



2003 AFCEE Technology Transfer Workshop

San Antonio, Texas

Promoting Readiness through Environmental Stewardship

Using Web-Enabled GIS to Track Land-Use Controls and Property Transfer

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LUC Overview

- **Land Use Controls (LUCs) are non-engineered instruments with established history in property law including:**
 - **Administrative Controls, e.g. zoning**
 - **Legal or Institutional Controls, e.g. deed restrictions**
- **LUC objectives in environmental restoration:**
 - **Minimize the potential for human exposure to contamination**
 - **Protect the integrity of the remedy by limiting land or resource use**



LUC Examples

- **Administrative Controls**
 - **Zoning: Local zoning can prohibit residential use**
 - **Siting Restrictions: Ordinances controlling land use**
 - **Groundwater Restrictions: A permitting system establishing requirements prior to construction/use**
- **Institutional Controls**
 - **Proprietary: Restrictions placed in deeds or other property transfer Documents including:**
 - **Easements, e.g. site access to monitor contamination**
 - **Covenants, e.g. restricting land-use to non-residential**



Implementation Considerations

- **Layering Strategy**
 - Selection of LUCs to ensure that the remedy remains protective of human health and the environment
 - Increase effectiveness through redundancy or implementation in series
- **Monitoring**
 - Ensure that LUCs are working as intended
 - Confirm that LUCs are in place to prevent exposure
 - Confirm that LUCs are expected to remain protective
- **Enforcement**
 - Ensure that LUCs are implemented as designed



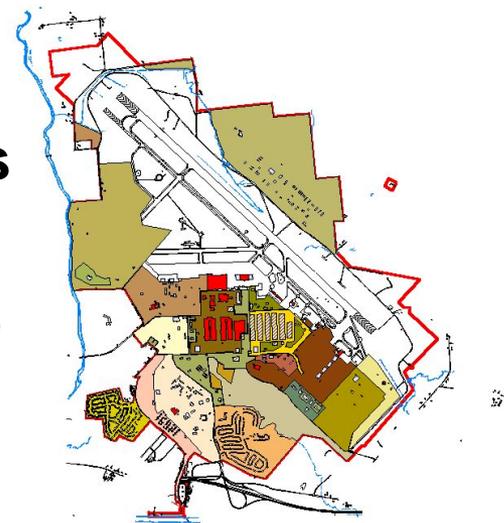
LUC Management Goals

- **Prevent unintentional violation of Land Use Controls**
 - **Property owner**
 - **Planning boards**
 - **Developers**
 - **Maintenance personnel**
- **Facilitate access to information**
 - **Restrictions are typically contained in deeds**
 - **Deeds commonly not reviewed during site development**



LUC Management Goals

- **Facilitate LUC Tracking**
 - **Property is subdivided after transferred to Community**
 - **Original Air Force deed map is not held by new property owner**
 - **Location references disappear (buildings, roads, parking lots, etc.)**
 - **Regulators have expressed concerns over the ability to manage the controls**
- **Implement LUC Layering Strategy**
 - **Where, when, why, who, how long?**





Why Use GIS?

- System for storing, analyzing and mapping geographically referenced data
- Visual Layering of Geographically Referenced Data:
 - Planned Reuse/Zoning
 - Transferred Parcels
 - LUC Areas/Types
 - Environmental Sites
 - Pre-BRAC Site Features
 - Existing Site Features
 - Sampling Points





Why Use GIS?

- **Linking of Attributes to Spatial Data:**
 - **Planned Reuse/Zoning Areas M Code**
 - **Parcels M Transfer Status, Deeds, Area**
 - **LUCs Areas M Type, Monitoring, Environmental Drivers, Contacts,**
 - **Environmental Sites M Status, AR/IR links**
 - **Pre-BRAC Site Features M Facility Use, Year Built**
 - **Sampling Points M ERPIMS Data**
- **Tools to quickly search, display and analyze data**





