



# LEGEND

Last Updated 9/21/2010

## Personnel

### DEQ GIS Managers

- DEQ GIS Coordinator
- DEQ GIS Developer
- ArcGIS expertise
- Oracle expertise
- Python expertise
- AGS for JavaScript expertise
- Support DEQG...PRD, PUB, & FLD
- Maintain non-DEQ layers
- Administer Users and Roles
- Create features from Business data
- Develop and support WMAs, OLQS, Field Verification plans, and .Net Mapping Modules
- Coordination between DEQGIS and other systems

### [BIZ] GIS Manager

- One or many people in Business that have expertise with ArcGIS
- Maintain Business Layers
- Updates Business [BIZ].fgdb
- Maintains Workflow.MXD
- Maintains QA/QC PMFs
- Supports Field Staff & tools
- Supports ArcReader users

### Database Analyst

- Understands Business database
- Expertise with SQL
- Can create stored views to summarize data to support Business feature creation and/or attributes

### DEQ GIS Analysts

- View, analyze, model
- Create & edit business features

### Field Staff

- Understand and document monitored items in the field
- Varying tools depending on skill set and Business

### Data Manager

- Individual with authority to sign off on Business data
- QA/QC Business features
- Communicate changes or sign off to GIS Manager

### Metadata Point of Contact

- Individual noted in Metadata as the Point of Contact for more information on the dataset

## Web Applications



### Web Mapping Application

- ArcGIS Server JavaScript API based mashup of Google Maps base layers, DEQGIS mapping services, and other mapping services as needed to provide context of interactive browser based mapping application



### Online Query Service

- ASP.Net based data filter and query application comprised of 3 web pages; query builder, data grid results, individual record report
- Results and reports pages have option to download displayed data as well as view results in a WMA

## Key files



### ArcPad document

- TOC containing layers
- map projection
- layer properties
- spatial extents
- attribute entry forms



### Map Service Definition

- optimized MXD for mapping service by ArcGIS Server



### ArcMap document

- TOC containing layers
- Page/Print Layout
- map projection
- layer properties
- spatial extents



### ArcReader map file

- published from a MXD



### FGDC CSDGM Metadata

- meets MT GIS Portal and MT DEQ GIS standards

## Spatial Data

### DEQGPRD

- Production and QA/QC GDB for DEQ
- Direct Connects (Oracle Client via "O" Drive)
- MTSTP coord sys for all vectors
- Native coord sys for all rasters
- DB Links to Business Databases for feature creation
- Edit rights for DEQ GIS Analysts to their business schemas
- Read only rights for anyone in business to access their business schema data

### DEQGPUB

- Publication GDB for DEQ
- Source for all mapping and spatial query services
- Direct Connects (Oracle Client) for connecting services and applications
- MTSTP coord sys for all vectors
- Native coord sys for all rasters
- Synchronization for all data from DEQGPRD once authorized by business
- Read only rights for anyone in DEQ to access any published data

### Business Database

- Data supporting forms and reports for Business with location attributes
- Oracle & SQL Server
- DEQGIS links to Production instances only

### DEQGFLD

- Field verification and staging GDB for DEQ
- MTSTP coord sys for all vectors
- Edit rights for DEQ GIS Analysts and Field Staff to their business schemas
- Read only rights for anyone in business to access their business schema data
- Synchronization for all data to DEQGPRD once checked in by Field Staff

### GIS Data Share "L"

- Business and individual folders for storing file based GIS data such as MXDs, LYR files, SHP files, & FGDBs
- Business GIS documentation, contractor or outside provided features and location based files

### [BIZ].fgdb

- Staging GDB for data, features, & metadata required for Business GIS in DEQGPRD
- In progress analysis features and data; final results to be loaded into DEQGPRD

### [Service].fgdb

- All data & features required for a DEQGIS service
- 1 FGDB = 1 service
- Web Mercator projection
- Synchronization from DEQGPUB on nightly basis
- Read-Only features by DEQWMS user

### GDB Synchronization

- managed by Python scripts
- on request or schedule
- not all data may need to be shared across all instances
- entire schema based data replicas where applicable



