

Date Warehouse and Geographic Information Systems: Current Status and Recommendation Presentation to PPPO

Prepared by
Kentucky Research Consortium for Energy and Environment
233 Mining and Minerals Building
University of Kentucky, Lexington, KY 40506-0107

Prepared for
United States Department of Energy Portsmouth/Paducah Project Office
Acknowledgment: This material is based upon work supported by the Department of Energy under
Award Number DE-FG05-03OR23032.



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Presentations to

PRS Management
Kevil, Kentucky

And

PPPO Senior Management
Lexington, Kentucky

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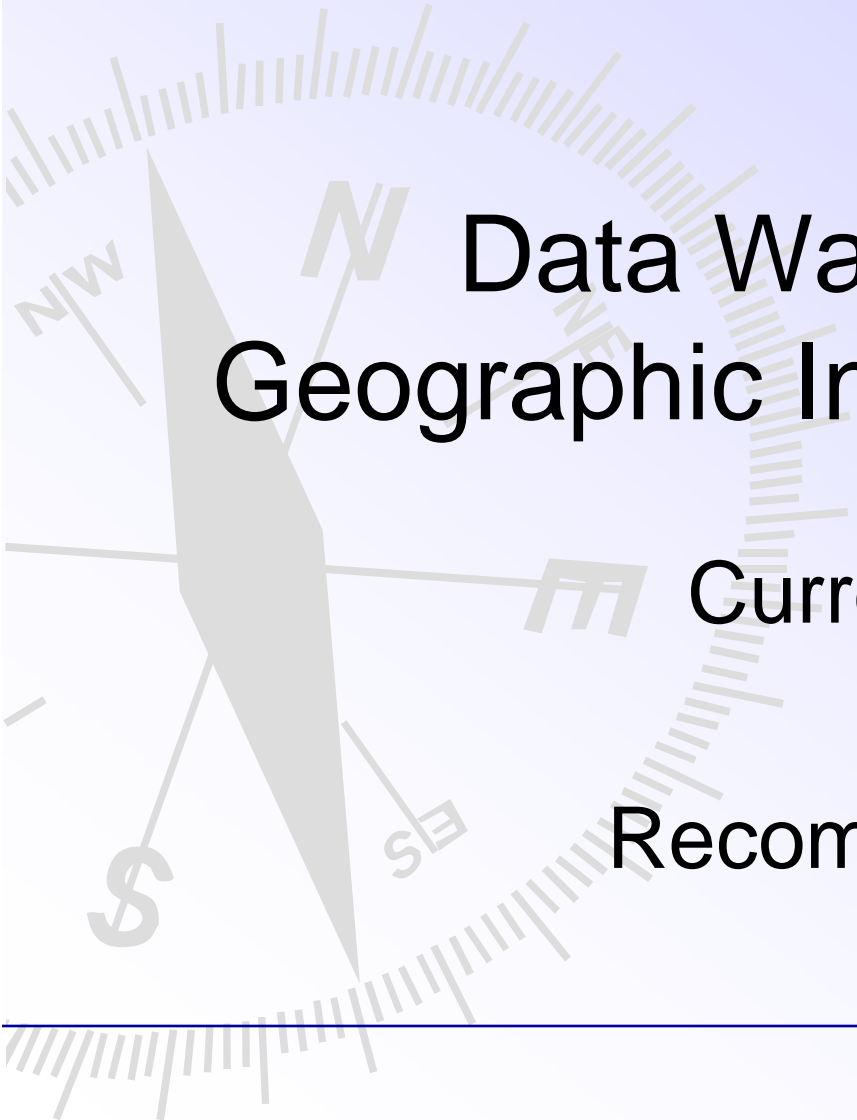


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Data Warehouse and Geographic Information System

Current Status
And
Recommendations

DWGIS Current Status

- **Paducah**

- 2,425,877 env records
- 140 GIS layers
- Phase I completed
- Advanced query tools
- Feb 2006 – OREIS
- Not installed on-site

