

# Wisconsin Historical Society

ESRI Wisconsin Users Group  
Green Bay, WI

presented by  
Puneet Kishor

# Project Background

- WHS founded in 1846.
- Mandate –collect, maintain, manage and disseminate archaeological and historical data in Wisconsin.
- This project – One division, three sections.
  - Archaeology
  - Survey and Registration
  - Compliance
- Project started Fall 2000. First Phase completed December 2001.
- Second Phase a couple of years later (upgrades and enhancements)
- Third Phase finished earlier this year (digital images)

# Project Scope

- Goals of Project – modernization!
  - Migrate data to a new system
  - Create spatial data
  - Create web-based applications
- Project outcomes
  - Easy access to all data
  - On-line decision support for compliance
  - More options for data distribution to others

# Project Methodology

- Situation assessment, database design, technology acquisition, application use cases.
- Implementation of design and applications.

# The Situation

- Paradox on PCs
  - DOS or Windows 3.1 versions
  - 4 separate databases, few links
    - BAR (Bibliography of Archeological Reports)
    - AHI (Architectural Historical Inventory)
    - ASI (Archeological Site Inventory)
    - Compliance (a tracking database)
  - 4 applications by different developers, dates, functions, & levels of robustness
- Arch site and survey data drawn on USGS hardcopy quads

C:\pdox45\PARADOX.EXE

View Ask Report Create Modify Image Forms Tools Scripts Exit

PARADOX Version 4.5

Copyright (C) 1985-93  
Borland International, Inc.  
All rights reserved.

User: Lan Administrator  
Company: State Historical Society

F1 Help View a table.



MS-DOS  
C:\pdox45\PARADOX.EXE



Welcome to the Bibliography of Archaeological Reports database.

Entry/Edit/View

Paradox

Custom Report

Help notes

Quit

Add, Edit, or View BAR database records

## Additional issues

- Heavy workload due to compliance review mandates
- Inefficient or difficult access to data
- No spatial data for visualization, maps, analysis, etc.
- Difficulty with getting additional staff resources



