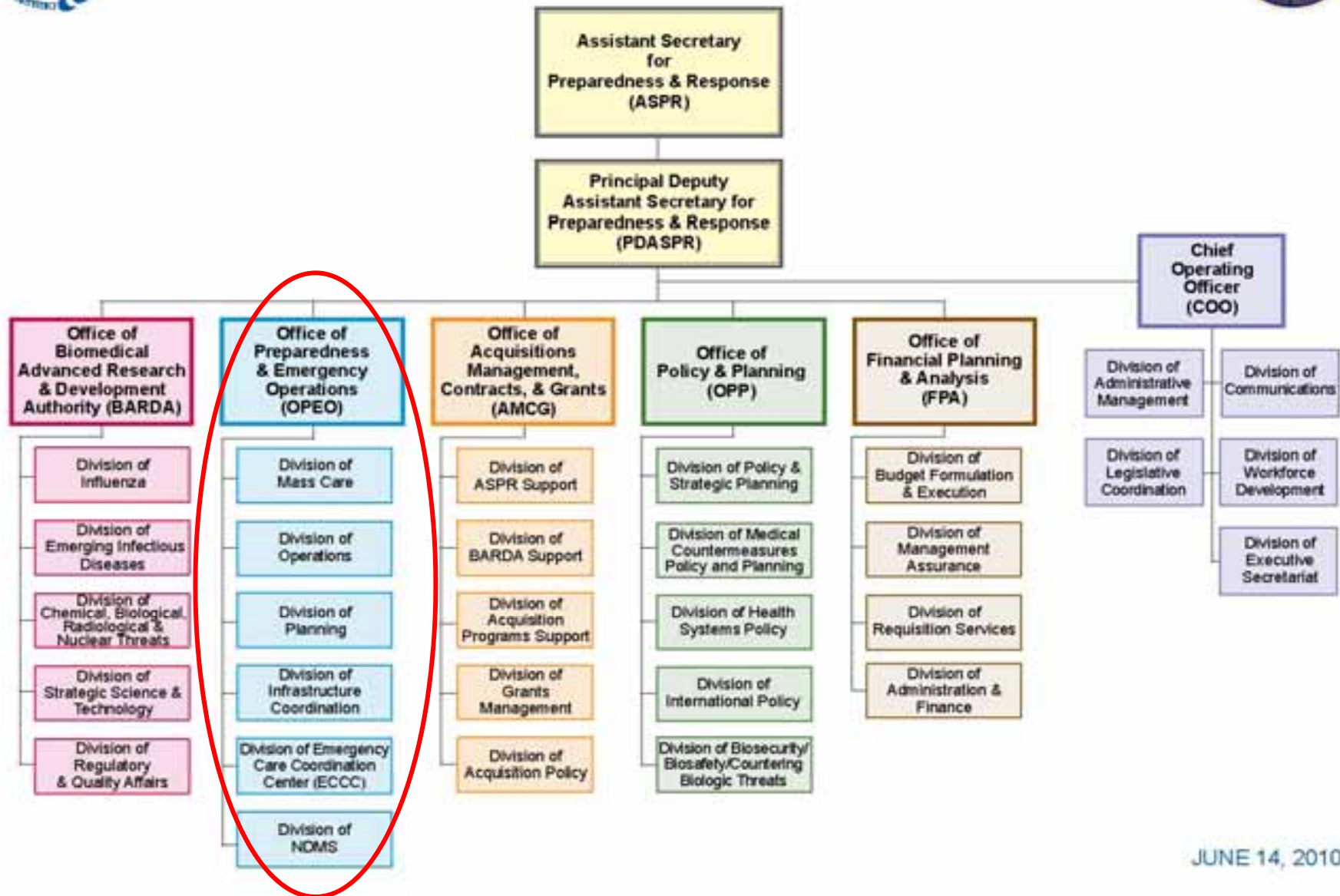
Department of Health & Human Services





Office of the Assistant Secretary for Preparedness & Response

ASPR ORGANIZATION STRUCTURE AS APPROVED BY THE HHS SECRETARY



JUNE 14, 2010



Map & Data Deployment Pre-MedMap



- Prior method of getting information to senior leaders and to staff



HHS - ESF 6/8 - Reg 6 - Phase 2 - Concern HURRICANE IKE - Equipment Assets



GEOSPATIAL PUBLIC HEALTH PREPAREDNESS PROGRAM - U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES



Austin, TX
2 DMAT Caches
5 DMAT Rx Caches
5 ST Kits
3 FMS Community Health Kits

Dallas, TX
4 FMS (Staged)
1 DMAT Cache
1 DMAT RX Cache
2 ST Kits
1 DPMU

College Station, TX
2 FMS
1 RX Cache
3 ST Kits

Houston TX
George Brown Convention Ctr.
- 1 DMAT Cache
- 1 RX Cache
- 2 ST Kit

Rice University/Texas Medical Ctr.
- 2 DMAT Caches
- 2 Rx Caches
- 1 ST Kit

Total
12 DMAT Cache
5 FMS (Active)
400 Ambulances

San Antonio, TX
Winn Building:
- 2 FMS
Kelly AFB:
- 1 FMS
Trinity Tri-point:
- 1 DMAT Cache
- 1 RX cache

