

Integrating GIS and Asset Management

Sweetwater
Authority



- Serves 183,000 Customers in National City, Chula Vista and Bonita (South San Diego County)
- Distribution system assets:
 - 391 miles of pipe
 - 32,592 services
 - 17 pump stations
 - 25 storage reservoirs
 - 8,202 valves
 - 2,636 fire hydrants



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I.S. Strategic Plan

- Completed in 2002
- The two biggest needs:
 - An Enterprise Information Architecture at the technology level
 - Software Applications
 - Networks
 - Databases
 - An Enterprise Asset Management System
- An Enterprise Information Architecture will support systems integration and information sharing within the utility



Maximo Implementation

- Initial phase completed in 2007 – Treatment Facilities
- Distribution system facilities added in 2008
 - Assets and locations were loaded for valve and FH records
 - Routes were created
 - PM's were created against the route
- Pumping and Storage facilities added in 2009
- Current project – Warehouse/Purchasing



Mobile GIS Technology

- In 2007, selected iWater's infraMap software
 - GIS (ESRI) map based maintenance system
 - User friendly
 - Reporting capabilities
 - Asset Management link
 - Unidirectional flow capabilities
 - Utility Markout capabilities
 - Designed specifically for valve and fire hydrant inspection
- Panasonic Toughbook computers



GIS / Maximo Integration

- Staff and crews had one year of experience using InfraMap and Maximo
- Phase I (completed 2009)
 - Integrate InfraMap with Maximo for valve and FH maintenance (PMs, and CMs from a PM)
- Phase II (in progress)
 - Add capability to create new CM work orders directly, without a existing PM



Preparing GIS Data for InfraMap and Integration

- GIS was in shapefile format
- Converted existing shapefile data to geodatabase format (SQL Express)
- Used geodatabase design supplied by iWater (based on ESRI model)
- Converted existing maintenance data from access tables to tables in the geodatabase
- Created geometric network



Valve and Fire Hydrant Maintenance

- Includes two 2-man crews responsible for valve and fire hydrant maintenance
- 1 – 5 year maintenance cycles
- Prior to Access database, individual cards were used for each valve or fire hydrant to document various inspection or maintenance activities