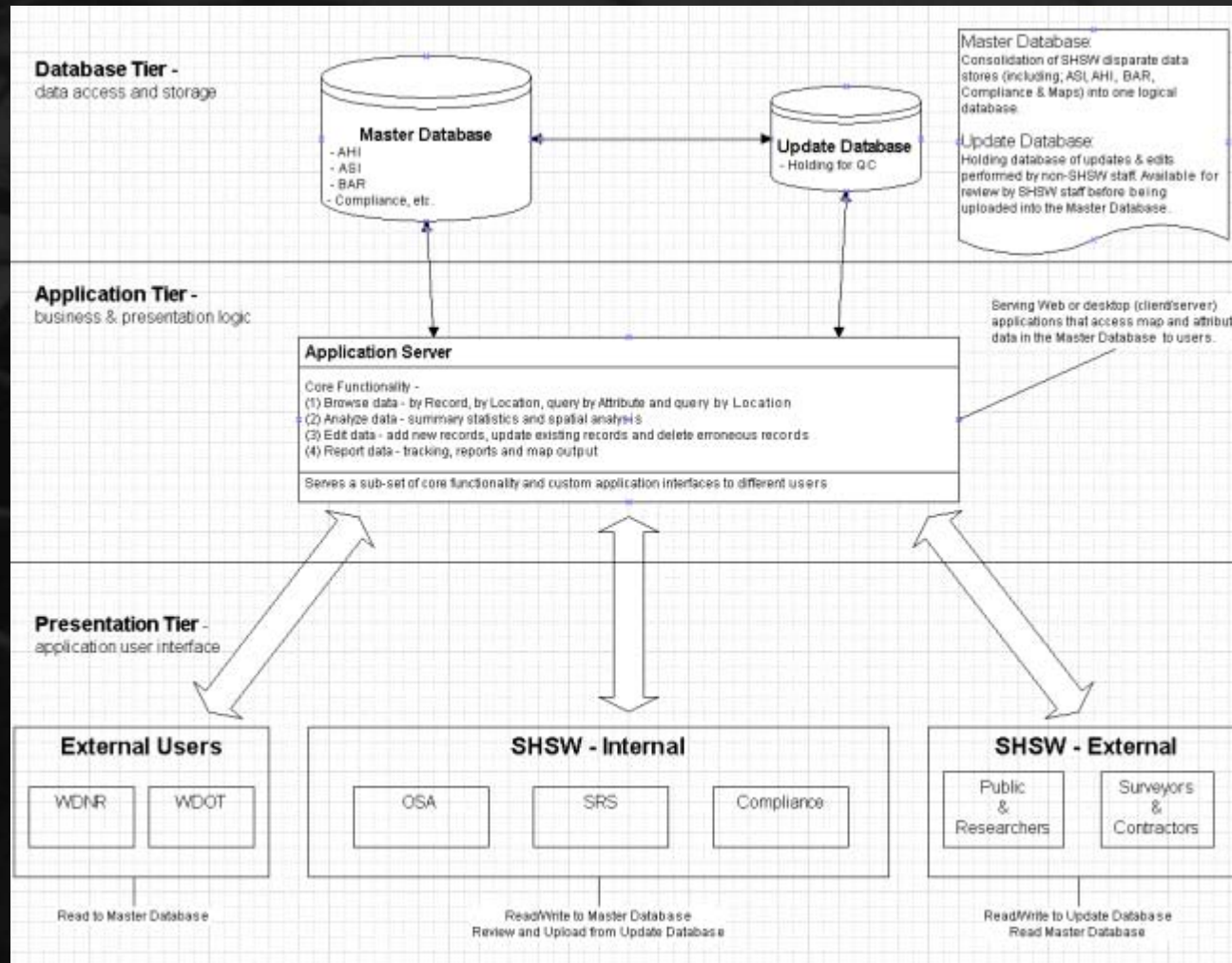
## Situation Positives

- WHS provided training to staff
- High commitment to project
- Existing public access web site for AHI