Webster, TX
2 DMAT Cache
2 RX Cache

Lamarque, TX
- 1 DMAT Cache

Galveston, TX
UTMCC:
- 1 DMAT Cache
- 1 RX Cache
- 2 ST Kits

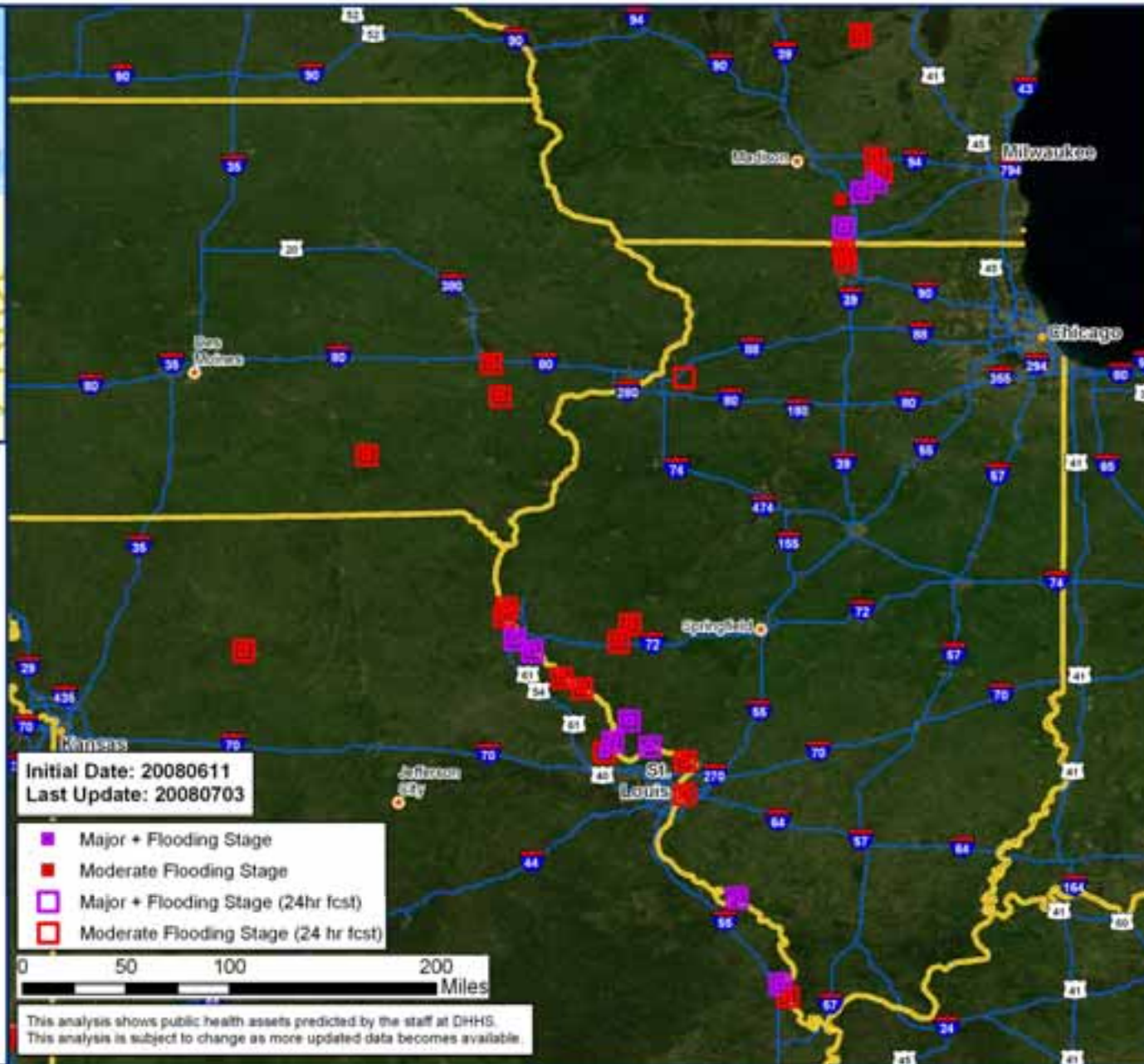
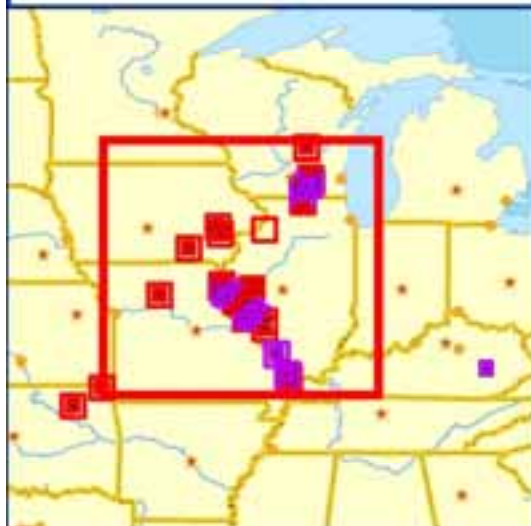
BEAUMONT
Ford Park Center:
- 1 DMAT Caches
- 1 RX Cache
- 2 ST Kits