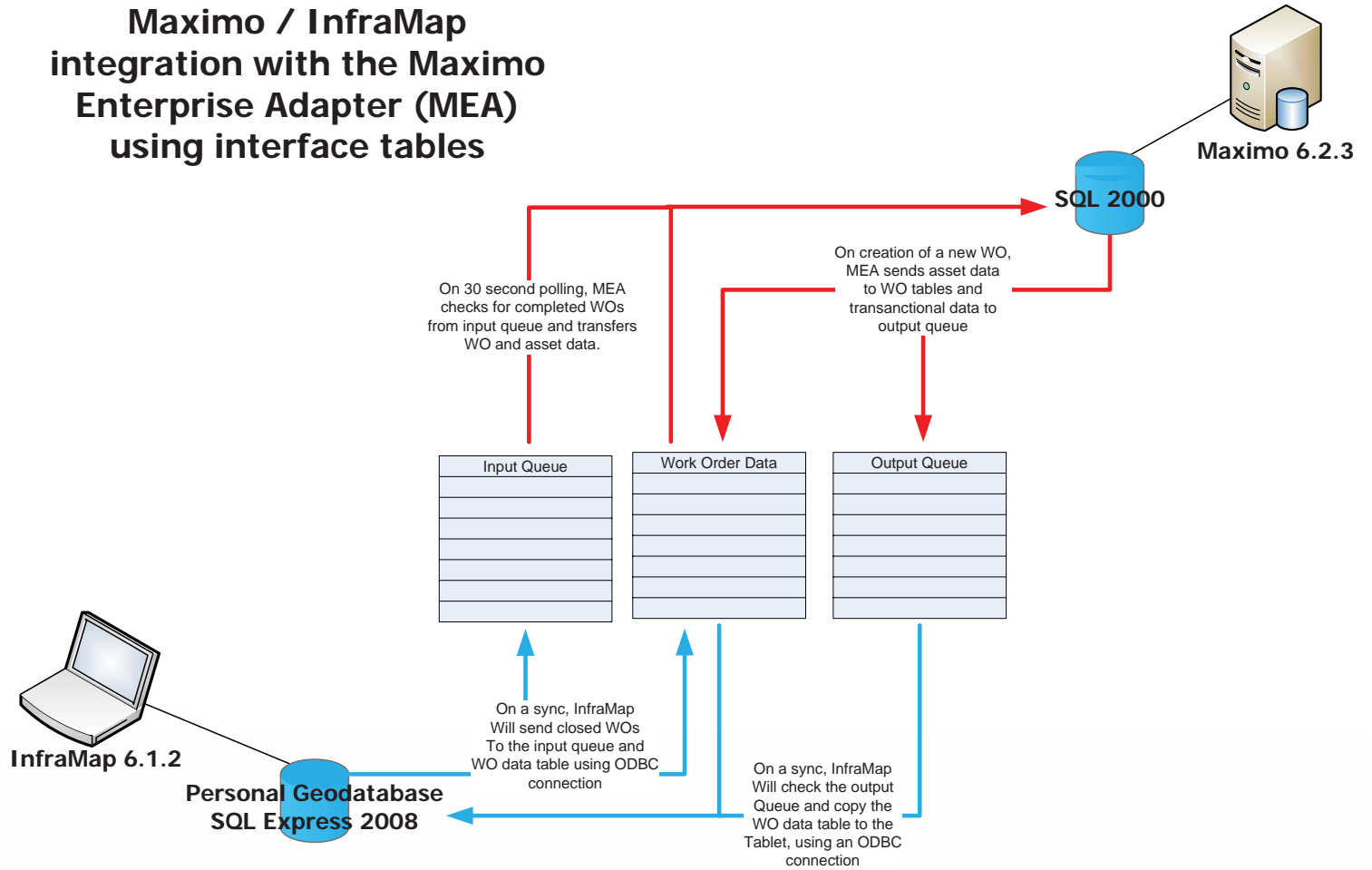


Valve and Fire Hydrant Maintenance

- Began entering maintenance data into an Access database in 2000.
 - GIS staff would print paper forms based on quarter section areas
 - Crews would conduct maintenance and fill out paperwork
 - GIS or Distribution staff would enter data into Access
- Maintenance linked to GIS shapefile data based on unique FH/Valve ID



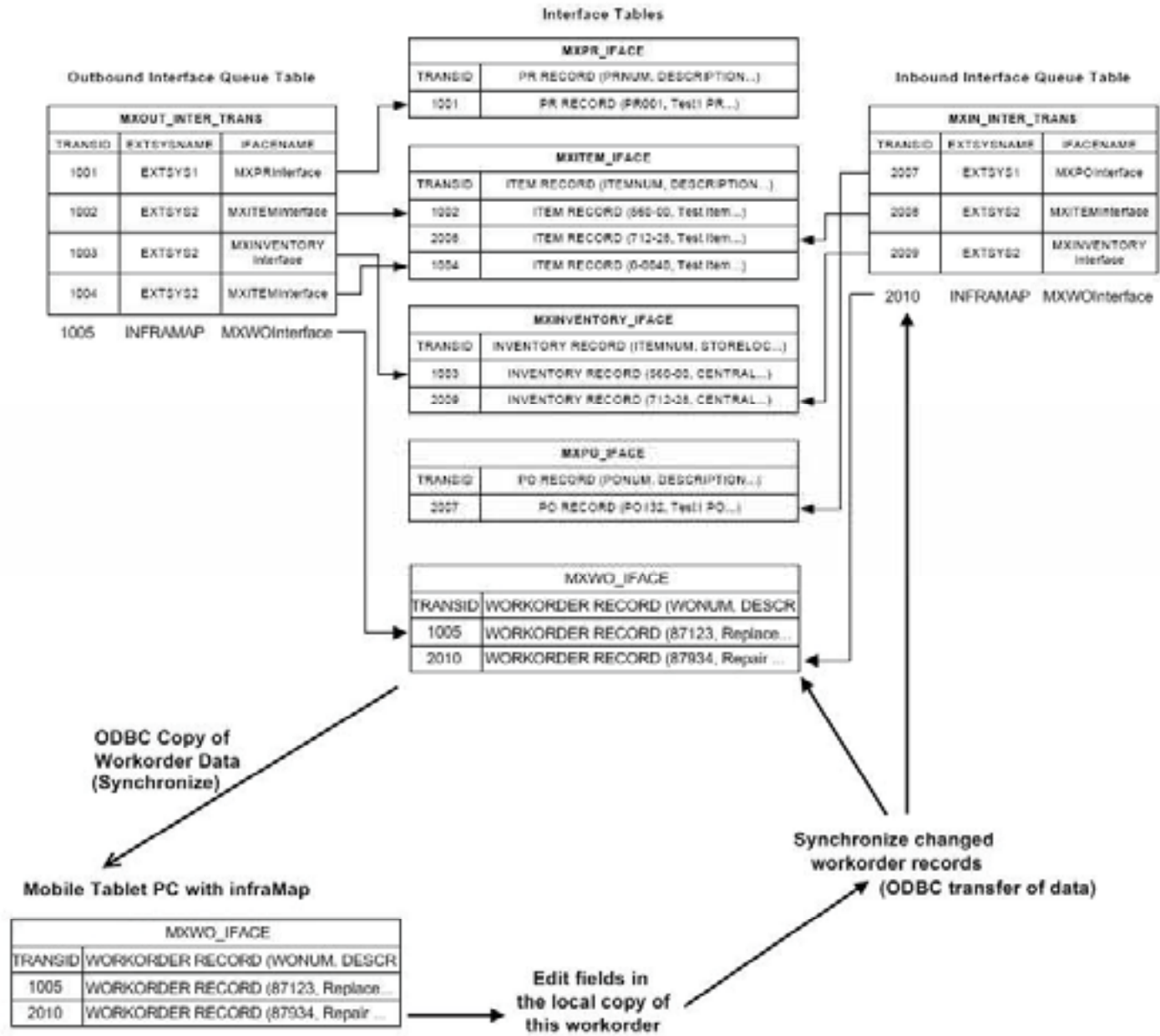
Maximo / InfraMap integration with the Maximo Enterprise Adapter (MEA) using interface tables