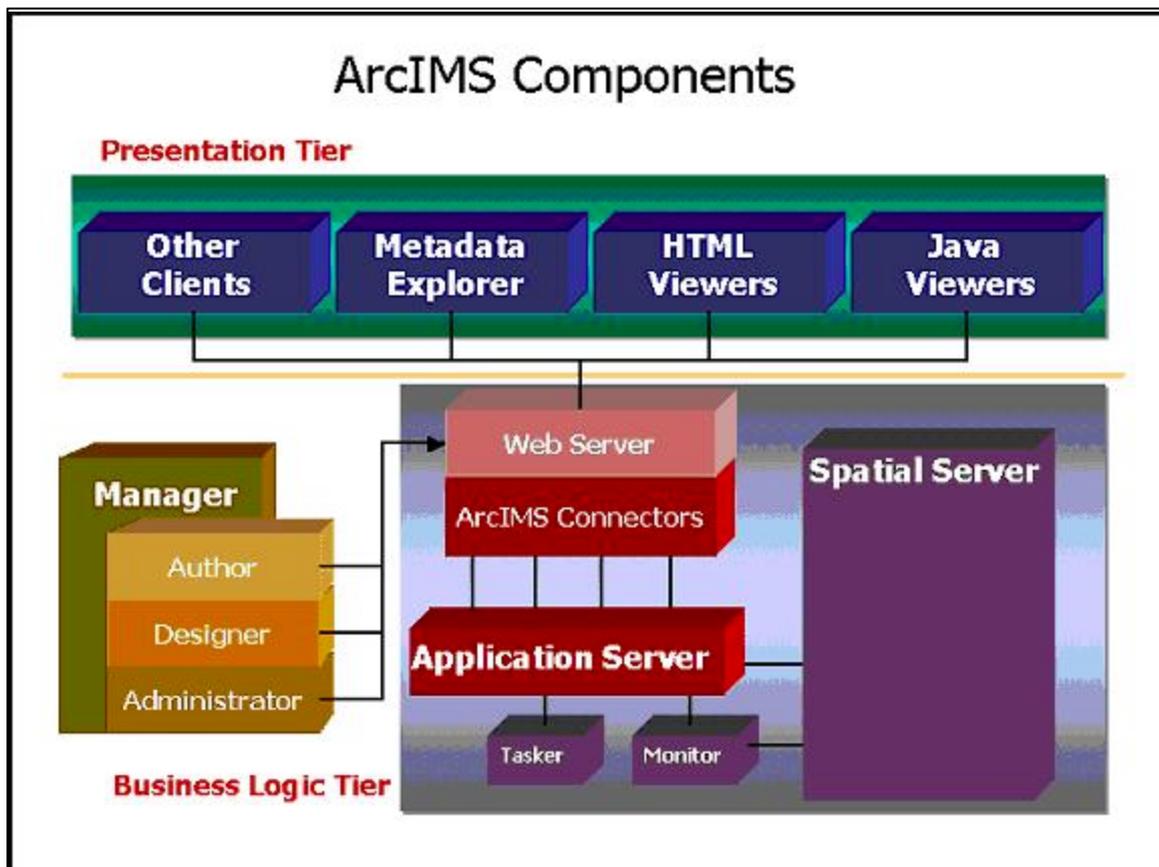
Why Web-Enable GIS?

- **Facilitates access by all stakeholders**
 - **A web browser can access the GIS data**
 - **No prior GIS experience is required**
- **Minimize long-term cost**
 - **Individual GIS applications are not required**
 - **Training requirements are minimized**
 - **Distribution of hard copy maps is minimized**
- **Increase data control**
 - **Data distribution is limited to ONE server**
 - **Only one version of the data available at any given time**





How Is GIS Web-Enabled?



ESRI®



Web-Enabled GIS Demo

■ <https://www.Griffiss.com>

Griffiss AFB Land Use Control Map

Map Tools

Move

Zoom

Active Layers

Information

Select

Misc

Map Views

Visible Active

- Parcels
- Roads
- Airfield
- Facilities
- Land Use Restrictions
- Development Opportunities
- Proposed Zoning
- Boundary

Refresh Map

Display Map

Home

Help

1. The GRANTEE covenants to restrict the use of the Property to industrial and commercial non-residential activities unless it obtains written permission to do so from United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), and New York State Department of Health (NYSDOH).

Rec	LUC_ID	LUC_DESCR	AFFECTED_P	IC_CLASS	SITE_CONTR	USE_RESTRI	EBS_REF	MNGMNT_RE	MONITORING	LAST_MONIT	STA
1	GFS-EDC-2001-008	PETROLEUM SPILL	F1E	4		DEED	ST-37	CLOSE SPILL	ANNUAL	00000000	

Identify

Map: 1135447.68 , 1175256.52 -- Image: 170 , 308 -- ScaleFactor: 4.7449190761355355

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