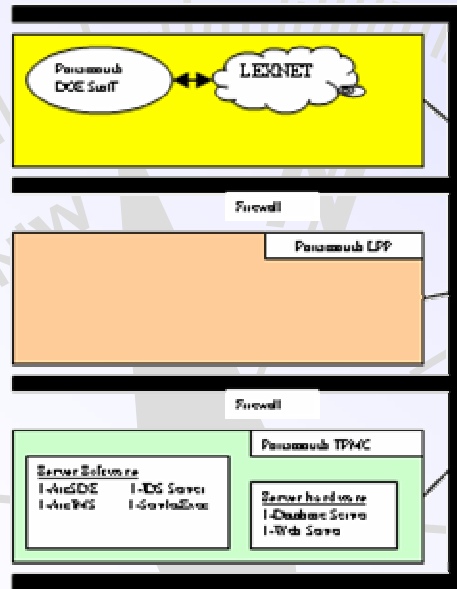
- **Portsmouth**

- 1,082,534 env records
- 80 GIS layers
- Phase I completed
- No Adv. query tools
- Dec 2003 – OREIS
- Installed on-site

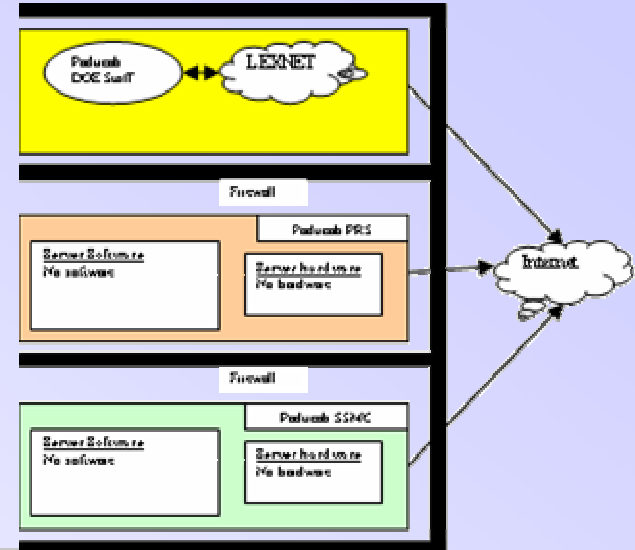
Issues

- **OREIS no longer accessible - moved**
- **OREIS and DWGIS behind firewalls**
- **Portsmouth DWGIS needs OREIS refresh**
- **Paducah requires local DWGIS installation**
- **PPPO requires PORTS/PAD DWGIS access**
- **KY stakeholders require PAD-DWGIS access**

Current Network Configurations

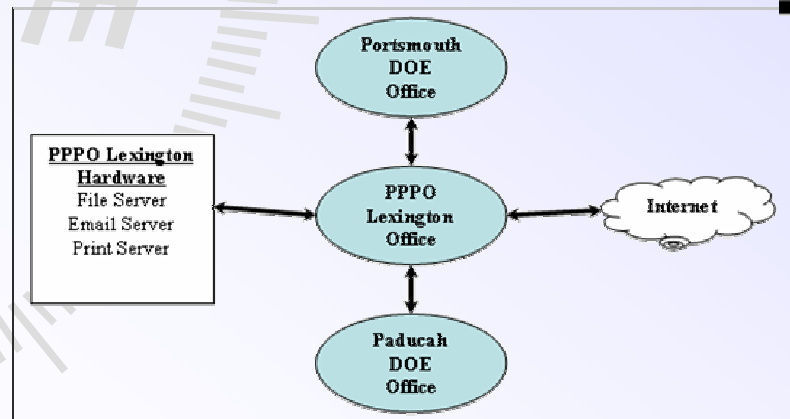


Portsmouth Current Configuration



Paducah Current Configuration

PPPO Current Configuration



DWGIS Recommendations

- **PORTS**

- Update DWGIS with latest OREIS data
- Train LPP-TPMC
- Update DWGIS with latest query tools