HHS - ESF 6/8 - R5&7 - Phase 1-Awareness Severe Weather - River Gauge Levels



GEOSPATIAL PUBLIC HEALTH PREPAREDNESS PROGRAM - U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES





HHS - ESF 6/8 - Reg 6 - Phase 2 - Concern HURRICANE IKE - GULF OF MEXICO



GEOSPATIAL PUBLIC HEALTH PREPAREDNESS PROGRAM - U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES



FORECASTED LOCATIONS

MPHWIND

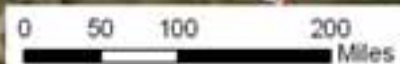
- 15 - 35 (DEP)
- 36 - 73 (STORM)
- 74 - 95 (CAT 1)
- 96 - 110 (CAT 2)
- 111 - 130 (CAT 3)
- 131 - 155 (CAT 4)
- 156 - 200 (CAT 5)

Forecasted Track
 Historic Track

Error Cone

HOURS

- 72
- 120



ADVISORY #46 - 20080912 - 1100EDT - Hurricane Ike





-
- Prior method of getting information to senior leaders and to staff
 - Creation of web enabled viewer called “MedMap”



History



- Rapid Development & Deployment January through June of 2009
- Goals
 - Generic Mapping
 - Secure log-in page to the MedMap web-based application
 - Google Maps functionality
 - Create driving directions with ability to avoid hazards
 - Data
 - Access the GIS database at HHS HQ which includes LandScan, Billian's Health Data, ADAMS, and all DHS provided (HSIP) data layers
 - Data downloaded and used based on events (SLOSH, Hurricanes, shelter status, forest fires, etc.)
 - HHS data kept behind firewall and not shared/accessed by Google or any outside data provider
 - Data layers loaded based on user assigned group, user can turn layers and user created shapes on/off as needed
 - View events of interest generated by SOC GIS staff



- Queries
 - Identify items based on distance from a selected feature
 - Perform spatial query intersections between visible layers and user-defined shapes with optional buffer distance
 - Run queries based on playbook values
- Collaboration
 - Create personalized views of maps and share with other users
 - Share data layers and query results with other group members
 - Group and user permissions control access to sensitive data



-
- Prior method of getting information to senior leaders and to staff
 - Creation of web enabled viewer called “MedMap”
 - **Current statistics, integration & limitations**



Statistics



- From prototype to implementation in less than 6 months
- 325+ user accounts from multiple Federal and coordinating agencies (growing daily)
- 950+ data layers in 110+ layer groups
- Streaming and daily downloads (inc. NOAA, USGS)
- Used for recent responses and has become COP for ASPR and CDC
- Working on data sharing projects with other federal departments and ESF#8 partners