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Relationship of Interface Queue Table and Interface Table Records



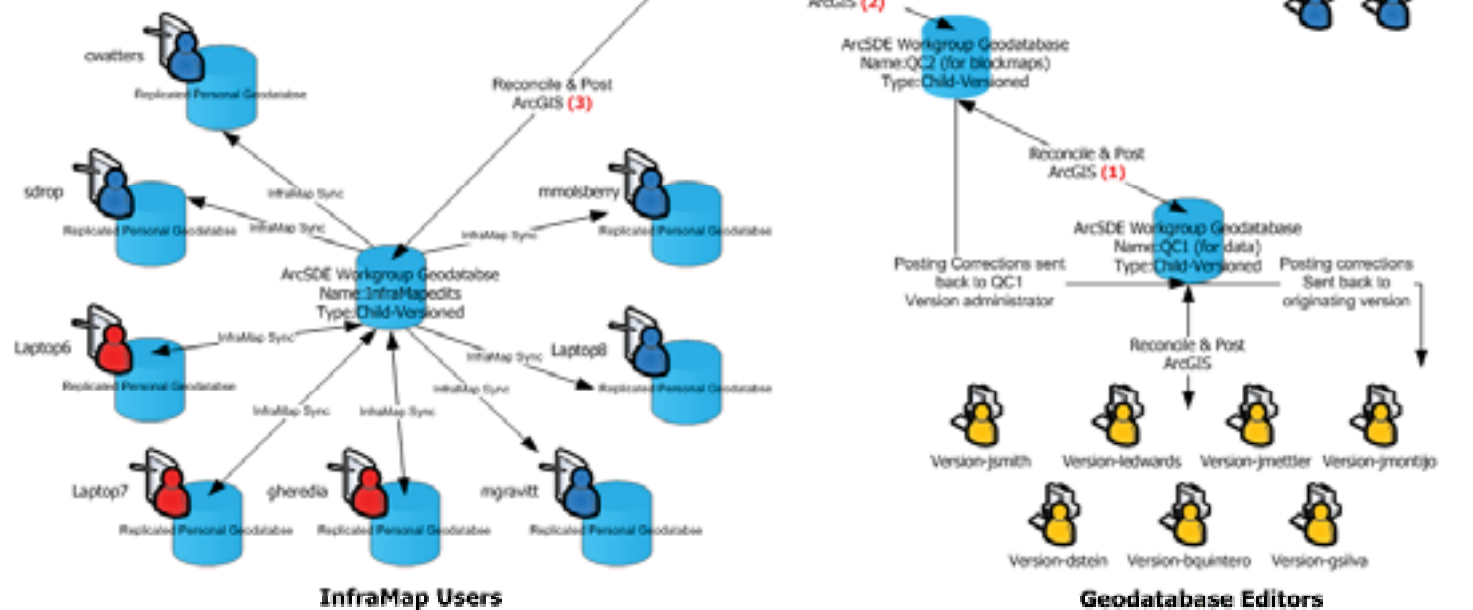
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Distributed Geodatabases

-  Editors of System Data
-  InfraMap Users w/edit capabilities
-  Read only users

- (1) - User ledwards is responsible for the quality assurance of utility data and the utility network connectivity per the established posting guidelines and policies and procedures, for QC1 Version, and for the reconcile and post to QC2 version.
- (2) - User bquintero is responsible for quality assurance of the completed utility data in QC2 version as it relates to annotation and the general appearance of the posting for the printing of the block map books, and the reconcile and post to the Default version.
- (3) - User dstein is responsible for the reconcile and post of version Default to version InfraMapEdits and the one-way sync to the Publication replica.



InfraMap Users

Geodatabase Editors

InfraMap Demo

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Questions?

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