### Enterprise GDB

- Oracle instance



### File GDB

- ESRI file structure



### Workgroup GDB

- SQL Server Express



### Field GDB (axf)

- SQL Server Express Mobile

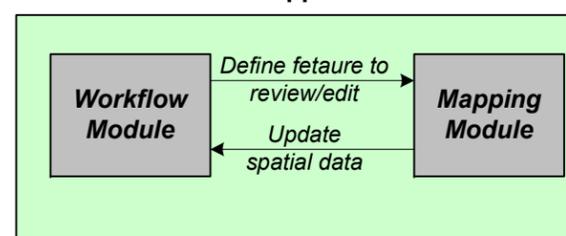


### Business RDBMS

- Oracle or SQL Server

## Desktop Applications

### Business Workflow Application



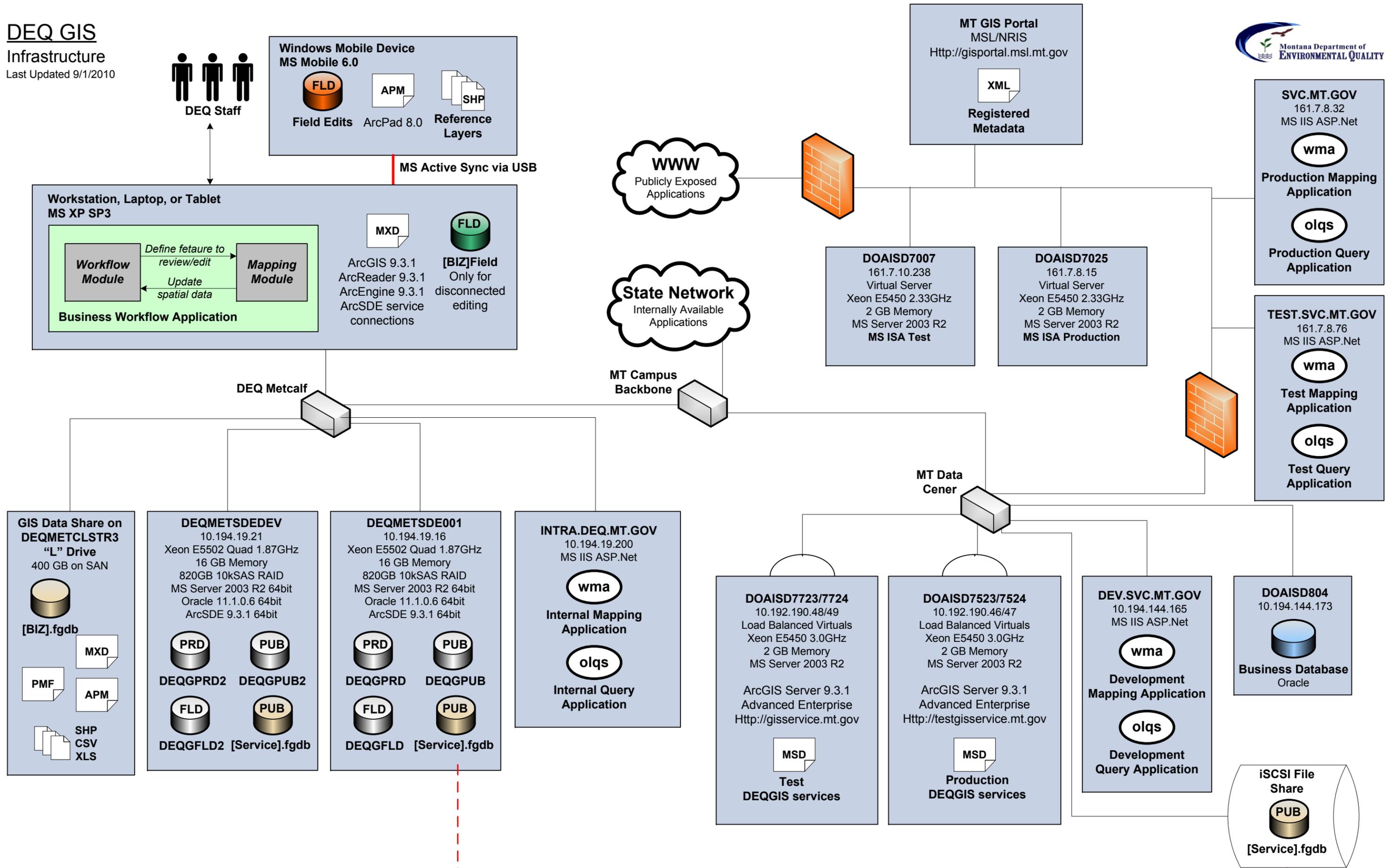
- VB.Net based MS Windows Application

### Workflow module

- Mimics business processes
- Data entry forms, reports, and logic
- Business Database as data source
- Application based roles match RDMS rights

### Mapping module

- ESRI ArcEngine Runtime
- ESRI ArcObjects
- Map contents controlled by referenced MXD
- Editable features sourced from DEQGPRD
- Reference features sourced from DEQGPUB or online mapping service
- Application based roles match file based rights
- Point or polygon centroid, County, Zipcode & TRS written to Business Database for that feature's UID
- Location determination method and map verification documented



Move [Service].FGDB to MT Data Center in FY12 for isolation of external services from internal servers