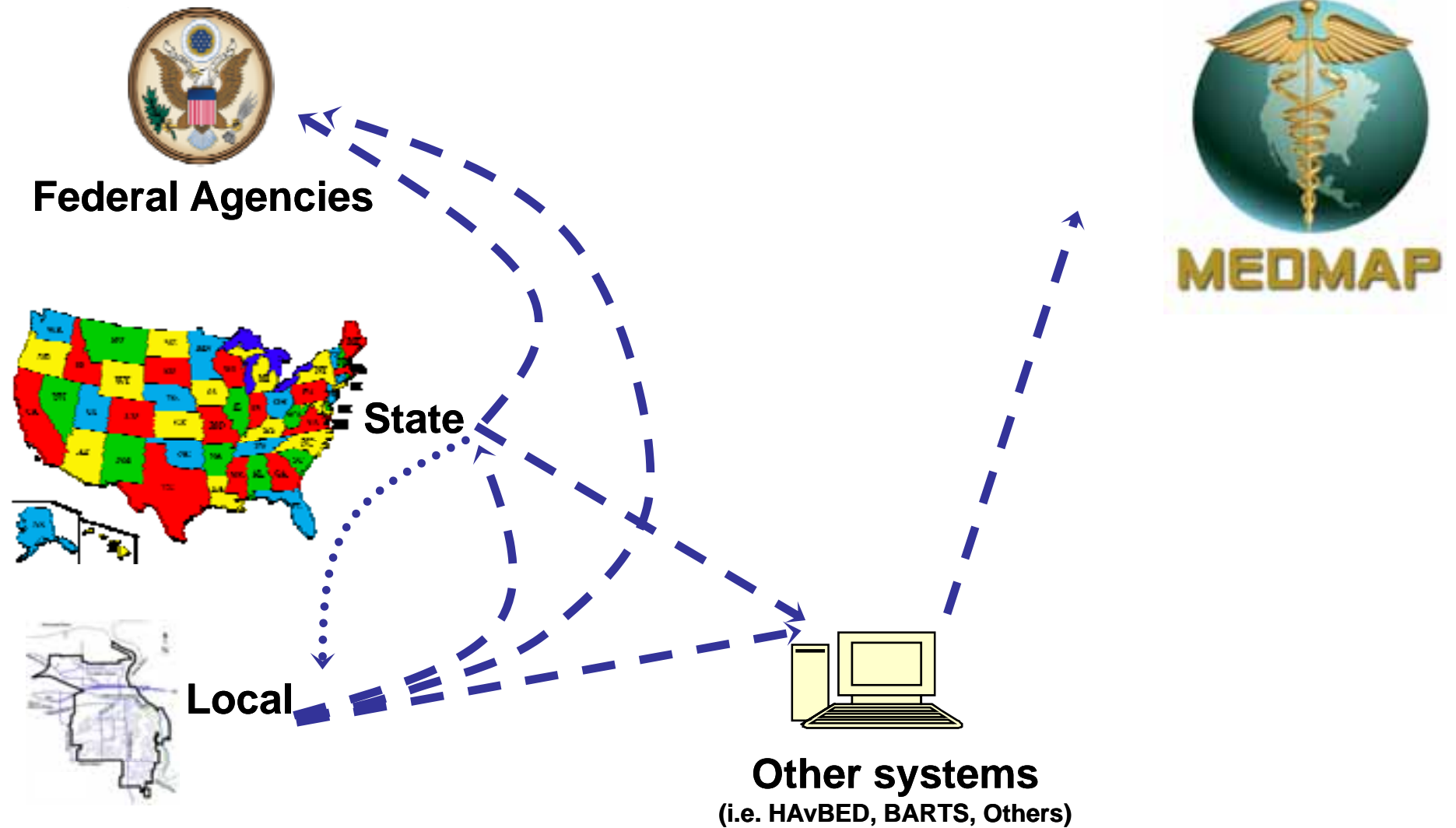
HHS Integration



- Used in daily operation of the Secretary's Operation Center of HHS as well as during deployments
- Has become an integral part of the HHS response and reporting mechanism
- Has empowered staff to do minor spatial requests



Current Data Paths





Current Limitations (v1.0)



- **Concurrent Users limited**
 - Limit 200 max
- **Navigation difficult**
 - Tough to navigate 500+ data layers in 90+ layer groups
- **Streaming and daily downloads limited**
 - Currently only NOAA & USGS
 - Multiple other areas available
- **Limited automatic processing**
 - Manual processing & loading of data
- **No legends**
 - Interpretation challenging
- **Addition of data can only be done by SOC staff**
- **Only runs on a few web browsers (IE7 & Firefox)**



-
- Prior method of getting information to senior leaders and to staff
 - Creation of web enabled viewer called “MedMap”
 - Current statistics, integration & limitations
 - **Testimonials**



MedMap Mission / Purpose



- **Med Map's mission is to create a seamless COP with the ability to display a user-defined operational picture where data from various organizations can be used to enhance situational awareness and be used as a decision making tool.**
 - *“I have found MedMap very useful in conducting our New Madrid Earthquake planning. The layers and functions make locating our at risk facilities much easier. I have also used MedMap during flood planning in Nebraska and Iowa.”*
REC – HHS
 - *“US Northern Command was requested to support US Southern Command in their efforts to assist Haiti after the 2010 earthquake. MedMap provided rapid situation awareness of the environment in Haiti. This information was invaluable to inform our leadership and understand the requirements for response.”*
US Northern Command
- **The purpose of MedMap is to enable HHS and it’s ESF#8 partners to visualize spatial data with a common tool that enables users to share information and be able to make more informed decisions.**
 - *“MedMap has helped me understand and coordinate my HHS/ASPR mission regarding developing a Region V earthquake response plan for FEMA’s Emergency Support Function #8 (public health and medical systems). The amount of data that would have been mapped, and aggregated, had we not had the multi-layer MedMap approach would have been crushing. Being trained on the subtleties of MedMap use has helped me and my Earthquake Work Group immeasurably.”*
REC – HHS
 - *“I have used the MedMap to plot out locations of Medical Facilities during events when management wanted to know what CIKR was located in an impacted area. The MedMap application will be heavily used if this hurricane season follows the forecasts from Colorado. We will be plotting all medical CIKR that falls within the storm cone.”*
ICAO (International Civil Aviation Organization) Sector Specialist – DHS



MedMap Aids in Decision Making



- **MedMap aids decision making at the State, Local, Tribal & Territorial level**
 - *“MedMap mapped significant geographical data points as well as provided a visual reference for the HHS RECs and the **North Dakota DOH**. This ability added to building appropriate situational awareness needed in the flood response.”*
 - REC – HHS
 - *“The **Secretary of Dept Veterans Affairs** and AS for (OSP) use MedMap for ESF#8 situational awareness and critical infrastructure assessment. VA intends to add VA infrastructure and assets to give VA a more complete ESF 8 picture using a common data between VA and HHS.”*
 - GIS Coordinator – VA