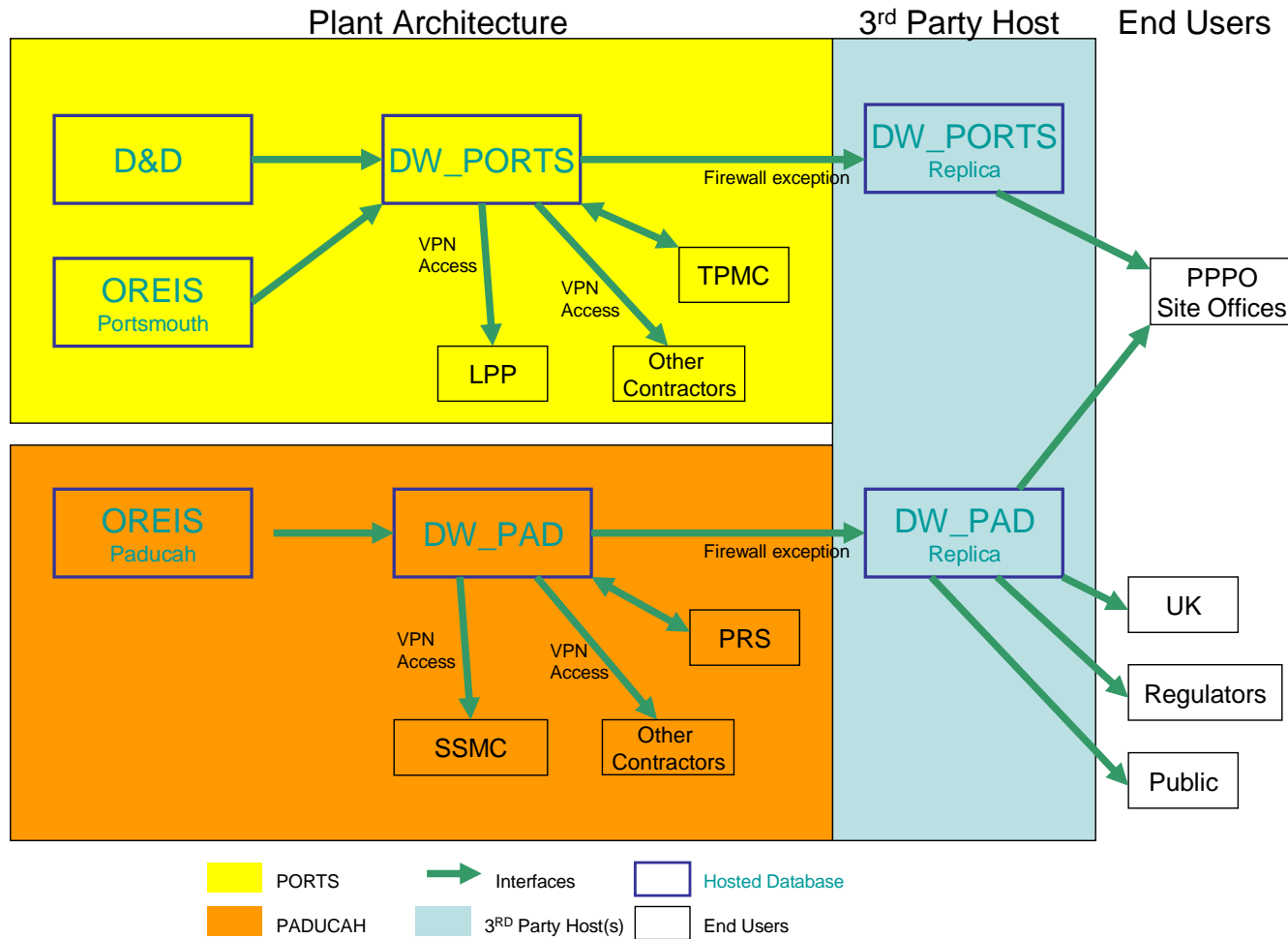
- **PADUCAH**

- Procure HW/SW to install on site
- Install and Train PRS and SSMC

- **OVERALL**

- 3rd Party Hosting for PPPO and KY Stakeholders
- Phase II Development

Recommended Network Configuration



Phase II

- **Document Indexing and Linkage Module**
- **Risk Assessment Module**
- **GIS Analyst Feature Extraction Module**
- **3D Visualization Software White Paper**

Document Indexing and Linkage Module

- Retrieve indexed environmental reports
- Retrieve indexed geotechnical reports
- Integrate “Google”-like commercial software into DWGIS
- Hyperlinks from GIS features (SWMUs, buildings, etc.) to documents

Risk Assessment Module

- **Risk Reduction Standard Management**
 - Manage Background, PQL and Risk based
- **Risk Assessment Data Comparison**
 - Compare and report site data to the standards
- **GIS Viewer Risk Tool**
 - Spatially query and compare to standards
- **Advanced Temporal Plotting**
 - Include Rad-error, detection limit and advanced symbology to plots

GIS Feature Extraction Module

- **High-level GIS data**
 - Extract data as GIS files
 - Download to GIS Analyst PC

3D Visualization Paper

- **Comparison of 3D Software**
 - DGI earthVision
 - C-Tech EVS