- Existing access web site for three agencies to access ASI & AHI tabular and limited data.
- Patience

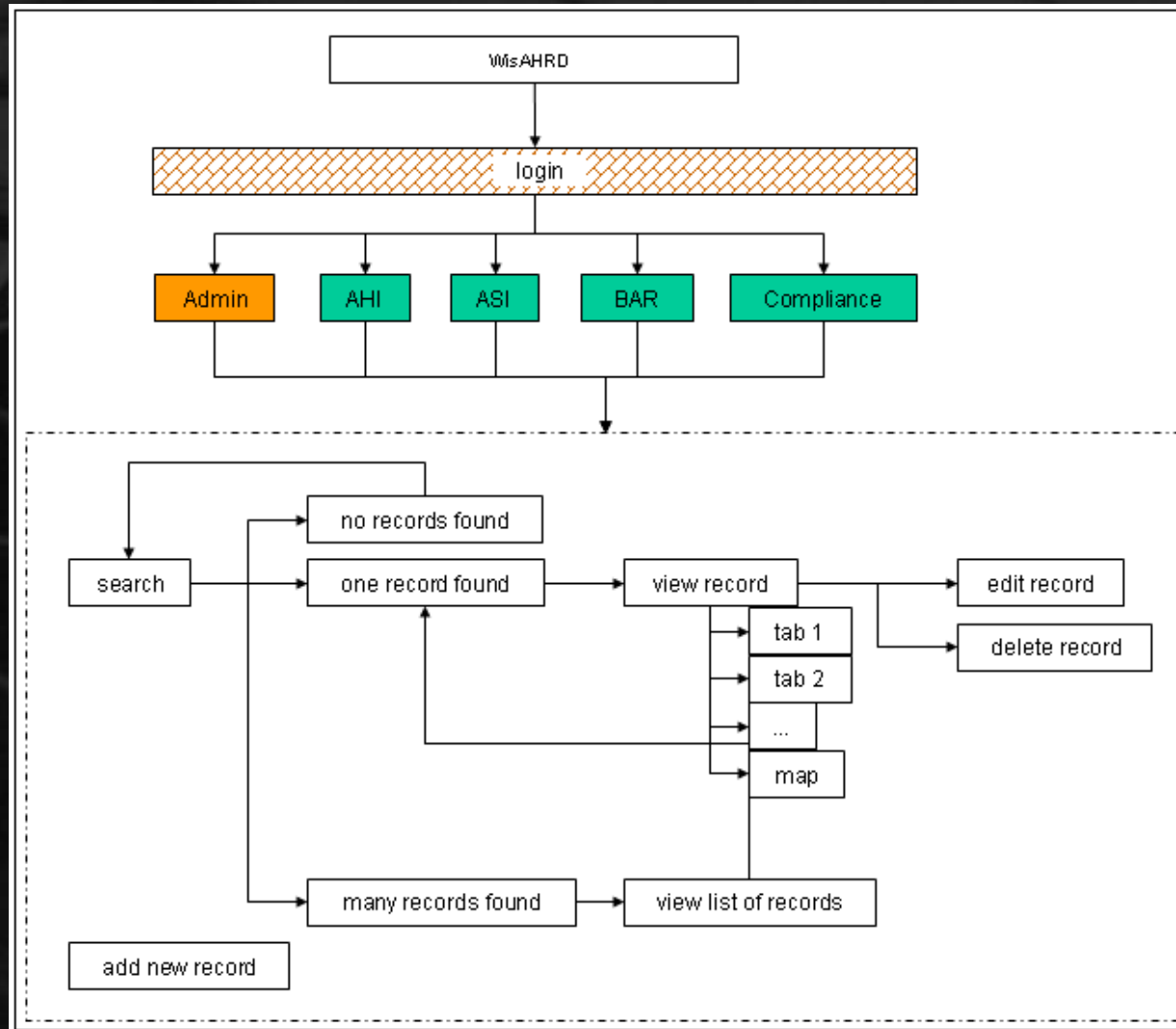
## Why modernize?

