

A Cultural Resource Data Model for World Heritage Sites

John Knoerl
CRGIS Facility
Heritage Documentation Programs
National Park Service

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EXPERIENCE
YOUR
AMERICA



CRGIS Facility

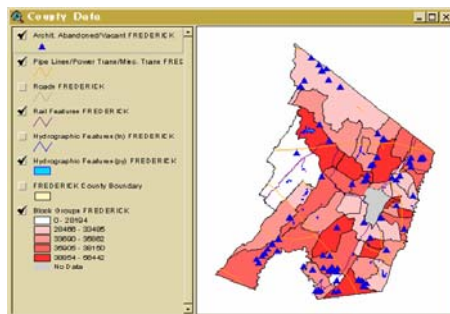
GPS Surveys



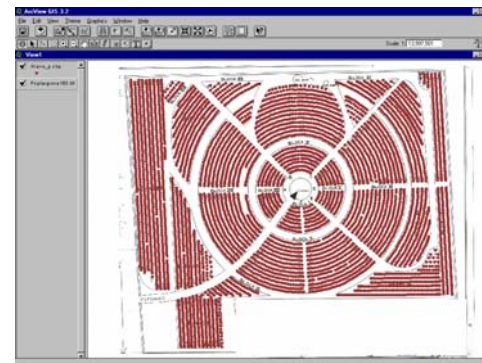
GIS/GPS Training



GIS Analyses



GIS Applications



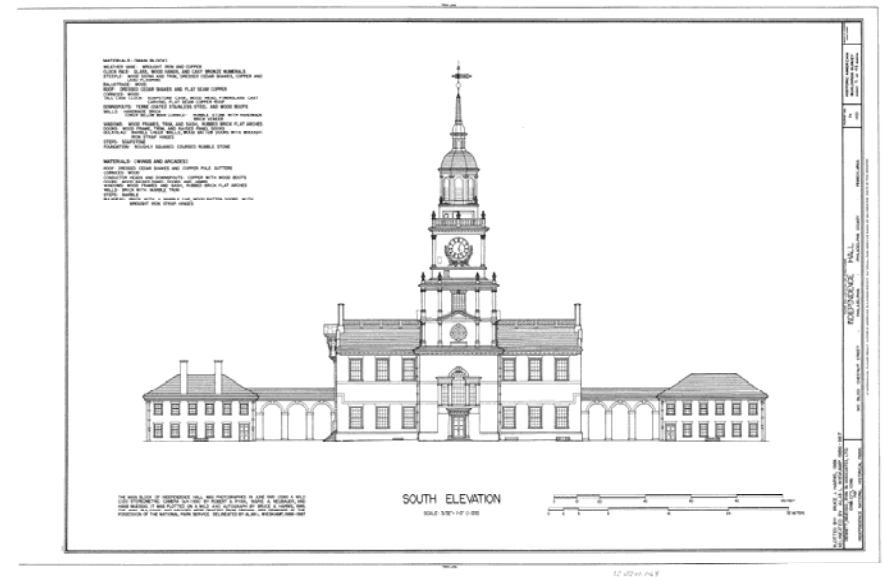
Historic Preservation Relies on Geospatial information to Make Decisions

National Register Listing



Arbor Hill Historic District, Albany, NY

World Heritage Inscription



Independence Hall, Philadelphia, PA

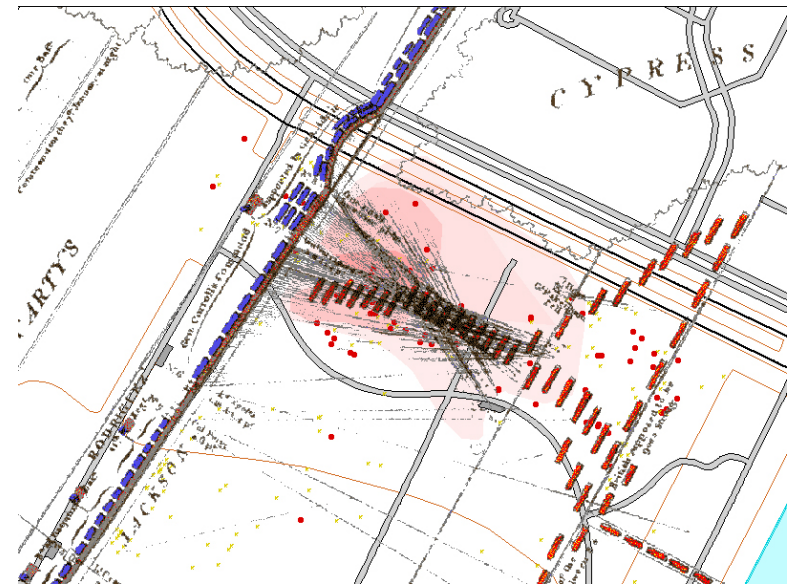
Spatial Analyses is an important tool in historic preservation