- **MedMap aids decision making at the Assistant Secretary for Preparedness and Response level**
 - *“Helped quickly ID resources and locations of resources for planning and situational awareness. Linked to other helpful information.”*
 - REC – HHS
 - *“You guys have done a truly sensation job with what has already been accomplished and with your formulating a way forward. When we talked about this years back you not only listened to what we said we needed but your vision exceeded expectations.”*
 - Planner – HHS



-
- Prior method of getting information to senior leaders and to staff
 - Creation of web enabled viewer called “MedMap”
 - Current statistics and integration
 - Testimonials
 - **HHS MedMap (Beta)**



MedMap - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://medmap.hhs.gov/medmap/medmapServer/Asset?ak=334d2WSL7-4H14C2FhZzyv0N6VCvZ11Ednkg4M42PR-vf3y2AK33dckd0F0HwBC_180dRc

MedMap @HHS.gov

Load/Save View Load Collection Add ShapeLine Spatial Query Search Text Directions Playbook

Status

Map Satellite Hybrid Terrain

Layer Collections

- HHS_Billans
- HHS_Boundaries
- HHS_EmergencyServ
- HHS_PubHealth
- HHS_Geonames

External Layer Collections

- User-Drawn
- Query
- IML

Shape & IML Overlays

Select Region

Layer Collection to Load

- Group 1
- Group 2
- Group 3

Load from URL

Add IML File

Enter complete URL, or the IML file at those sites from the list

Choose IML File

Refresh IML File

Clear IML File

Exit Collection

Map data ©2009 GeoEye, AeroGRID, IGN, SIA, ENR, Europe Technologies

Done



Select Region

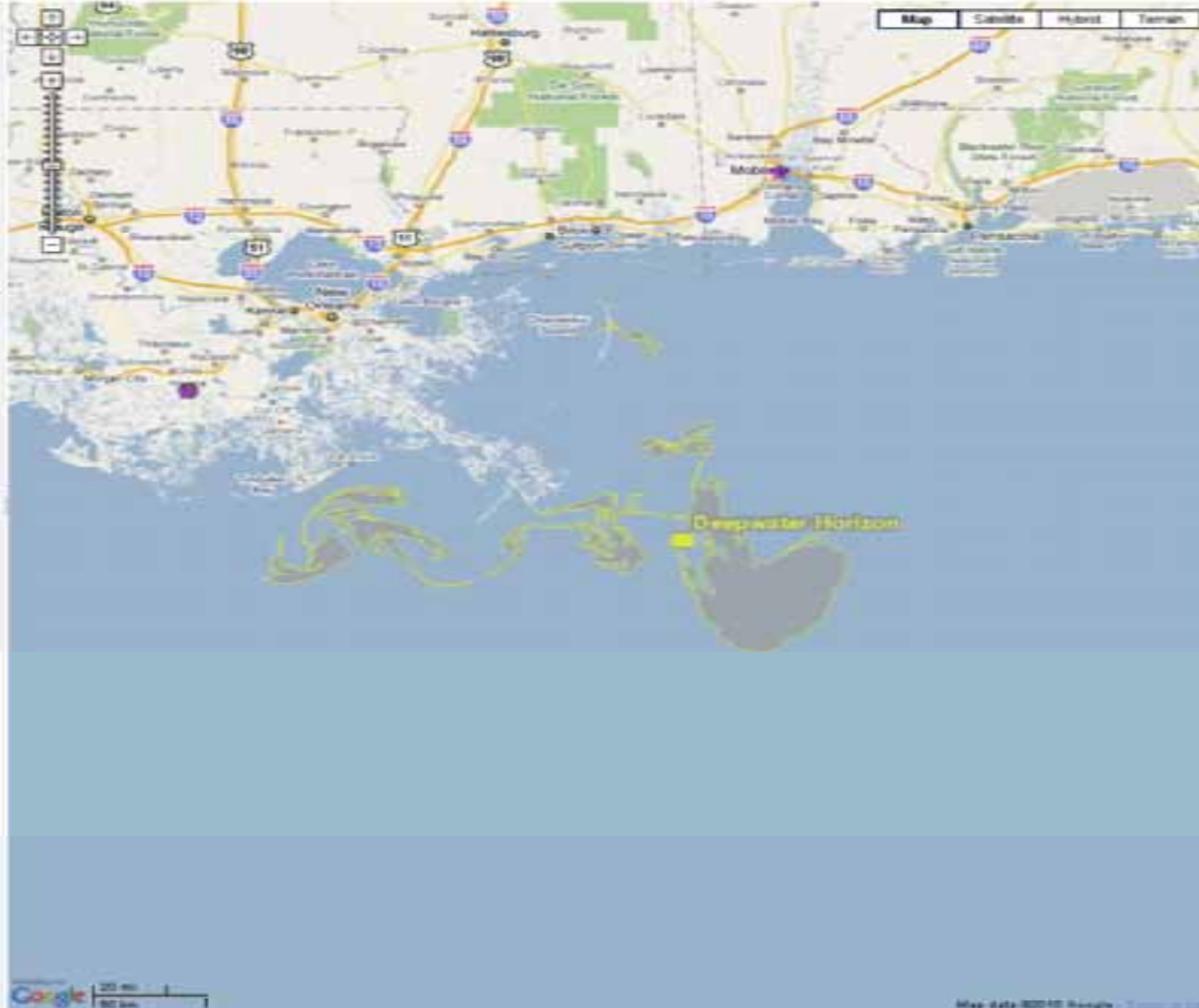
Layer Collections

- HHS_Borders
- HSP_Boundaries
- HSP_Emergency/Gen
- HSP_PublicHealth
- HSP_Geonames
- BP_Oil_Spill_Response
- Deepwater Horizon Oil Rig
- Beached Oil (24 hr)
- Oil Spill Estimate (24 hr)
- 95% Uncertainty (24 hr)
- Beached Oil (48 hr)
- Oil Spill Estimate (48 hr)
- 95% Uncertainty (48 hr)
- Beached Oil (72 hr)
- Oil Spill Estimate (72 hr)
- 95% Uncertainty (72 hr)
- Oil Spill Extents
- Full Access

External Layer Collections

Shape & KML Overlays

- Use-down
- Query
- KML



Map Satellite Hybrid Terrain

Load Collection

Load Layer Collection from drop-down list

Layer Collection to Load

Enter address for known REST collection

Load from URL

Add KML File

(Enter complete URL of the KML file or choose one from the list.)

Choose KML File

Refresh KML File

Clear KML File

Exit Collection



MedMap - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://medmap.hhs.gov/medmap/MedMapServ.html?tok=50E8rSPo-CP2EQ4NvYFRGHL-bLhWP3pfyRpxDy6LbVmpW03-17Wg1za0FHnyopTt2nWu0XCyC

Most Visited Getting Started Latest Headlines DC DoT FEMA Google Maps HHS - Portal IMAAC Login MD DoT Microsoft Outlook We... NWS radar loop Sterl... USDA Forest Service VA DoT