- Could have had new Paradox versions and programming with ArcView for spatial viewing
- However,
  - Want to eventually integrate all WHS databases into Oracle
  - Want remote user access to *both* tabular and spatial data

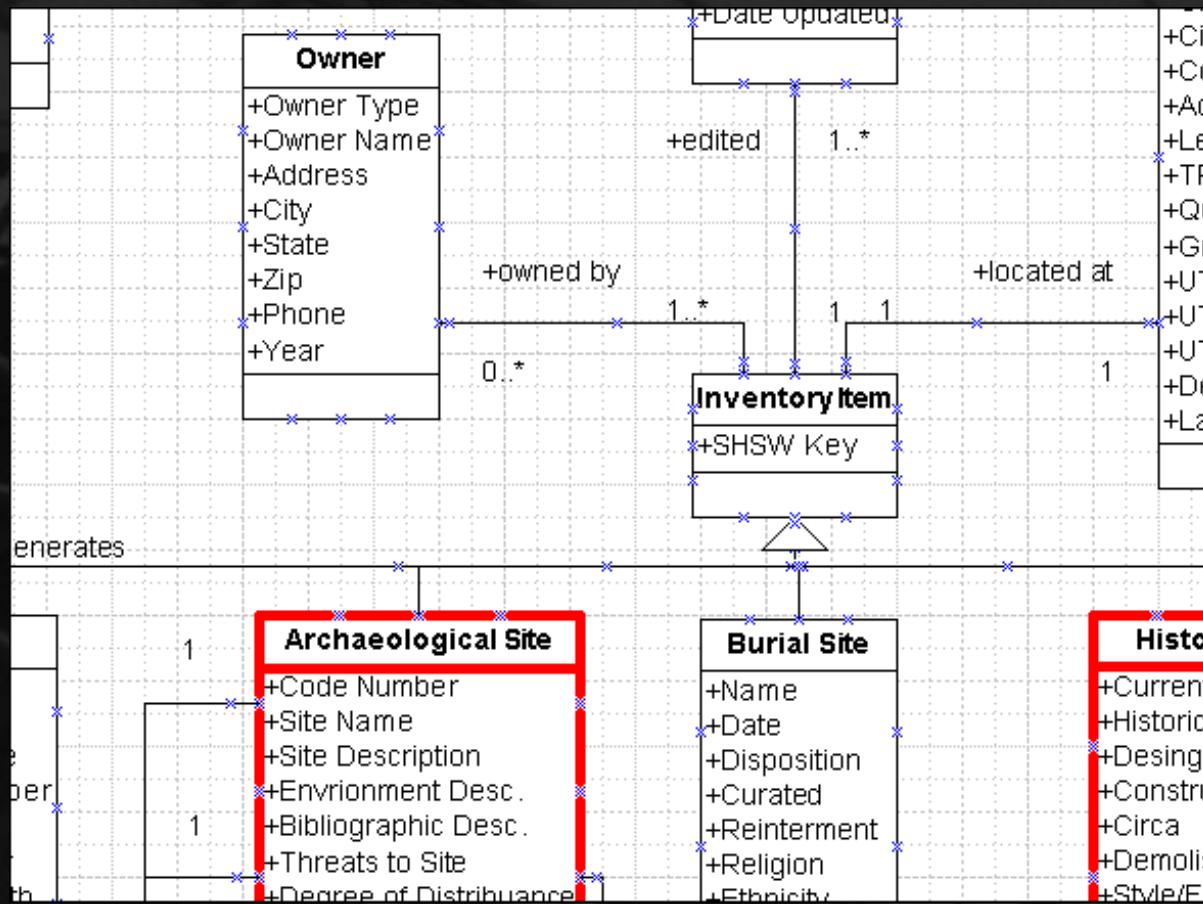
# Conceptual Design



# Logical Design

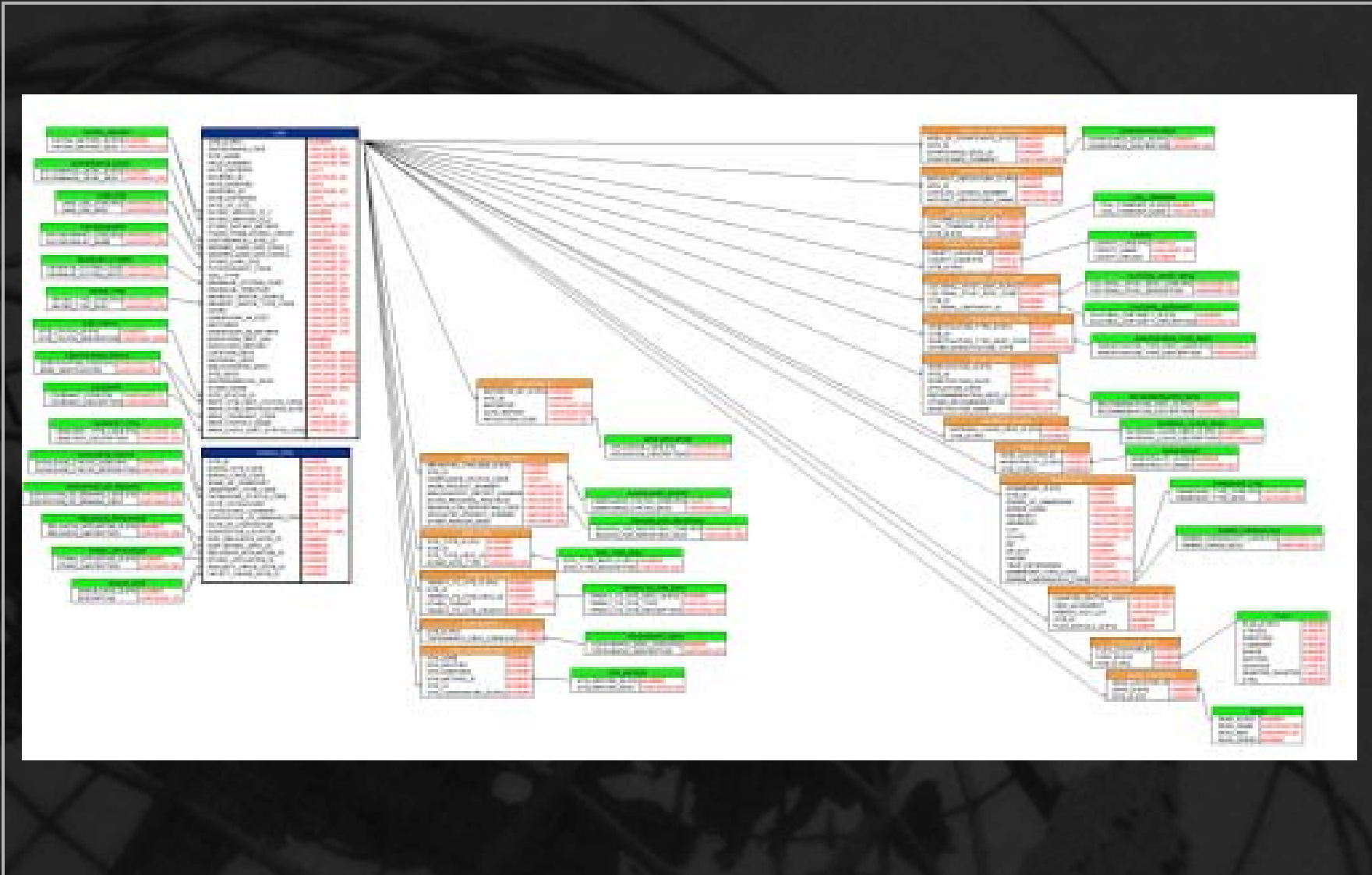


# Database Design



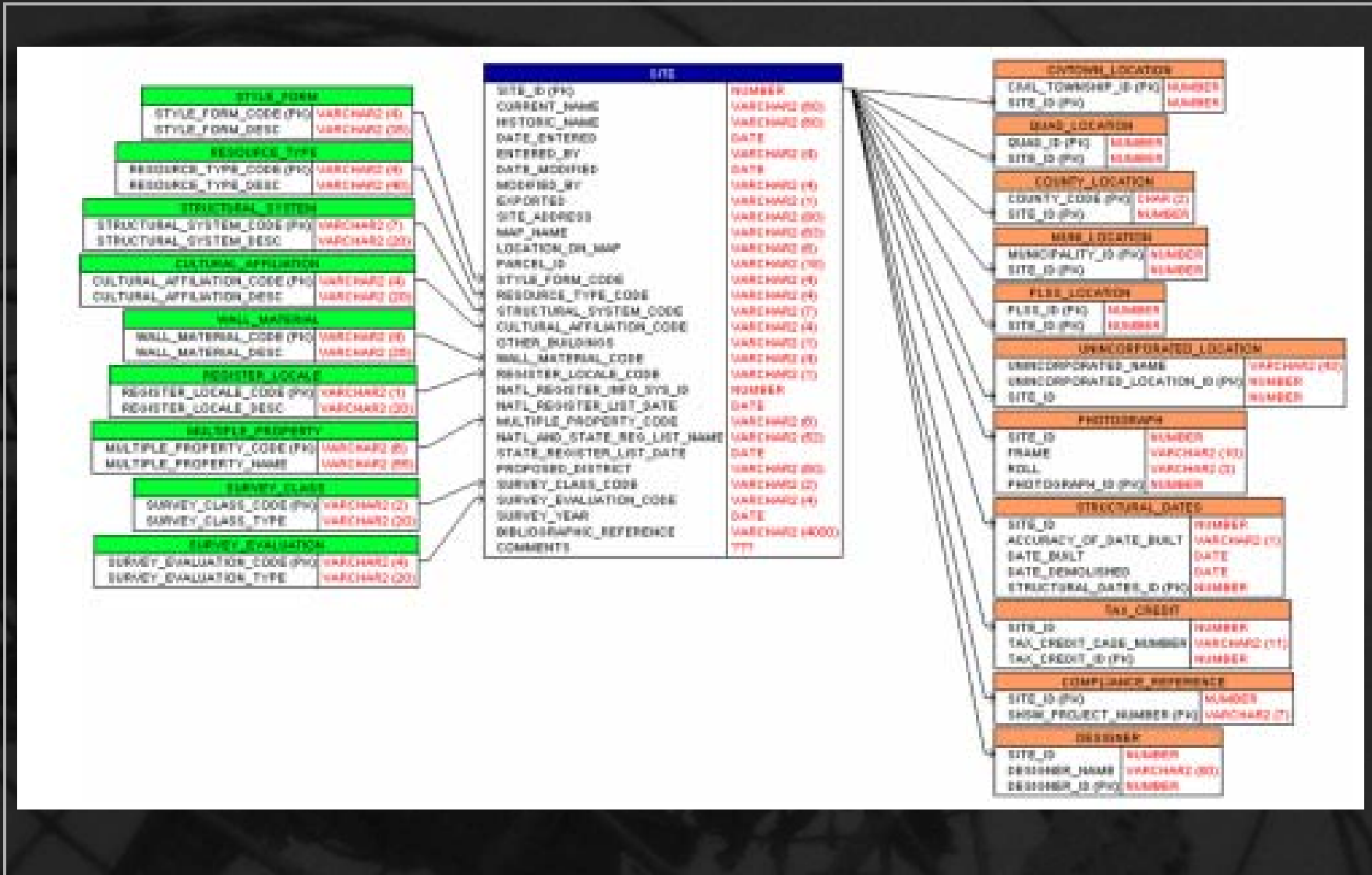


# ASI Entity Relationships





# AHI Entity Relationships



## Phase I - Outcomes

- Acquisition of software, hardware
  - Oracle
  - ESRI product suite: Arc 8, ArcView 3.2, ArcIMS, ArcSDE
  - Macromedia Cold Fusion
  - New servers, PCs, monitors, etc.
- High level database design, application outlines

## Phase 2: Spatial Data Creation

- WHS staff and LTEs participation
- General ArcView training for staff
- GA provided customized training in heads-up digitizing in ArcView 3.2 for all
- Archaeological data – polygon shapefiles for sites and survey areas
- Historic places data – geo-coding with QMS software into point features

# Database Migration

- Oracle 8.2
- 4 schemas, one for each application
- Share lookup tables, location tables
- Significant data scrubbing
- Changes in field values and definitions

# Application Development

- Four applications for business needs including a map component
  - Cold Fusion, ESRI ArcIMS
  - Basic CRUD functions
  - Very specific & complicated queries against multiple fields