A Fragmented Battlefield



Ware Bottom, VA

Overlapping Fields of Fire

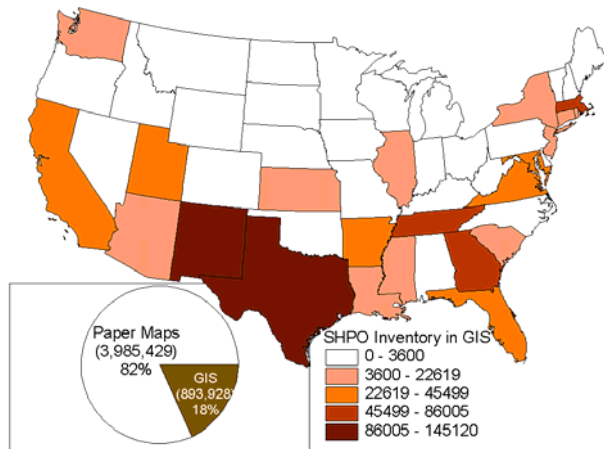


Chalmette Battlefield, Chalmette, LA

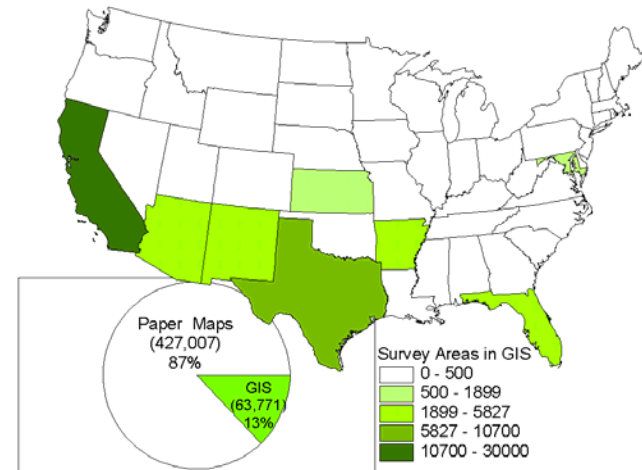
More than five million historic properties have been inventoried

Paper Maps v. GIS Database

Historic Properties



Surveyed Areas



Yet most historic properties are in paper files

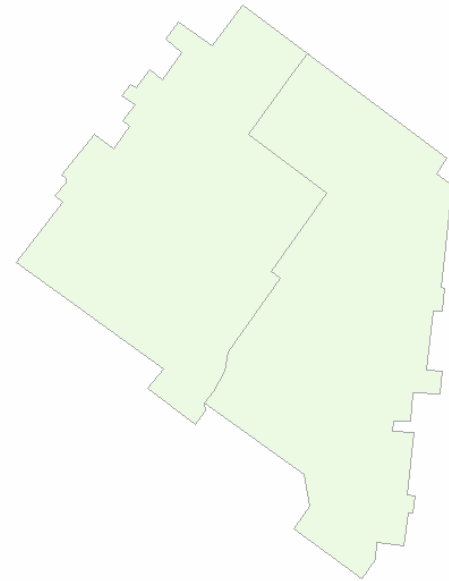
Currently there are no standards to create spatial data