ArcGIS Server Manager Clear Cache Options A Peek Into Netflix Queues - NYTimes.c... MedMap

MedMap @HHS.gov MEDMAP

Load/Save View Load Collection Add ShapeLine Spatial Query Search Text Directions Playbook

Status: Wait for Pan/Zoom refresh before changing layer visibility... Done

Set Attrib: Help

Map Satellite Hybrid Terrain

Select Region

Layer Collections

- HHS_Billians
- HSIP_Boundaries
- HSIP_EmergencyServ
- HSIP_PubHealth
- HSIP_Geonames
- NOAA_SnowDepth
- 20100113HaitiEarthqua
- Health_Resources
- PortAuPrince Major Ros
- All Roads
- Collapsed Buildings_1
- Infrastructure
- Railroads
- Shake_Map
- State
- County
- Local
- HHS_Assets_Haiti

External Layer Collections

Shape & KML Overlays

- User-drawn
- Query

Done

Powered by Google

50 mi 100 km

Map data ©2009 LeadDog Consulting, Europa Technologies - Terms of Use

MedMap-Home

Enter address to look up:

Find

Delete Marker

Layer Attributes

Click on layer item on map to identify its attributes.



MedMap - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://medmap.hhs.gov/medmap/MedMapServ_Area?lat=51&lon=0&zoom=10&map=Hybrid&layers=HHS_Bits&HHS_Boundaries&HHS_Emergency&HHS_PubHealth&HHS_Geonames&NOAA_SnowDepth&HHS_Assets_Hall&20100113-HaitiEarthquake

Most Visited Getting Started Latest Headlines DC DoT FEMA Google Maps HHS - Portal BMAAC Login HD DoT Microsoft Outlook Web NWS radar loop Share USDA Forest Service VA DoT

AccGIS Server Manager Clear Cache Options MedMap

Load/Save View Load Collection Add ShapeLine Spatial Query Search Text Directions Playbook

Status: Wait for PanZoom refresh before changing layer visibility Close

Set Attrs Help

MedMap Home

Enter address to look up

Find

Details Marker

Layer Attributes

Click on layer item on map to identify its attributes

Map Satellite Hybrid Terrain

Map

20100113-HaitiEarthquake

Layer Collections

- HHS_Bits
- HHS_Boundaries
- HHS_Emergency
- HHS_PubHealth
- HHS_Geonames
- NOAA_SnowDepth
- HHS_Assets_Hall
- 20100113-HaitiEarthquake
- Distribution Sites
- Hospital Status
- Other Medical Facilities Status
- Displaced Persons RAP Unconfirmed Jan15
- Displaced Persons Unconfirmed Jan15
- Medical_Facilities_USAID20100120
- PostDisrupt Major Roads
- All Roads
- Collapsed Buildings_15Jan1400hrs
- Infrastructure
- Railroads
- Wells
- Water Features
- Shake_Map
- Earthquakes 12-19Jan2010
- State Areas
- County Areas
- Local Areas
- Total Population Estimate 2010

External Layer Collections

Shapefile Overlays

- User-drawn
- Query
- KML

Done



MedMap - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://medmap.hhs.gov/medmap/MedMapServ.html?tok=5X0r5Fo-DP2EQ4hWYFRAhvT1u0SF2L4pPYqomslYVqtYCLB_7aJ5dqAZcie7e8raAyh20107q30I