  - Five applications created – ASI, AHI, BAR, Compliance, and an Admin module



# Implementation Gotcha's

- Training
- Data scrubbing
- Complicated business needs (e.g. queries)
- Software limitations
- Cultural and technological challenges



## Outcomes.....

- ...for WDOT & other agencies– web access to generalized data for a first “cut” in compliance reviews.
- ...for WHS – increased efficiency for compliance work, remote staff access to data, integration of data for all staff, map making capabilities.
- ...for GeoAnalytics – increased knowledge on implementing the combo of Oracle, ArcIMS, and Cold Fusion.

## Technical Lessons

- Software version control important for functions and compatibility issues
  - CF 4.5 to 5 to 6
  - ArcIMS 3.0 and 3.1, to 4, to the latest version
  - Oracle 8.x to 10
  - IE and Netscape
- Prescribe minimum technology and user experience requirements for the applications

# Technical Lessons

- One application cannot serve all user needs or levels of experience.
  - Data analysts
  - Browsers of data versus editors of data
- Importance of saving, re-using programming code
- Thinking across applications when developing enhancements

# Non-Technical Lessons

- Process changes can be difficult.
  - From a personal data entry method to another
  - Work flow of data
  - Understanding the new system
- User needs change as more becomes possible with technology.
- User needs change as staff become educated on the new system