Agency A



Historic districts with
contributing properties

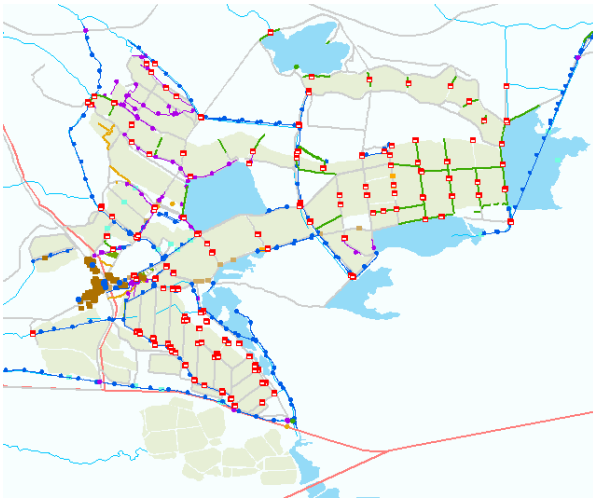
Agency B



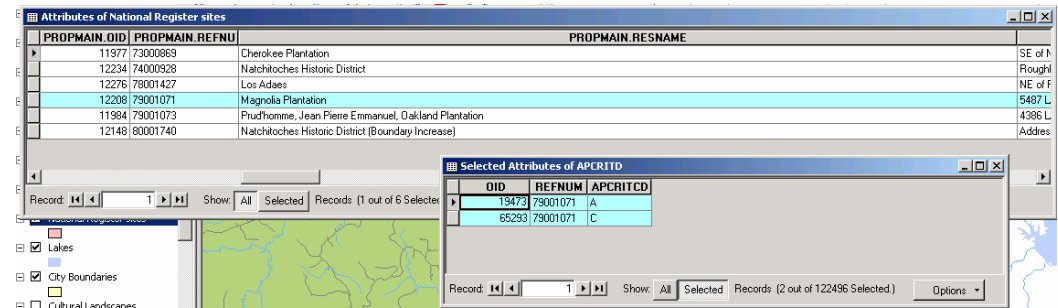
Historic districts without
contributing properties