Most Visited Getting Started Latest Headlines DC DoT FEMA Google Maps HHS - Portal IMAAC Login MD DoT Microsoft Outlook We... NWS radar loop Sterl... USDA Forest Service VA DoT

MedMap

Load/Save View Load Collection Add ShapeLine Spatial Query Search Text Directions Playbook

Status:

Self Attrib. Help

Select Region

Layer Collections

- HHS_Billians
- HSIP_Boundaries
- HSIP_EmergencyServ
- HSIP_PubHealth
- HSIP_Geonames
- NOAA_SnowDepth
- SOTUA_2010_Assets
- SOTUA_2010_Scenarios
- HHS_Assets
- HHS_SOC
- FEMA_Flood_Plains
- HHS_Wildfires
- HHS_Hurricanes
- NOAA_River_Gauges
- USGS_Earthquakes
- USCensus_Population
- USGS_Warnings
- Global_Grids
- HHS_TB_tracking
- FDA_case_tracking
- HHS_Vulnerable_Population
- HHS_Assets_NDMS

External Layer Collections

Shape & IML Overlays

Map Satellite Hybrid Terrain

Enter address to look up:

Find

Delete Map

Layer Attributes

Click on layer item on map to identify its attributes.

50 m

Imager: 2009 Data (Globe, Sanborn), GeoEye, Commonwealth of Virginia, US Geological Survey, District of Columbia (DC O&S), USDA Farm Service Agency, etc. Terms of Use

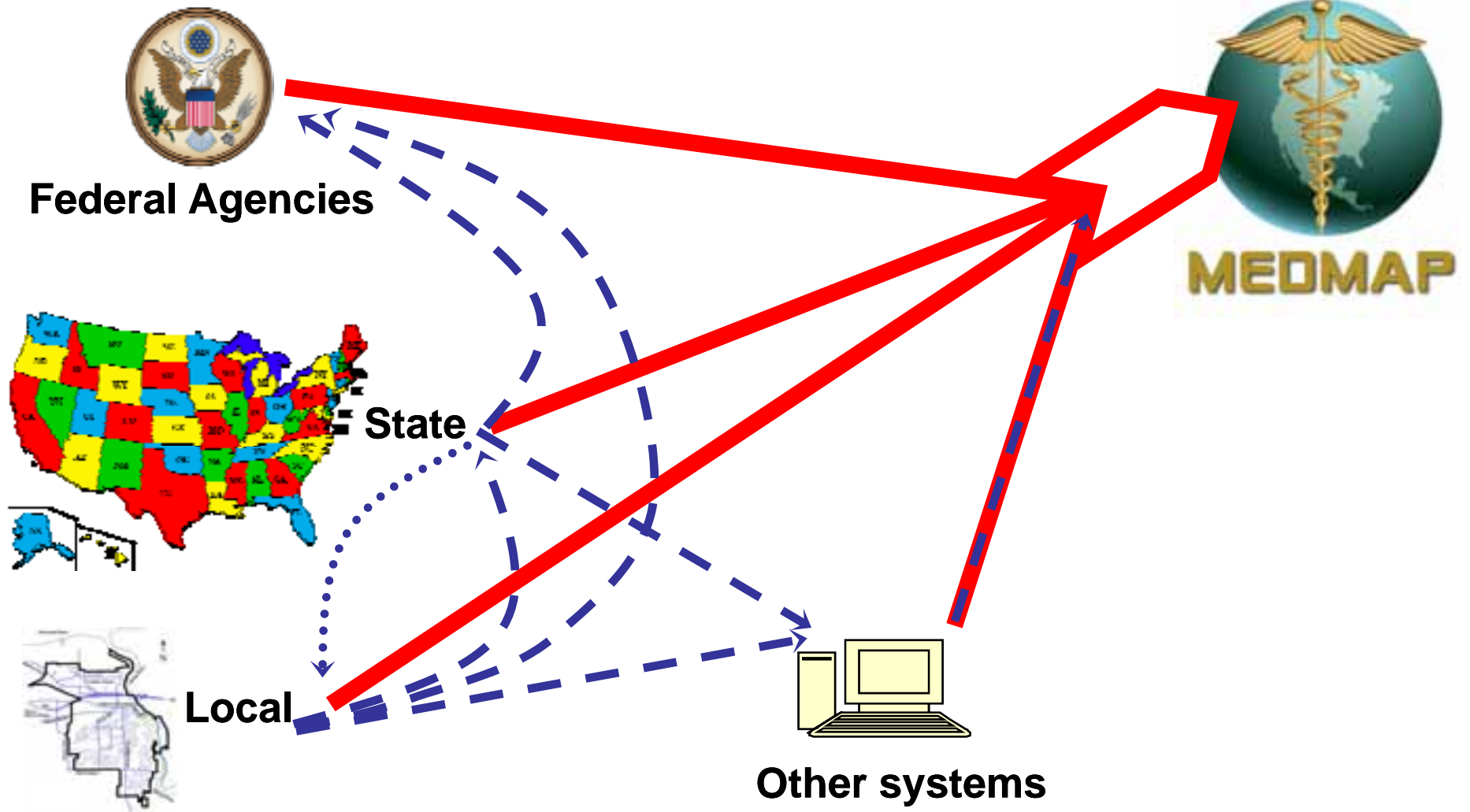
Done



-
- Prior method of getting information to senior leaders and to staff
 - Creation of web enabled viewer called “MedMap”
 - Current statistics and integration
 - Testimonials
 - Demo
 - **Enhancements**