- Expectations change over time
- Continued mgmt and improvement require increased integration, future projections

# Non-Technical Lessons

- Elaboration of work plan to support system
- Policies surrounding user access / licensing
- Public Terminal vs. Remote Access
- Continued commitment to providing quality data - management



# Outcomes

- for WHS –
  - State-of-the-art database and work applications.
  - Integrated system.
  - Access to all data to all staff resulting in increased efficiencies (especially to compliance).
  - Capability for remote staff access to data.
  - Map-making capabilities.
- for Outside users –
  - Search / View / Print Full Site Records
  - View Maps from within applications, (no need for desktop GIS)
  - Dynamic, up-to-date - always hitting db directly



# Availability

- Public Terminal - Open since Dec. 2002,
  - User agreement
- Remote Access - April 2003
  - License agreement, associated fee

## Next Phase

- Image Linking project (partly funded through a Forest Service grant)
- Custom Mapping/Data Search Services (underway in May 2003)
- Integrating Shipwrecks database / GIS layer for shipwreck locations

# Available GIS Layers

- 5 layers:
  - Archaeological Sites
  - Historic Cemeteries
  - Archaeological Districts
  - Survey Areas
  - Historic Properties
  - future - Complete shipwreck sites
- WHS - custodial responsibility, data provider
- Implications for Archaeology in WI?
- Applications for Arch Research?