Standards are needed in these four areas

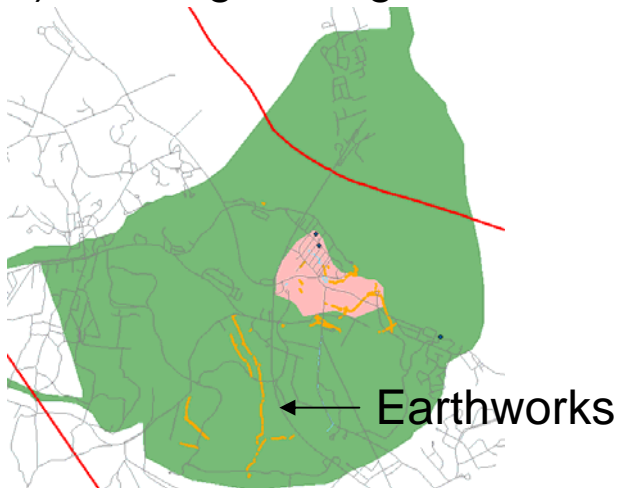
1) In the creation of spatial data



2) In linking spatial data to databases



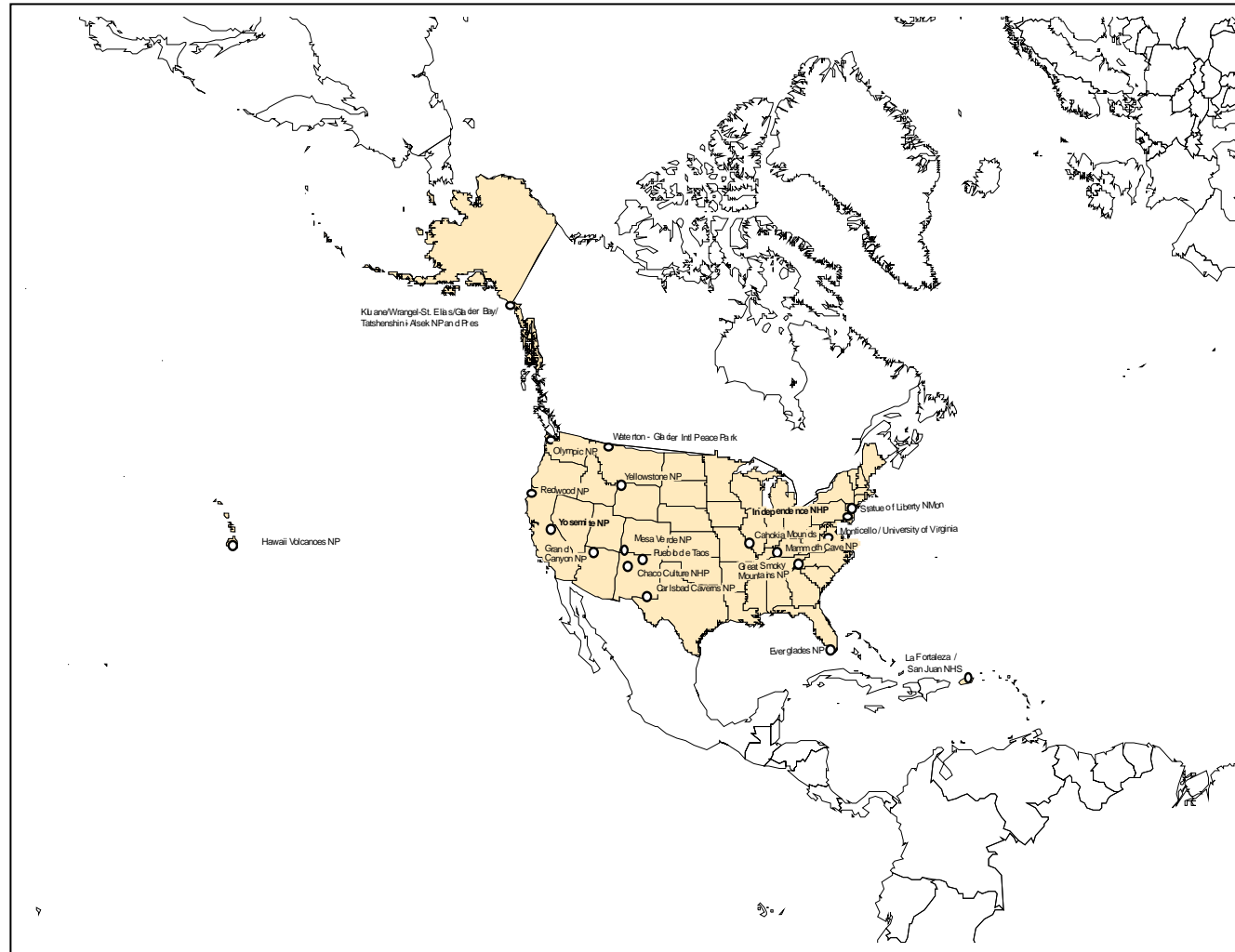
3) In safeguarding sensitive information



4) In creating feature level metadata



There are Twenty World Heritage Sites in the U.S.



U.S. World Heritage Sites Data Model v2										National Park Service U.S. Department of the Interior									
World Heritage Site: Attributes Tables Based on Operational Guidelines of the World Heritage Convention (1972) (Revised 2008)																			
1972, Site v2																			
Site Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
1. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
2. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
3. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
4. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
5. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
6. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
7. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
8. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
9. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
10. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
11. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
12. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
13. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
14. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
15. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
16. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
17. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
18. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
19. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory	Site Subcategory										
20. World, Name	Year	Site ID	Site Type	Site Category	Site Subcategory	Site Sub													



The Spatial Attribute, Link, and Descriptive Attribute Tables

WHSites_pol Feature Class	
Object_ID	OID
1e. Shape	Geometry
Cultural_Resource_GUID	Text GUID, 50
Location_GUID	Text GUID
Survey_GUID	Text GUID
WHS_Name	Text, 100
Ref	Text, 20
Bnd_type_pol	Coded Domain
Map_Method	Coded Domain
Source	Text, 100
Source_date	Date
Source_datum	Domain
Source_coord	Domain
Source_accu	Text, 100
Last_update	Date
Restrict_status	Domain
1f. Hectares	Long Integer
Notes	Text, 200
Data_Entry_Date	Date