Current & Potential Data Paths





Data access

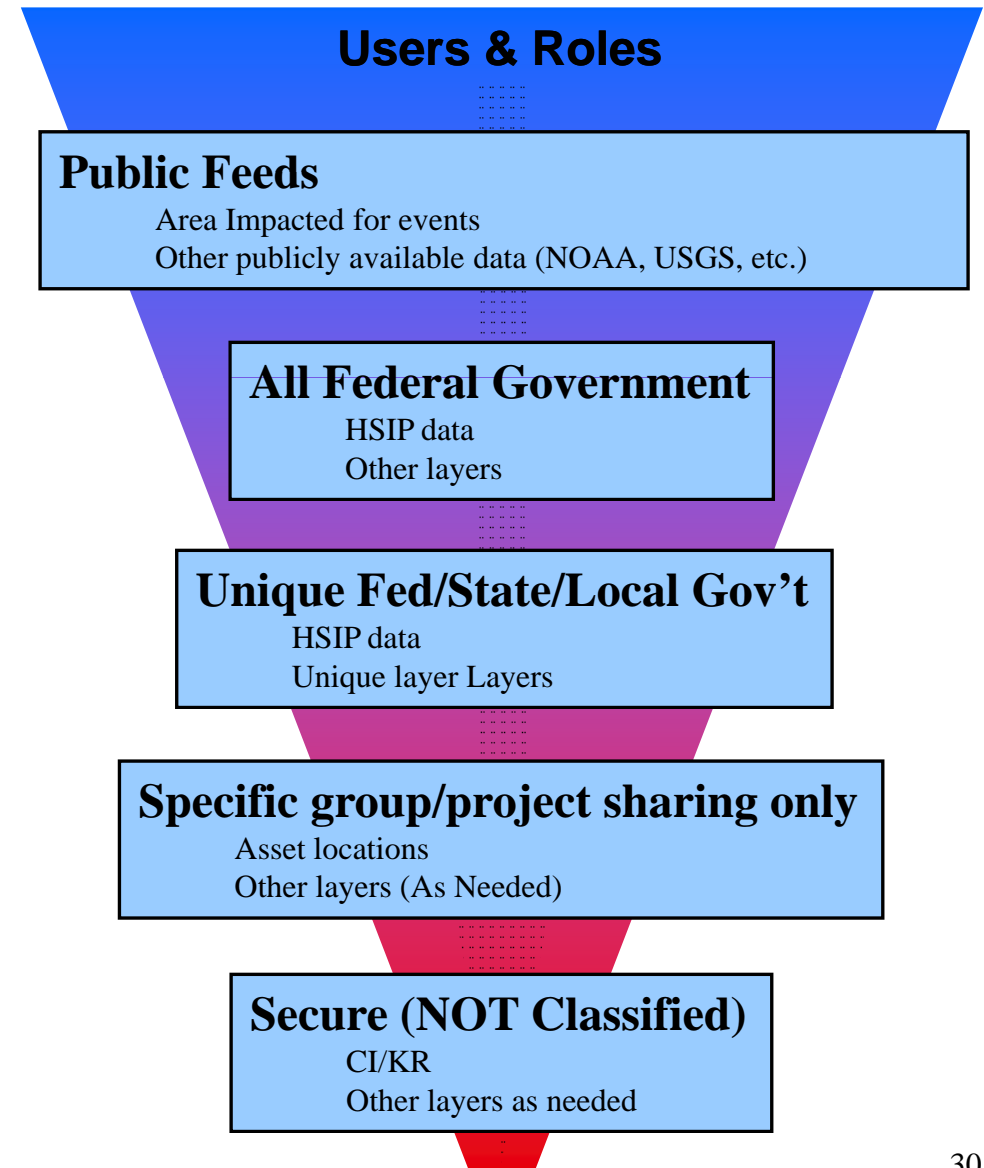
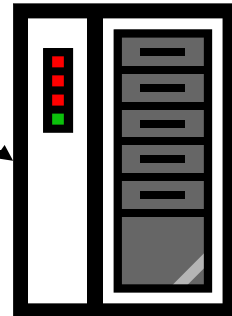


Application



MEDMAP
Secure Log-in

Data & feeds
Based on user role





United States Department of

Health & Human Services

Office of the Assistant Secretary for Preparedness and Response (ASPR)

Robert M. Shankman

GIS Program Manager

MedMap Program Manager

Department of Health & Human Services

Assistant Secretary for Preparedness and Response

Office of Preparedness and Emergency Operations

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<https://MedMap.hhs.gov/MedMap/login.html>



MEDMAP