# Login



[Contact](#)

Welcome to the Wisconsin Historic Preservation Database (WHPD), a resource for accessing archaeological and historical information, provided by the Wisconsin Historical Society.

This is a password-protected web application. Please login using the form below.

Please remember that even after you have logged in, your login will expire if you stop working at this web site for an extended period of time. In that case you may have to login again.


Username

Password

WHPD. Copyright: All rights reserved. Division of Historic Preservation, Wisconsin Historical Society, 2003. You will have to [login](#) to enter or modify data.

developed by [GeoAnalytics, Inc.](#)

# ASI Welcome Screen

 Wisconsin Archaeological Site Inventory	<a href="#">Search</a> <a href="#">Map</a> <a href="#">Add New</a> <a href="#">Admin</a> <a href="#">Prefs</a> <a href="#">Contact</a> <a href="#">Logout</a>	Switch... ▾
	<input type="text" value="Smithsonian Code"/> <input type="button" value="Search"/>	<i>rw</i>

**Welcome to ASI**

The Archaeological Site Inventory, or ASI, is an online database application that provides information on archaeological sites, burial mounds, unmarked cemeteries, marked cemeteries, and cultural sites. As of November 2002, there are approximately 30,000 sites listed in the ASI. While the ASI database is the most up-to-date and comprehensive database that documents the occurrences of archaeological sites and cultural resources available, it does not include all of the archaeological sites, mounds, unmarked cemeteries, marked cemeteries, and cultural sites present in the state of Wisconsin. It is a dynamic database, maintained by the Office of the State Archaeologist of the Wisconsin Historical Society and receives updates on a daily basis.

As a registered user of the ASI, you may search the database by using the links above. But please [read our disclaimer](#) first.

**Please note** that although the State Historic Preservation Office (SHPO) does maintain information on some sites located on federally-recognized tribal lands, those site records are not made available for viewing within the WHPD applications. If you are researching an area which may be located within a federally-recognized tribal land, you will need to contact one of the following:

- If your area includes land held by a tribe with a designated Tribal Historic Preservation Office (THPO), you will need to contact that THPO office directly.

# Search Form



Archaeological Site Inventory

[Search](#) [Map](#) [Add New](#) [Admin](#) [Prefs](#) [Contact](#) [Logout](#)

Smithsonian Code   Switch... ▾ *rwX*

All search fields are optional. Use Cmd-Click (Mac) or Ctrl-Click (Win) to select more than item where appropriate.

### Basic Info

Smithsonian Code	<input type="text"/>	ASI #	<input type="text"/>
Site Name	<input type="text"/>	Burial Site #	<input type="text"/>

Date Record Entered or Modified (enter mm/dd/yyyy)

Kind of date... ▾ from to

is (enter only "from" date) ▾  << [c] >>  << [c] >>

### Location Info (choose one of county or TRS, not both)


Township	Range	Section	Direction
Township... ▴ 1 2 3 4 ▾	Range... ▴ 1 2 3 4 ▾	Section... ▴ 1 2 3 4 ▾	Dir... ▾

County	Municipality	Civil Town
ADAMS ▴ ASHLAND BARRON BAYFIELD BROWN ▾	If only one county chosen ▾	If only one county chosen ▾

### Site Description




# Search Results



Archaeological  
Site  
Inventory

[Search](#) [Map](#) [Add New](#) [Admin](#) [Prefs](#) [Contact](#) [Logout](#)

Switch... ▼



Smithsonian Code

Map

Images


127 records found where

- location method: **p1ss**
- range: **2**
- township: **1,3**

[Records](#)
[Map](#)