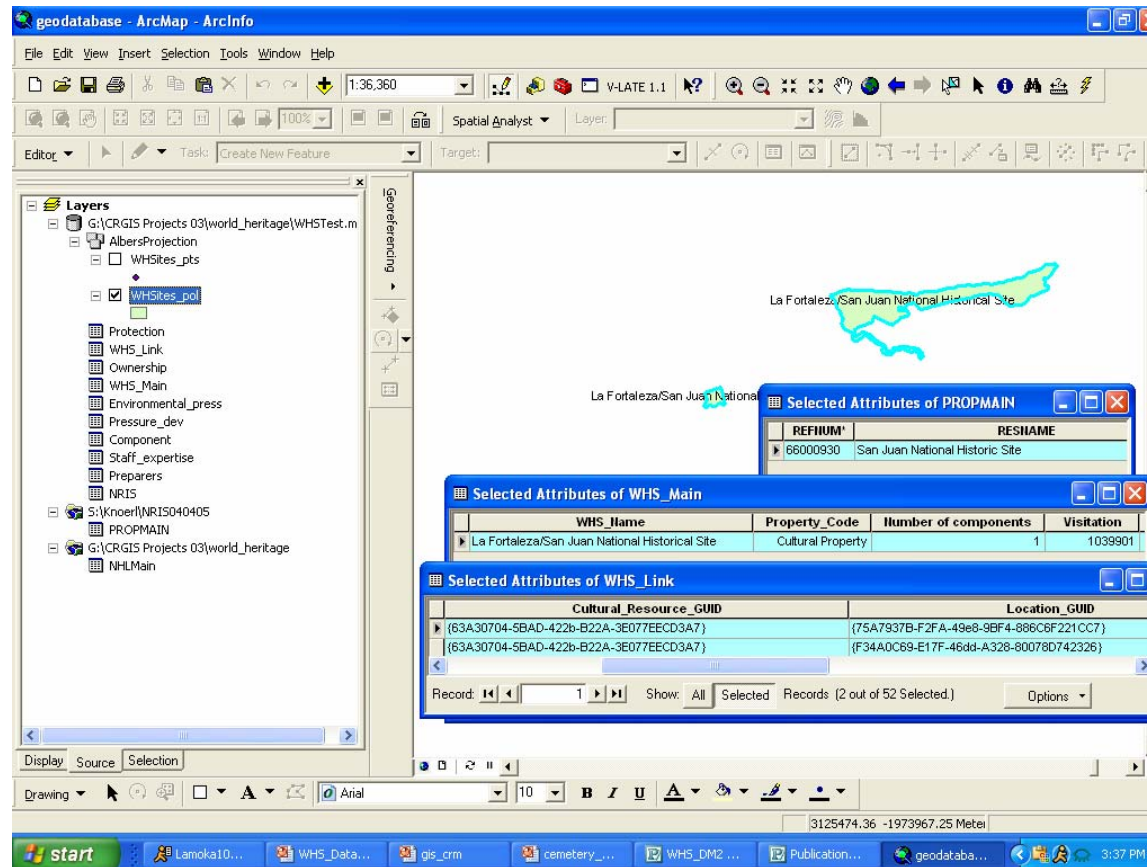
WHS_Link ok	
Ref [Text, 20]	Unique ID Assigned by UNESCO
Cultural_Resources_GUID	Text GUID, 50
Location_GUID	Text GUID, 50
RefNum	Text, 8
NHL_REFID	Double
Component_ID	Text, 15
Data_Entry_Date	Date

WHS_Main ok	
Ref	Text, 20
1c. WHS_Name	Text, 50
Property_code	Coded Domain
Inscribed_date	Date
NComp	Short Integer
1f. Property (Hectares)	Long Integer
1f. Buffer Zone (Hectares)	Long Integer
6a. Monitoring_program	Yes/No
Source_Date	Date
Date_Entry_date	Date

NRIS
PROPMAIN.REFNUM
NHL
NHL.REFID

External
DBMS

After Populating the Geodatabase, Tests were Conducted



The more relationship classes the slower the processing time



Problems Challenges with the Data

•Out of date

- Never updated
- Expansion of park boundaries not considered
- New values not incorporated

•Inaccuracies

- Incorrect UTM Zones
- Variation in names and spelling of names

•Acquisition of data

- Maps were difficult to obtain



Conclusions

- Robust**

- Incorporated natural as well as cultural resources
- Could handle single as well as multiple components
- No problem with large or small resources

- Flexible**

- World Heritage Sites
- New Orleans Red Tag Survey
- Civil War II Resurvey

- Adaptable**

- Long standing preservation programs
- Legacy data



Contacts

John J. Knoerl
Program Manager
CRGIS
HABS/HAER/HALS/CRGIS
National Park Service
Department of the Interior
1849 C Street, N.W. (2270)
Washington, D.C. 20240-0001
Voice: 202.354.2140
Fax: 202.371.6473
John_knoerl@nps.gov

Deidre McCarthy
Architectural-historian
CRGIS
HABS/HAER/HALS/CRGIS
National Park Service
Department of the Interior
1849 C Street, N.W. (2270)
Washington, D.C. 20240-0001
Voice: 202.354.2141
Fax: 202.371.6473
deidre_mccarthy@nps.gov