ASI #	State Site# /Burial Code	Site Name	Site Type	Cultural Study Unit	TRS
<a href="#">5385</a>	GT-0042	Unnamed Site	1. Mound(s) - Other/Unk 2. Cemetery/burial	1. Woodland	3, 2, W, 17
<a href="#">5477</a>	GT-0156	Brogley Rockshelter	1. Cave/rockshelter	1. Archaic 2. Late Woodland 3. Middle Woodland	3, 2, W, 8
<a href="#">5480</a>	GT-0159	BROGLEY ROCKSHELTER 2	1. Cave/rockshelter		3, 2, W, 17
<a href="#">5481</a>	GT-0160	PLATTE RIVER BRIDGE SITE	1. Mound(s) - Conical 2. Cemetery/burial	1. Woodland	3, 2, W, 29
<a href="#">5482</a>	GT-0161	Unnamed Site	1. Cemetery/burial	1. Unknown	1, 2, W, 3
<a href="#">5484</a>	GT-0163	Unnamed Site	1. Mound(s) - Effigy 2. Cemetery/burial	1. Late Woodland	1, 2, W, 6
<a href="#">5485</a>	GT-0164	SINNIPEE CEMETERY	1. Mound(s) - Other/Unk 2. Cemetery/burial		1, 2, W, 7
<a href="#">5504</a>	GT-0184	J-1	1. Campsite/village		1, 2, W, 17 1, 2, W, 20

# Data



Wisconsin  
Archaeological  
Site  
Inventory


[Search](#) [Map](#) [Add New](#) [Admin](#) [Prefs](#) [Contact](#) [Logout](#)

Switch... ▾











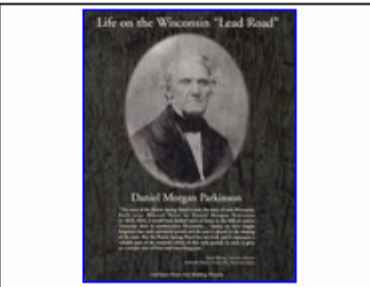
Smithsonian Code   *twx*

Last 20 sites viewed... ▾   Map  Images

Primary Info
Env Info
Artifact/Investigator Info
Burial Info
Map
Images

State Site #: GT-0156	Entered On:	Entered By:					
Site Name	Brogley Rockshelter						
Other Name							
Field #							
ASI #	5477						
Date Modified	09-25-2005						
Modified By							
<input type="button" value="Edit"/>							
<b>Location Information</b>							
County	GRANT						
Civil Town	HARRISON						
Municipality							
PLSS	Town	Range	Dir	Section	QSection	Grid Alignment	French Lot
	3	2	W	8	NW,NE,SE		
UTM Info	UTM Method	UTM Zone	Easting	Northing			
USGS 7.5' Quad Info	POTOSI						
Location Description	THE SITE IS TEN MILES WEST OF PLATTEVILLE. GO 9 MILES WEST ON CTH "B", THEN 1.1 MILES NORTH ON A CLASS B GRAVEL ROAD. THE SITE IS LOCATED APPROXIMATELY 600 YARDS SOUTH OF THE ROAD ON THE WEST BANK OF THE PLATTE RIVER, DOWNSTREAM FROM THE FIRST BRIDGE ON THE GRAVEL ROAD						

# Images

Current Name	DANIEL M. PARKINSON HOUSE	
Verified	N	
<a href="#">Edit</a>		
 	7 images found of type <input type="text" value="All"/>	  1 to 6 are shown below.
		
Before Restoration	East Elevation	Interior Door and Window
		
Floor Plan	Newspaper clipping	Biography of a Building (back cover)
<a href="#">Add New Image</a>		

# Images



**Image Caption** Before Restoration

**Image Type** Color Photo

**Year Taken**

**Credits**



# Map

Archaeological Site Inventory

Search Map Add New Admin Prefs Contact Logout

Smithsonian Code Search

Switch... *rw*

Last 20 sites viewed... Go

Map  Images Print

Primary Info Env Info Artifact/Investigator Info Burial Info Map Images

1 features selected; 1 found in the map

W. Twp 03, Rng 02, Sec 08

W. Twp 03, Rng 02, Sec 09

PLATEAU

Plateau

GT-0156

(468609,253150) -> (468613,253123) = (4,27) [108]

Primary Info Env Info Artifact/Investigator Info Burial Info Map Images

# Puneet Kishor

[pkishor@geoanalytics.com](mailto:pkishor@geoanalytics.com)

1716 Fordem Avenue  
Madison, WI 53704  
Phone: 608.241.7100

**GEOANALYTICS.COM**